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BOOKS AND PAMPHLETS RECEIVED.

An Elementary Treatise on Human Anatomy: By Joseph Leidly, M. D., Professor of Anatomy in the University of Pennsylvania, etc., etc. With 302 illustrations. Pp. 663, 8vo. Philadelphia: J. B. Lippincott & Co. 1861. From Messrs. J. C. Morgan & Co., booksellers, Exchange Place, N. O.

Memoranda Medica; for the use of Students: By Henry Hartshorne, A. M., M. D., Professor of the Theory and Practice of Medicine, in the Pennsylvania College, etc., etc. Pp. 190, 8vo. Philadelphia: J. B. Lippincott & Co. 1860. From Mr. T. L. White, bookseller, 105 Canal street, N. O.

Recherches sur la Substitution Graisseuse du Rein: Par M. le Docteur Ernest Godard, Ancien interne des hôpitaux de Paris, membre de la Société de biologie, de la Société d'anthropologie, de la Société anatomique, membre correspondant de l'Académie de médecine de Madrid. Pp. 31, with three plates. Paris: 1859.

Prize Essay: "To what Affections of the Lungs does Bronchitis give Origin?" [illegible] p. 75. By Daniel Denison Slade, M. D., of Boston. From the author.

Recherches tératologiques sur l'appareil séminal de l'homme: Par M. le Docteur Ernest Godard, Docteur en Médecine, membre de la Société de Biologie, etc., etc. 1 vol. grand in-8vo de 152 pages, avec quatorze planches lithographiées. Paris, librarie de Victor Masson, place de l'École-de-Médecine. 1860.

Physician's Hand-Book of Practice, for 1861: By William Elmer, M. D.. New York: W. A. Townsend & Co. 1861. From Messrs. J. C. Morgan & Co., booksellers, N. O.

The Physician's Pocket Memorandum for 1861: By C. H. Cleaveland, M. D. Cincinnati: 1861.

Observations upon the Form of the Occiput in the various Races of Men: By J. Aitkin Meigs, M. D., Professor of the Institutes of Medicine in the Pennsylvania College, etc., etc. From the author.

Statistical Report of the Sickness and Mortality in the Army of the United States, Compiled from the Records of the Surgeon's General Office; embracing a period of five years, from January, 1855, to January, 1860. Prepared under the direction of Brevet Brigadier General Thomas Lawson, Surgeon General United States Army, by Richard H. Coolridge, M. D., A. M., Assistant Surgeon, U. S. Army. Washington: George W. Bowman, printer. 1861.

A Practical Treatise on the Ætiology, Pathology, and Treatment of the Congenital Malformations of the Rectum and Anus: By William Bodenhamer, M. D. Illustrated by 16 plates. Pp. 368, 8vo. New York: Samuel S. and William Wood. 1860. From the author.

Lecture delivered in the University of Maryland, Oct. 1860: By Edward Warren, M. D., Professor of Therapeutics and Materia Medica. Pp. 24.

Sixth Annual Report to the Legislature of South Carolina, relating to the Registry and Returns of Births, Marriages and Deaths, in the State, for the Year ending December 31, 1859: By Robert W. Gibbes, Jr., M. D., Registrar. Pp. 116. Columbia, S. C. 1860.

Transactions of the State Medical Society of Indiana, at its Eleventh Annual Session, held in the City of Indianapolis, May 17 and 18, 1860: Pp. 68. Richmond, Ind. 1860.

Annual Address delivered before the Philadelphia Medical Society, at its Meeting held on March 26, 1860: By R. La Roche, M. D. Published by order of the Society. Pp. 61. Philadelphia. 1860.

Medico-Legal: An Inquiry concerning the Value of Testimony respecting Facts as they appear to a Mind partly Conscious; By T. L. Wright, M. D., Bellefontaine. Pp. 32. Columbus. 1860.

A Discourse on Speculative and Inductive Medicine: By Henry Hartshorne, M. D., Professor of Theory and Practice of Medicine. Pp. 116. Philadelphia. 1860.

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THE

NEW ORLEANS

MEDICAL AND SURGICAL JOURNAL.

JANUARY, 1861.

ORIGINAL COMMUNICATIONS.

ART. I.—*A Case of Monstrosity:* By WM. H. HAWKINS, M. D., of Rocky Comfort, Sevier county, Arkansas. With Remarks. Reported for DAVID TAYLOR, M. D., of the same place.

ON the morning of —— April, A. D. 1860, at 4, o'clock, I was called upon by Dr. D. Taylor, of this vicinity, to examine twin males, which he had just taken from Mrs. C——, *æt.* 32 years. This was her fourth confinement, nothing unusual ever having occurred before, her children always coming perfect, well formed, and single. Dr. T. stated he had been called the evening previous, at 8 o'clock, and found the lady in the first stage of labor, with rather an unusual sized abdomen, but suspected nothing.

An examination *per vaginam* was made, when he found the os well dilated, and the position favorable; the presentation being the vertex, occiput to the left acetabulum, the forehead to the right sacro-iliac synchondrosis. After the lapse of three hours, the head engaging in the superior strait rather slowly, another careful examination was had, and an arm detected coming down with the head, thus impeding its descent. This was gently pressed upwards, and now, as the head descended, the presence of a second one became

manifest. Now, finding a complication, hurriedly thinking in his own mind what to do, it was determined to flex the second head as much as possible, so as to cause it to lie or be buried upon the thorax of the first or descending child; so that, as the two had by this time engaged in the inferior strait, as much room might be gained as possible, it being now too late to attempt evolution. To add to the increasing difficulty, the arm again descended, the elbow resting on the forehead of the most pendent child. When an attempt was made a second time to get the arm above the head and into the cavity of the pelvis, it could not be done without interfering materially with the rotation of the descending head; but as the uterus was acting most energetically, by carefully retaining the arm in its then position, it gradually flexed upon itself until it was clear of the descending head. Labor now progressed favorably, when it was apparent, as the superior child having fully engaged in the inferior strait, that they were joined together at the sternum. It was also evident that the woman could not bring forth, should the head of the superior child engage at the outlet with the shoulders of the inferior one. To avoid this, the head of the superior child was, by careful manipulation, caused to rotate so that the head was made to come between the inferior maxillary and clavicle of the most dependent one, and then the case was left *per vias naturalis*, but carefully watched, so that if impaction should take place, decapitation of either would obviate the trouble, since they were not now *viable*. A short while now only elapsed, when the Doctor had the pleasure of beholding, to his astonishment, the following described monstrosity:

Viewed externally, the monsters were found to be males of the size of seven months' carriage, weighing six pounds and fifteen ounces, the largest measuring in length fifteen inches and three-fourths of an inch, the smallest fourteen inches and three-fourths of an inch; directly through the chests, from spine to spine, six inches; circumference under the arms twenty-one and a half inches. They looked face to face, the line of junction commencing four lines below the sterno-clavicular articulation, and extending within twenty-eight lines of the pubis of the largest child, and eighteen lines of the pubis of the smaller one; the entire length of junction measuring four inches and a half of an inch. Both heads were well formed and developed, being nearly equal in size, measuring, from one parietal protuberance to its opposite, in diameter, of each three

inches; mento-bregmatic four inches; occipito-mental four inches and a half of an inch; occipito-frontal three inches and three-fourths of an inch.

The junction being sternal and costal, a slight depression or sulcus existed on one side, whilst the other side presented a flattened area. The upper extremities of both were natural, having two heads, four arms, and four hands. The largest or longest child was normal externally in every respect. The lower extremities of the smallest or shortest child presented the following abnormalities, *i. e.*, the glans penis was occluded by phymosis. The right leg terminated one-half the length of the left with a well-formed tibia and fibula, the latter having a wide cartilaginous expansion, with a rudimentary toe to its inner side; the former protruded through the surface of the skin in a sharp spicula of bone.

The umbilical cord was situated immediately in the raphé, at the base of junction of the two children, being united in the center by the peculiar gelatinoid material composing the cord, with a narrow sulcus intervening, thereby giving, apparently, a cord to each child, with the accompanying arteries and veins. The cord was not over four inches in length, and ruptured about two inches from its connection with the children, just as the last one was expelled. There was but one placenta. The labor was what is called natural, being only eight hours duration.

Autopsy, four hours after birth: An incision was made immediately in the center of the line of junction of thorax. Heart—One situated between the children, enclosed in a perfect pericardium, between two perfect pleuræ. One perfect auricle, located on the left side, within the cavity of the thorax of the largest child. On the opposite and upper side of the heart, within the cavity of the thorax of the smaller child, was a rudimentary auricle. The organ was somewhat flattened and collapsed, measuring one full inch from apex to base, three-fourths of an inch in breadth, and one-half of an inch in thickness. Not wishing to destroy the specimen, the organ was not laid open to examine the ventricles. The umbilical arteries and veins, and the ducti venosi, there being a set for each child—the former entering, as was above-mentioned, in a single cord—diverged at the septum, and after traversing the lumbar regions by the side of the vertebral columns for a short distance, crossed over and united in one single trunk in the larger child. The latter also

united in same child, emptying directly in what might have been termed an ascending cava. The venæ portæ conveying the blood of the now single trunk of the two sets of vessels of each child into the liver, were two in number.

The aörta, commencing in a single trunk, arched over the heart, and by this arrangement blood-vessels to each head were given off; but in descending, it divided at the diaphragm into two, one passing directly through it; the other branch perforated the pleura of the left child, and passed through the center of the diaphragm for that child. They divided respectively into primitive iliacs in the usual situation. There was but one perfect pulmonary artery, which arose from the right ventricle and conveyed the blood through the ductus arteriosus to the lungs of the larger child, whilst there was merely a branch reflected from the root of its origin around to the lungs of the smaller child. The innominate veins of the two children united in the center of the thorax, just above the heart, and forming a descending cava, very short in length, entered the right auricle.

It must be borne in mind, no septum divided the children in the thorax, but the organs of respiration were simply separated by the pleura pulmonalis, between the folds of which the heart rested, with its base on the diaphragm, which was common to both children. This muscle being single, and not divided by the septum, which only extended up to it, reflected both anteriorly and posteriorly over the liver, which will be noticed directly. The diaphragm extended from the one common sternum to the vertebræ of each child.

Lungs of the larger child normal, whilst those of the smaller were altogether rudimentary and incapable of being inflated. There were the pleuræ pulmonalis and pleuræ costalis to each lung.

The union was complete the entire length of the sternum and true ribs; the pectoral as well as the abdominal muscles of the one coalescing and indigitating with their fellows of the opposite child. Upon cutting through the abdominal muscles close to the side of the septum, which divided the abdominal viscera of each in the centre of the two, on the side of the smaller child a large quantity of blood escaped from its abdominal cavity, whilst none escaped from the abdominal cavity of the larger child when it was opened.

The liver now being brought into sight, was found to be single, bi-lobed, and extended from one hypochondriac region to the opposite one, with a single fissure or sulcus where the septum passed

over it to reach the diaphragm, having two thin edges in each hypochondrium, whereas the centre was quite thick, giving to it, to all intents and purposes, the form of the common bat. It was four inches wide, three long, and one inch thick. It was adherent throughout from side to side to the diaphragm. There were two large gall-sacks, one to each lobe, opening directly into the duodenum, without the common duct; two stomachs, one for each child; these were very small, and situated posteriorly to each wing of the liver. Omentum perfect. A set of normal intestines for each, and separated by the common septum above mentioned. They terminated in well formed ani. The vermiform process of each set was very long. Pancreas were in the larger child; spleens in each rudimentary. Testes for each normal. Kidneys four, and normal.

It is evident that had these children arrived to the full period of utero-gestation, and supposing the mother could have given them birth, viable, they could not have survived. The case is reported with perfect exactness, and I now have the specimen in my possession, having been kindly made a tender of it by my friend, Dr. Taylor, at whose request I submit the above report for your Journal, should you deem it worthy of notice.

The case, I think, is possessed of rare interest, not only on account of the infrequency of the cases of the kind reported, but also from the mechanism of labor, which differed somewhat in this respect from the established rule of authors.

Dr. Meigs, Sr., is of the opinion that in all such cases, spontaneous evolution must occur prior to delivery. He had a case of two heads on a common trunk, the process of parturition of which, he thus figures: "One head came down first; this was delivered and became fixed against the pubic arch, when the body came down in the manner described when speaking of the process of evolution in arm cases, the second head being delivered last." Dr. Meigs points out, that it can only be by this method that double monsters are generally delivered. He further says: "Even when the feet present, and the union is at the sacrum or any part of the trunk, after the delivery of the buttocks, the upper part of body and head must descend by the process of evolution."

But in the case before us, a very rare one indeed (something similar to it externally being just barely mentioned by Ramsbotham, page 624, and figured in plate at page 460), whilst its analogue is

not found in the Siamese or the African twins, we have vertex presentation of both heads combined, also with that of arm; yet by simple manual manipulation the arm is got rid of, whilst the two heads come down together, engaging almost simultaneously in the superior strait. Here by manipulation, the best that could be done under the circumstances, *i. e.*, by retaining the head of the superior child *in statu quo* until the head of the lower child was forced down, the difficulty was obviated. No evolutions had as yet taken place. Directly we find the head of the inferior child at the inferior strait, and the head of the superior child buried on the thorax and against the neck of the descending child, with the arm again presenting. This was simply held firm during the contractions of the uterus, when it flexed upon itself over the head of the children, thus getting entirely out of the way. Yet no evolution. The first head is delivered; the second head, occupying its position in inferior strait, is presently also delivered. Then the bodies are delivered, and yet no evolution.

This case illustrates also, that almost under any circumstances, Nature, in a well formed, muscular, strong woman, will effect wonders.

The mother, in this case, recovered most kindly, and is now as well as she ever was before. A good hint this to obstetricians in embryo, who, like Chambers with his forceps, may wish to interfere too much instrumentally with Nature and her laws.

OCTOBER 3, 1860.

ART. II.—*Sub-nitrate of Bismuth as a Dressing for Blisters.*

DOCTOR B. DOWLER—*Dear Sir*—In the September number of the *New Orleans Medical and Surgical Journal*, page 670, is a brief notice by Professor Richardson, of the sub-nitrate of bismuth, as a topical application to burns, scalds, etc. Having been greatly and repeatedly troubled, during a practice of eighteen years, by the effects of vesicatories on young and irritable subjects, I was led by the suggestions of Professor R. to apply the bismuth to a recently

blistered surface, of large extent, in the case of a young and very irritable subject, suffering with a double pleuro-pneumonia. The prompt relief from suffering, and the charm-like change in the character of the denuded surface, from a fiery, inflamed, and angry aspect, to that immediate healthy action and rapid restoration of the cuticle, so encouraged me in the use of the remedy as not only to apply it subsequently in several similar cases, with a like happy result, but to recommend it unhesitatingly to my professional acquaintances, who are unanimous in their expressions of satisfaction and delight at its effects. The prompt healing of a blistered surface in very many grave cases of disease in which we are *compelled* to resort to the painful and unpleasant alternative of a *blister*, is a desideratum which no practitioner of experience will deny. Nor do we believe it would be going too far to say, that we believe many practitioners of judgment and experience would willingly corroborate the assertion that patients often die from the untoward effects of a blister, after the disease for which it was applied had yielded to treatment, or expended its force and left the patient in a fair way for recovery, *but for the blister*. Who has not seen a large inflamed blistered surface in a weak, emaciated, irritable subject, with vitality at its lowest ebb, covered with foul, bleeding, unhealthy granulations, little deep ulcerous pits, and foul sloughs, goading and fretting the exhausted system into a sympathetic, irritable fever, day after day, until death closed the sad scene? Unguents, salves, poultices, astringents, styptics, all, *all*, signally fail of the desired effect in these cases, and the compelled custom has been to shield the part with such applications as protect it best, and *im*patiently wait the result.

To those of my professional brethren who have experienced as much chagrin and mortification as myself under such circumstances, I feel assured the following simple and brief suggestions will prove a boon of no small value, when it is desired to heal a blistered surface, at *any* stage after the cuticle has been removed or raised: Make a paste of linseed oil and sub-nitrate of bismuth, about the consistency of very thick cream, and apply it carefully with a fine, soft mop, or camel's hair brush, so as completely and pĕrfectly to cover every part of the affected surface with a thick coating of the paste; over this apply a thin, soft clŏth of old linen, slightly lubricated with linseed oil; then a layer of thin, soft bats of carded cotton; then a thin, broad bandage, smoothly and evenly applied to

retain the whole *in situ*, and your trouble is over with *that* blister. No torture from mopping, washing and dressing is subsequently necessary. No noisome, greasy rags, or foul cabbage leaves, or poultices, are required. All that is necessary is occasionally to raise the dressings, and carefully retouch any part of the blister with the bismuth paste, which may have become bare from moving about, etc. In a word, keep the part constantly and thoroughly covered with a thick coating of the paste, and light soft dressing over it.

The recent introduction of bismuth as an injection for vaginal leucorrhœa, for gonorrhœa, etc., etc., and its known efficacy in many morbid conditions of the mucous membranes, would naturally point to its efficacy in an equal degree, when applied to denuded surfaces. But I will not trespass on your valuable space by attempting an exposition of my views in regard to the rationale of the action of a therapeutic agent so generally and so well understood by the profession.

JOHN E. WRIGHT, M. D.

AUGUSTA, Caldwell Parish, Louisiana.

ART. III.—*Treatment of Traumatic Tetanus.*

GENTLEMEN: The history of the following case of "Traumatic Tetanus" may prove to be of sufficient interest to fill a page of the "Journal:" May 23, at 8, P. M., called to a negro boy, æt. 23, belonging to Mrs. E. S. Six days previous he had pierced his foot with a piece of cane; the wound was trivial, causing but little pain, and passed unnoticed until the morning of the fourth day after, when he complained of soreness of the muscles of the face and neck, and slight spasmodic action of the same region. His symptoms grew rapidly alarming, and at night a neighboring physician called and prescribed. I did not learn what the prescription consisted of. On the second day the doctor informed the mistress of the boy that the case was one of tetanus, saying that the termination would be fatal, and took his leave of the case. I found the patient breathing heavily, and groaning with each inspiration; body resting upon the head and

heels, unable to turn in bed; constant paroxysms of convulsions extending over the whole person; the patient praying for death to relieve his intense sufferings. On proceeding to examine the case, I found that his bowels had not been moved since the day before; urine scanty and high colored; pulse 80 per minute, small and quick, giving a *metallic twang* to the finger; skin bathed in a cold sweat; could talk only by making considerable exertion, and his words were not distinctly articulated; mouth open about a quarter of an inch. His tongue was coated with a white fur, with highly elevated red papillæ. Having seen a number of cases of tetanus, both in hospital and private practice, and having before my mind the signal failures in nearly every case that had fallen under my notice, I resolved to treat this one in (to me) a new manner; and as I believe this manner of treating this disease is one that (to say the least) is not generally followed, and no where, as I can find, spoken of in the books, I will give it somewhat in detail. 'Tis true it is the result of only *one* case, but the good results following were so marked *in this one case,* that I venture to meet the charge of carelessly vaunting a *new* specific, rather than trust to the uncertainty of waiting for another case ere I report it. It may perhaps prove successful in other hands.

I commenced by giving a teaspoonful of a solution of tart. antimony (gr. iv to the ounce of water) once in ten minutes, continuing to give that quantity until my patient complained of nausea, to produce which required the entire ounce of the solution. After gaining the nauseating point, I steadily kept it up throughout the entire night, and with occasional intervals (to let him sleep) during the next day.

He vomited slightly several times. As soon as nausea came on, it was attended with a mitigation of all the symptoms of distress, and ere the morning sun the opisthotonos had entirely disappeared. The pulse was full and soft, and convulsive action was confined to the muscles of the side and diaphragm.

At 4, P. M., on the 24th, I gave a grain of morphia, and a small quantity of beef tea, discontinuing the antimony.

On the 25th, found he had passed a very comfortable night. Bowels had acted freely; skin warm; pulse full, 60 per minute; can open his mouth an inch and a half; occasional convulsions of the diaphragm, and great stiffness of the entire body; ordered quinine

(gr. iv every four hours), mustard the entire length of the spine, and beef tea occasionally.

On visiting him in the evening, find he has slept considerably, and says he is feeling a great deal better; appearance certainly much improved; asks for food, as he is hungry; still has considerable spasmodic action of the diaphragm, and cannot raise either leg, nor can he raise himself in bed. Complains of nothing but the twitching; tongue as at first.

Having had no action on his bowels since the night previous, gave a dose of castor oil and turpentine; discontinued the quinine and mustard. Determined to test the efficacy of the tart. antimony, I commenced giving it at 5, P. M., and continued it, keeping up a constant state of nausea, with an interval from 11 to 1 o'clock, until 7, A. M.

26th of May: Find him every way improved; is able to open his mouth nearly to the natural width; pulse soft and weak; can rise in bed without assistance; tongue beginning to clean; urine more abundant, and less highly colored; says he is very hungry; ordered quinine (gr. iv every six hours); beef tea sparingly; allowed him to smoke his pipe.

He continued to improve rapidly until the night of the 28th, when I was hastily summoned, and found a return of the spasms nearly as bad as at first. I immediately resumed the use of the antimony, and in less than two hours he was entirely relieved from pain, and soon fell asleep.

From this time forward he progressed slowly toward recovery. The stiffness of the limbs was the principal obstacle to overcome, and I used a variety of articles to remedy this. I think he derived the most good from the use of a galvanic battery used daily after the first week.

His recovery was tedious but without suffering, and on the 13th of June he walked two miles to my office to report himself well. Since that time he has performed his usual duties as a field hand.

I submit this case with no further remark than this: I am convinced that tart. antimony is a valuable (the most?) remedy in the *acute* stage of traumatic tetanus, and worthy a more extended trial than my limited opportunities enable me to give it.

I remain, Gentlemen, very truly yours,

H. LEE PARSONS.

NEW GASCONY, Arkansas, Sept. 19, 1860.

ART. IV.—*Tetanus Caused by the Stinging of a Wasp; Treatment; Recovery.* By GEO. S. D. ANDERSON, M. D., of Alexandria, La.

TETANUS is admitted by the highest authorities to be one of the worst of the diseases affecting the nervous system; but that recoveries from it sometimes take place is not less true. As in most other, or a large number of other diseases, the causes are *predisposing* and *exciting*. Of the former, the two extremes of heat and cold may be enumerated as most common; for the disease is alike found within the tropics and in the frozen regions of the north. Of the latter, almost anything making a sudden impression upon the nervous system, as the lash of a whip, or lacerating of the flesh with a splinter, or fish-bone, or, as in the case we are about to report, the stinging of a wasp.

Dudley, negro boy, about eleven years old, belonging to the estate of Captain W., of this parish, was stung on the upper eyelid by a wasp, on Monday, 6th of August last. On the day following, he had opisthotonos. The overseer sent him from the plantation to the summer seat of Mrs. W. The day following we saw him, and prescribed for him, though we were not the family physician, and did not expect to continue the treatment of the case longer than until the regular physician came. Dr. Johnston, of Alexandria, had been sent for, but being unable to attend, he sent Dr. Newton as his temporary substitute.

We commenced the treatment by giving about fifteen grains of calomel, with directions for it to be followed by castor oil and enemata of warm water, if necessary, our object being to rid the intestinal tube of its entire contents as soon as possible. We also cupped him along the spine. At this point we stopped, supposing the family physician would take charge of the case where we left off. Dr. Newton saw him in the evening, and remained with him all night. He used croton oil, laudanum, spirit of valerian, ether, assafœtida, and perhaps other "antispasmodics" too numerous to mention. Feeling an interest in the case, however, we called the next morning before Dr. N. left, for the purpose of seeing the case with him, and giving our opinion as to the pathology and therapy of the disease. It was a deliberate opinion that there was irritation of the nervous system generally, and of the spinal cord. Such being true, we thought the indications were reduction of the system, and to effect this most certainly, we advised that the patient should be mer-

curialized, at the same time using morphia, so as to keep the system fully under the influence of it. Dr. N. seemed to agree with me in this opinion, and we parted. He returned, however, in the evening, with the statement that he had consulted two able physicians in Alexandria, and they had concluded that no good could result from the use of mercurials. So he continued his routine course. He abandoned the patient, however, in two or three days, and saw him no more.

We called a week afterwards, and found that, although the cramps continued to return, they were shorter in duration, and the intervals between them were longer. Dr. Johnston saw him the day following, and carried out the treatment, in the main, that we at the onset of the disease advised. His gums were touched by the exhibition of mercurials. His improvement was more marked, and he is now (14th September) walking about the yard, though when suddenly spoken to he will "jump." We think he may be said to have recovered.

We cannot conclude this article without offering a few remarks upon the therapeutic indications in this disease.

As the predisposing causes of the disease may be the two extremes of temperature—heat and cold—it is clear to my mind that the therapeutic indications in the disease, as produced by these opposites of temperature, would be diametrically opposed to each other. For who can doubt for a moment that there would be an exaltation of function of the nervous system under the burning rays of a southern sun, while in the frozen region of the north there would be a corresponding depression. The treatment, then, of this disease would be essentially different in Louisiana and Greenland. The general indications in the one case would be to reduce to the standard of health as near as possible, while the other would be to raise.

We are clearly of opinion that, after the bowels have been first rid of their contents, the mildest means possible should be resorted to, so as to insure one or two motions a day. Seidlitz powders, cream of tartar, the fluid magnesia, or sulphate of magnesia, with enemata of warm soap-suds, would, in our opinion, be preferable to any of the more powerful or drastic purgatives. Opium or morphine, it is well known, acts as purgative when given in spasm of the bowels. In the disease under consideration, it may have the same effect.

It should be borne in mind that this is a disease that requires time for recovery; therefore, we strenuously object to the use of any powerful or drastic purgatives, or any thing calculated still more to exhaust the vital powers.

So much for the medical management of the disease. There are cases that require surgical interference, but on this head we have nothing to remark at present.

V

Art. V.—*Removal of a Tumor from the Neck.*

Greene County, Alabama, Sept. 27, 1860.

Dr. Dowler: I believe it is generally conceded by the surgeons of our cities who do a large practice, that a considerable portion of the surgical cases sent them from the country, could have been operated on just as well at home in the country, and by the country surgeons, as by the surgeons of the city, without the trouble and expense of a long trip; besides having the additional advantage, to the patient, of the pure air and quiet of the country, and the comforts of home.

I herewith send you a brief report of an operation performed a short time since, by Dr. N. Friend, of this county: A negro child, 10 months old, had a tumor about the size of a large orange upon the side of its neck; latterly its size had so increased as to push up the ear and close the external meatus. It began originally behind the angle of the jaw, and its growth was very rapid, so rapid as to threaten death by suffocation. The tumor had a hard, firm feel every where except at its upper portion, where there was a sense of fluctuation detected.

Dr. Friend determined to remove it, and in the presence of Dr. Hunter and myself, he first made a puncture into the tumor, when only a little blood was discharged; then the little patient was placed on a narrow table, near a window, and chloroform was administered. As soon as the child was rendered insensible, Dr. F. made two elliptical incisions, from above downwards, so as to remove a considerable portion of the integument; the tumor was then cautiously

dissected out, care having been taken to leave not the smallest portion of it.

The tumor, when examined, proved to be of a fatty substance, and when opened was found to have a cavity in its upper part filled with a fluid like claret; there was about a wine-glass full of this. The child recovered without any bad symptom, and is now doing finely.

Respectfully, P. B. MINOR, M. D.

ART. VI—*Obstetrical Report.* By L. E. PROFILET, Resident Student Charity Hospital.

As reports of obstetrical cases in New Orleans have seldom or never been made, and hoping that such a report might prove interesting, I have collected a few statistics from the cases occurring in the lying-in ward of the Charity Hospital, between the months of April and July. The number of cases was, of course, not very large, and the results of little importance in proportion. Still, as they have been carefully prepared, they may be worth something.

There were twenty-eight cases in all—the progress of which was noted at the time they occurred.

There were also several cases of some interest—a history of which I will add to the statistics.

The points which I shall consider are—the time at which the labor occurred; presentations and positions; proportion of boys and girls; average weight of all the children; comparison of weights of boys and girls; length of cord; weight of placenta; relation of length of cord and weight of placenta to child; length of time in labor; length of second stage; the time the placenta was retained; and the relation between the funis coiled around the neck of the fœtus, and the length of the cord.

During the three months, as I have said, there were twenty-eight women delivered. Among these, there was one case of twins; one case of premature labor, at seven months; and one case of abortion.

In the greater number the labor occurred during the day time—

fifteen were delivered in the day time and thirteen at night. This is somewhat different from what is usually stated.

In one case the presentation was not noted. Omitting that case, there were still twenty-eight children born—one woman having had twins. Of these fifteen presented the vertex, occiput to the left acetabulum ; seven presented the vertex, occiput to the right acetabulum. In three cases the feet presented, in two the breech, in one a hand and foot. In the case of twins one presented the vertex, occiput to the right, and the other presented the breech.

There were fifteen boys and thirteen girls. The weights of the boys varied between four and a half pounds (the weight of one of the twins) and eight and a half pounds. The average weight of all the boys was seven and one-seventh pounds.

The weights of the girls varied between five pounds and ten and a half pounds. The average weight of all the girls was seven and a half pounds. The average weight of all the children was seven and nine twenty-eighths pounds. Thus, the average weight of the girls—contrary to what is usually true—was slightly greater than that of the boys.

The cords varied between nine inches and thirty-nine inches. The average length of the cord was twenty-one and a half inches.

The lightest placenta weighed eight ounces, the heaviest twenty-four ounces. The average weight of the placenta was nineteen ounces.

There is a peculiarity about the shortest cord, that it was accompanied by a very light placenta. The length of the shortest cord was nine inches, the placenta accompanying weighed nine ounces ; weight of the child was six and half pounds—below the average, but not small in proportion to the short cord and light placenta. But in the case where the placenta weighed eight ounces, the cord was twenty-five inches long, above the average length, and the child weighed six pounds. From these two cases, I should judge that a long cord does not always accompany a large child, nor is the cord short because the child is small ; that, in fact, there is no constant relation between them. It would seem, however, from these and the other cases, that there is a constant relation between the size of the placenta and child.

In regard to the duration of labor, I have considered it as extending from the first intimation to the patient that labor is coming on,

until the expulsion of the placenta. My result cannot be very exact, as sometimes the women are ignorant of the signs of approaching labor.

Tyler Smith says: "The full dilatation of the os uteri is considered to occupy five or six hours, but in many cases it takes less, and in others more than this." Meigs says: "The average duration of labor has been stated at four hours; I should think it greater. There are many examples of women in labor who are completely delivered in ten minutes from the first perception of the signs of parturition; very numerous cases occur in which labor is protracted during twenty-four hours; while some of the patients are occupied three, four and five days, with continuous efforts to bring the child into the world. I have witnessed one labor of nine days' duration, and many of from three to five days."

In the cases attended by me, the shortest time, from the first signs of parturition until the expulsion of the placenta, was six hours; the longest time was five days. The average was sixteen and a half hours. The number of cases in which I was able to note the duration of the labors was sixteen. Of course in so limited a number of cases, one extending over five days would influence the result much more than in a large number of cases. Excluding that one, therefore, and the result is about ten hours.

The number of cases in which the second stage was noted, is seventeen. The longest time was three days; the shortest fifteen minutes; average, six hours. Excluding the one in which the second stage lasted three days, and we have the time of second stage one hour and a half.

The number of cases in which the time that the placenta remained in utero was noted, was twenty. The longest time was thirty minutes; the shortest, five minutes; average, seventeen minutes. This very nearly accords with most authors. In no instance did I wait for it to be expelled from the vagina, but as soon as I perceived it in that canal, I took it away.

These comprise the results that I was able to get from the cases. They are imperfect, but, as a general thing, quite accurate.

The following cases are not devoid of interest. One is not included in those from which the statistics are deduced, because the woman died in a day or two after I took charge of the ward, and another is excluded because it was a case of abortion.

Case 1.—Ellen S., aged thirty-five, primipara; she has been married two years, but has never before been pregnant; her general health has always been good; she is masculine in appearance. Her first pains commenced early in the morning, but at six, P. M., she was obliged to go to bed on account of their severity.

Six o'clock. On examination, the os was about the size of a dime, parts dilatable, and her pelvis apparently ample. The pains were not frequent.

At half-past eight the os was well dilated, and the membranes protruding somewhat. The child was still above the brim. The uterine contractions were quite strong, and were more frequent and longer.

At half-past nine the os was nearly fully dilated, and the contractions had increased in force and frequency.

At half-past ten the membranes ruptured, and the head could be felt engaging in the pelvis, vertex presentation—first position.

In half an hour more the head had descended, and rotation had taken place; occiput under the symphysis pubis. The pains gradually increased, and in twenty minutes more the caput succedaneum could be felt on a level with external labia. For one hour and a half there was not the least progress, although the uterus was contracting forcibly. Seeing that there was no progress, I asked Dr. Nichols to apply the forceps. He did so, and she was soon relieved. The funis was coiled around the child's neck. The head was much elongated and very large. The child was an unusually large one, weighing ten and a half pounds. It was a girl, and the largest child born during the three months. The cord was thirty-nine inches in length.

The child died in a few days, of trismus, after an illness of only twelve hours. The mother did well, and was discharged on the eleventh day.

Case 2.—Ann O., Irish, aged 33. She has had three children. She was brought into the ward while I was there. She said she was nine months "gone." I examined her, and found the os uteri protruding from the vulva. I immediately returned it without much difficulty. In a few hours I was called to her. The child was then fully in the cavity of the pelvis; membranes ruptured; the breech presented. In three quarters of an hour the child was born. It was partly asphyxiated, but soon recovered after using the cold and

warm baths, and "Marshall Hall's Method." The child was of medium size. I kept her strictly confined to bed for eleven days. She then insisted on going out, and I discharged her. There was then no evidence of prolapsus of the uterus. The case is certainly an unusual one, as I see no mention in any of the works on the subject of a prolapse of a pregnant uterus at full term. She had never before had displacement of the uterus.

CASE 3.—Amy K., aged 22, primipara. She has already been in the ward twice, expecting her confinement, and there are good reasons for supposing that she tried to produce abortion.

Twenty-four hours after her admission I examined her, and found the os but little dilated. From the odor, I came to the conclusion that the fœtus had been dead for some days. The uterus was then acting with force and frequency. She continued in labor two days longer before the os was fully dilated. She did not show any symptoms of depression. At this time, the liquor amnii had not been discharged. I ruptured the membranes, and in three hours more the child was born, and was in a horrible condition. Putrefaction was far advanced. I allowed the placenta to remain one hour, and then took it from the uterus. It was quite small. The next morning I ordered a weak solution of chlorinated water to be injected into the vagina, on account of the fetor.

In twenty-four hours after the child was born the lochia ceased, and never returned.

Besides opiates, the treatment consisted of little but stimulants and nourishing diet.

In reply to all questions as to her condition, she invariably replied, "first rate;" and at no time complained of any pain, even on pressure over any portion of the abdomen. She continued getting weaker and weaker for four days, when she died.

Autopsy.—Upon opening the abdomen a few hours after death, the omentum appeared natural. The uterus was about the size of a large fist. On attempting to raise the omentum, I found it adherent to the intestines; more adherent near the uterus than at a distance from it. I did not examine the intestines thoroughly, a portion near the uterus had sloughed. There were no signs of general peritonitis.

The uterus was in a terrible state. It was almost a complete slough, and of hardly consistence enough to hold together. The vagina had also partially sloughed. The interior of both uterus and

vagina was greenish black. In the ovaries, also, were there evidences of inflammation and ulceration. In one of the ovaries were traces of a corpus luteum. No other parts were examined.

A remarkable feature about this case is, that such changes should have taken place and occasioned no pain. During a great portion of the time, she was fully sensible of objects and persons about her, and answered coherently when spoken to.

Case 4.—*Abortion from Dysentery.*—Bridget M., aged 24, has borne one child. Her health has always been good before the present illness.

She said she was four months pregnant. She had had dysentery two weeks before she came to the hospital, but was not then much reduced. She had taken so much opium as to produce stranguary, and I was obliged to draw off her water the first day.

Her symptoms, on admission, were the following: She had an anxious look and was quite despondent. Her tongue was a little brown, but not dry. There was no febrile movement, but her pulse was rather feeble. She was called to stool very frequently, but after much tenesmus she passed nothing but a little muco-purulent fluid slightly tinged with blood. She had had no free evacuation from her bowels for some days. I first ordered her castor oil; this brought away some scybala, and afforded her temporary relief. But it was only temporary; she gradually got worse notwithstanding all that was done. She became very much emaciated; her tongue became much coated and dry; pulse very feeble and frequent, and her appetite failed her entirely. The frequent calls to stool continued. She complained of great pain on pressure over the uterus. The uterus now began to contract, and it now became evident that her only hope of safety was in emptying the uterus. I first tried ergot. This increased the contractions of the uterus, but did not expel the ovum. The delay but served to increase her debility. The next step was to rupture the membranes. A small amount of liquor amnii followed. The ergot was continued every twenty minutes until five or six doses were taken.

The uterus continued to contract slightly for three days, and the os gradually dilated. During this time, opiates and opiate enemata were given at night to procure rest, and to relieve the violent tenesmus which still continued. On the fourth day, a blister, 4 x 4, was applied over the uterus. The contractions increased, and the desire

to go to stool became less. At 8, P. M., I was sent for. Pulse 145. The os was low down in the vagina. The pains now became very severe ; she thought they would kill her. The child was born at fifteen minutes before nine ; the placenta immediately came away. It was a breech presentation. No hæmorrhage followed. The fœtus weighed just one and a half pounds ; the placenta half a pound, and the cord was seventeen inches long.

I gave her twenty minims of Battley's Sedative, and left her.

The next day she was doing well, though in a very feeble condition. I ordered her some flaxseed tea, slightly acidulated, and some wine and water. The desire to go to stool was much less.

From this time, she continued to improve, though the tenesmus continued for some days. The treatment was stimulant and nourishing diet, and opiates to procure rest and relieve tenesmus. On the tenth day after delivery, she was discharged at her own request ; she was by no means well then. I have seen her since, however, and no traces of her terrible attack are visible.

Every one who saw her before the ovum was expelled, pronounced her case hopeless ; yet, in spite of all, she made a perfect recovery.

ART. VII.—*Contributions to the Pathological Anatomy and Natural History of Yellow Fever :* By BENNET DOWLER, M. D.

NUMBER TWO.

IX.

J. C., born in Ireland, aged 26, laborer, occasionally resident in New Orleans for five years ; never before the present has had any serious illness in America ; August 5th, arrived from Louisville ; on Sunday, the 7th instant, had pains in his legs, particularly in the knees ; pains in the forehead ; has had neither chills nor backache ; walked about as usual ; next day he had but little appetite, but worked on the levee for two hours, when the pains in the knees and forehead increasing, he quit work. In the afternoon and night he felt feverish. On Tuesday, without medical advice, he took a dose of senna and salts, which produced free evacuations. During the evening he

took an antimonial emetic which vomited him much; the vomiting continued up to the time of my first visit on Wednesday, at 9, A. M.

Constitution apparently good; is stout, and has fine muscular development; suffers but little; senses normal; superior half of the body, especially the face, flushed, the color receding on pressure; minute injection of the conjunctivæ; eyelids tumid; no thirst; tongue moist, thick, red at the tip and on the sides, and coated on its dorsum with yellow fur; abdomen supple; skin moist; no yellowness; pulse 100, soft; respiration easy, being a little accelerated; a few hours before my visit, had a bleeding from the nose. The chief subjective symptom complained of is pain in the forehead.

He was bled about six ounces, in a sitting position, which was followed by fainting, and the vomiting of a clot of blood and a greenish liquid. A fading of the redness of the skin, a sweating and a recession of the frontal pain succeeded. The blood taken from the arm was red like arterial blood; it coagulated normally, but in half an hour presented no serosity.

Cold cloths to the head; sinapism to the abdomen.

Noon. The patient says he is better; the pulse is slower; sweats; vomits yellow water, and mucus, with some blood. Foot-baths; three pills, each containing one grain of calomel, blue mass, quinine and ipecac, were directed in three doses, but being vomited, were discontinued in the evening as was all internal medication, with an exception mentioned below.

7, P. M. Two serous defecations; vomiting; faced flushed again; skin dry and warm; temporal arteries distended, and throbbing; pain in the hips; pulse, tongue, and respiration the same as mentioned above. Sinapisms to the extremities, poultices, drinks, etc.

August 11. The patient insists that "a part of his bowels is stopped up;" took calomel, which he vomited. In the evening he had black vomitings; small clots of blood in the stools; thirsty; debility; tongue cleaning off; conjunctival injection increased; abdomen free from tension and tenderness: pulse and breathing accelerated.

August 12. Complains of "a lump in his throat;" restless; sleepless; swallows with great difficulty, owing, as he says, to "the lump" mentioned; vomits much; skin and tongue natural; coffee-colored stools; increased vascularity and injection in the right eye; pulse soft, and quick; respiration irregular, sighing, and attended

with a smothering sensation. Senses normal. [Recommended to go to the Hospital.] He got out of bed and attempted to walk to a carriage which was to convey him to the Hospital. He remarked that he could not see, and immediately fell down with a convulsion, followed by delirium, which was of short duration.

August 13. [In the Hospital.] Occasionally incoherent, but generally answers a question rationally; says he has no pain, but always complains of "a lump in his throat," which renders it difficult for him to swallow; black vomitings at intervals; breathing hurried; pulse small and quick; skin moist and without yellowness, but dotted with mosquito petechiæ; injection of the eyes and flushing of the face, etc., diminishing; tongue natural; is confident that he will recover. Room, 89°; hand, 89°; axilla, 97½°.

During the night, noisy and outrageous delirium; he was tied down in bed; vomited black, bloody and mucous matter.

August 14, 11, A. M., died.

One hour after death: The limbs, upon percussion, contracted for two hours, at first completely flexing the forearms for about one hour; after which the contractility failed to move the arms, having subsided to mere swelling or nisus of the muscles.

Mouth wide open; pupils slightly contractile; eyes yellow, lids elastic; the skin generally of a pale lemon hue; purplish on the sides of the neck; by a series of pressures on the sternum, a mechanical respiration was established, attended with a noise like groans; buttock free from flattening; external veins collapsed; parts of the skin cool; the lumbar region, axillæ, groins, and abdomen, warm; bloody mucosity in the mouth; abdomen depressed; on turning him on his face, about a pint of black vomit was discharged; also black fæces per anum. In three hours after, a great quantity of fæces were expelled with force.

The body becomes warmer. His calorification and refrigeration were noted from a quarter after twelve o'clock, M., to three, P. M., four hours after death; Réaumur's thermometer being used; room, 25° R.—88½° F.; free ventilation. The body naked.

12h. 15 minutes. Axilla, 31½° R.—103° F.

12 25m. Perineum and groin, 31¾°R.—103½° F.

12 35m. Rectum, 33¾° R.—108 F.

12 45m. Axilla, after free exposure to the air, 30½° R.—101° F.

2, P. M. Mouth, 29° R.—97½° F.

3, P. M. Rectum, 31° R.—102° F.

Dissection six hours after death: Body extremely rigid; arms could not be extended without cutting the tendons and muscles; the latter were very hard and drawn up in knotty masses where they had been struck; muscles and fat healthy; no gaseous abdominal distension; blood fluid in the arms; subclavians and jugulars discharged about four pints, in strong current, in thirty minutes, while dissecting out the tongue, gullet, and trachea; muscles of the chest flexible; no emaciation; body finely proportioned and muscular; face retained its uniform purplish black color received when turned over a few hours before; corneæ became relaxed and lustreless in three hours.

Mouth and Neck.—Tongue natural, except red tumefaction of the papillæ at its base; posterior fauces, glottis, and the surrounding parts of a deep pink red; the trachea natural; the upper third of the gullet had longitudinal aphthous ulcerations of its epithelium; the residue of this tube was somewhat thickened, its mucous membrane firm, striped with red, black and white, which increased in intensity to its lower orifice, with increased vascularity; some portions were infiltrated with gelatinous charcoal-colored matter, occupying the mucous and sub-mucous tissues, and discoloring the muscular coat; these colors and exudations, etc., were not removable in the least by washing, pressure, or the fall of a powerful stream from the faucet of a hydrant, being completely imbedded from a line to two lines deep, making the whole circumference of the tube at its debouchment into the stomach black, and also lessening its calibre. This infiltration appeared in irregular patches in several places, resembling the matter of black vomit, being in minute division and mixed with lymphy exudates.

Head.—Cerebral serosity, about two ounces; meningeal vascularity, turgescence; central cerebral injection; slight meningeal increase of tenacity; brain of natural consistence.

Chest.—Lungs, pale, crepitant, bloodless; the heart and its vessels, cavas, etc., nearly empty. The organs natural. Their apparently bloodless condition is attributed to the previous opening of the great vessels of the neck, the jugulars, and also subclavians, in the post-mortem bloodletting in the early stage of the dissection, as above mentioned.

Abdomen.—Stomach contained about six ounces of black vomit, intensely colored, partly thin, with thick masses combined with

mucus, much of which adhered to the surface of the stomach, being scarcely removable by a strong stream of water; the stomach of good size, supposed to be of double weight, its mucous tissue extremely rugous, greatly tumefied, and coated over with a thick mucous exudation, as already mentioned; when this was removed, the membrane was found dotted with minute red points on a faint peach blossom-colored ground, fading at the pyloris into a dull white, accompanied with a brittle softening of the tissue; the pyloric third of the duodenum resembled the stomach, having a peach blossom color, with red dottings without tumefaction. The jejunum loaded with thick black vomit; the ileum contained black vomit tinged with blood, nearly desiccated; the mucous and sub-mucous tissue changed in many places into oval patches of a dark flesh color, shorter than the thumb, though nearly as wide, having pustules thickly set with raised edges, being sometimes excavated in the centre; these elliptical plates, isolated and distant in the upper portion, increased in number and proximity towards the ileo-cæcal valve; the calibre of the ascending colon contracted; the solitary glands of the cæcum and colon hypertrophied; the rectum, nearly empty, contained some pasty black vomit matter like that which was expelled *per anum* several hours after death. The intestines contained but little gas. The liver pale, uniformly yellowish, its central parenchyma diminished in cohesion, being brittle; its investing membrane little adherent, readily peeled in sheets as large as the hand; the gall-bladder, about the size of the little finger, enclosed a spoonful of green bile; the urinary bladder much distended with urine apparently normal. Other organs natural.

X.

C. F., æt. 21; a baker; from St. Louis; resident and sick six days when admitted into the hospital, where, two days afterwards, he died of yellow fever. During these two days no active treatment was adopted, as his physician deemed his case a hopeless one. The last stage, characterized by delirium, laborious respiration, etc., was unattended by vomiting.

Autopsy six hours after death. [The notes descriptive of the appearances of the external tissues of this cadaver have been accidentally destroyed.]

Head.—General injection and vascularity of the substance and

pia mater of the brain; adhesions of the arachnoid of the dura mater to the cerebral arachnoid. The latter increased in tenacity.

Mouth.—Fauces, pharynx, salivary glands, dark red; tongue natural; œsophagus injected and vascular, especially its lower portion.

Chest.—Tracheal membrane red; each pleural cavity contained half a pint of fluid blood; both lungs congested and much increased in weight; the right extensively adherent; both sides of the heart contained blood, which appeared to have colored the serous tissue; the sub-serous tissue of the exterior of the heart was dotted over with bloody points, not like petechiæ, but small coagula or ecchymoses.

Abdomen.—Omenta and mesentery enormously loaded with fat; mesenteric glands reddened; urinary bladder excessively distended and somewhat injected; kidneys and pancreas normal; spleen enlarged one-third, its cohesion being a little diminished; liver small, rather bloodless and brittle, of a mustard color, mixed with brown points; gall-bladder collapsed, contained a little bile, ropy and dark green, becoming yellow on diluting it. Stomach empty and contracted, being smaller than the first six inches of the large intestine next the valve or even next the rectum; the mucous tissue of its cardiac end softened, its pyloric half rugous, pale, healthy, being smeared over with streaks of black vomit matter, which abounded in the duodenum and jejunum; the latter contained in its upper third a chylous paste, the ileum thin, flaccid, non-resilent, wilted (one might say), and empty, had many elliptical pustulations as long as the finger down to half an inch, being bloodless, semi-transparent, except many opaque, dark points, the whole peeling readily and leaving an apparently non-vascular denudation.

This lesion, supposed to be characteristic of typhoid, is not uncommon in fevers, and is very unlike acute hyperæmia. It often completely changes the appearance of the mucous tissue, leveling it, removing its villosities and rugosties, obliterating the valvules conniventes where it traverses them. It is difficult to fix on any standard or object of comparison. It sometimes consists of a series of small patches of semi-transparent, non-vascular cells, rather than a pustular eruption or ulceration.

The blood in this case, at the time of the dissection, was dark,

thick, and not coagulable. The large veins of the centre were much distended.

It was noticed, especially in dissecting the duodenum, which bled freely, that this organ soon became red, resembling inflammation—a change of color which is often observed in clear, cool weather, when the organs are fully exposed to the air. Here the tissues and the blood seem to part with their gaseous carbon in exchange for oxygen—the latter being absorbed by membranes, etc., but most of all upon laying open the parenchyma and cavities of the organs.

XI.

A. K., born in Germany, æt. 23; resident three months; last from Havre. During the last two days of his illness, his case presented the phenomena, of which the following is a mere synopsis:

Senses.—Foolish or semi-sensible expression of countenance; at times quite sensible; calls for water repeatedly, but the very instant after drinking, calls again; does not pick the bed clothes, but takes much pains to adjust them and his clothes; sometimes weeps like a child, but almost noiselessly; turns from side to side, and lies naturally; occasionally is very restless; moans, and has a general agitation of the muscles; a trembling or vibratory movement seen in wavy lines of the integuments, yet not moving the limbs as in subsultus tendinum. While making this examination he threw up, for the first time, about a pint of ink like black vomit. The skin moist, cool, and of faint, dusky lemon hue; no petechiæ; no abdominal distention; eyes injected and yellow; tongue perfectly clean, smooth and moist, but cherry red and a little tumid; respiration 25, quiet, but occasionally gasping, and uneasy for a short time; pulse 72, soft, regular, moderately full; the external veins free from collapse; is able to rise, to sit up and use mustard foot-baths; had a little tranquil sleep. Two hours after, furious delirium set in; intelligence totally suppressed; muscles agitated and convulsed; pulse small and quick; respiration hurried; is tied down in bed.

For three hours the violence of the delirium and the muscular agitation and struggles increased; in the meanwhile, patient's strength had become preternatural, and death speedily followed, after an illness of about twelve days.

The treatment, during the last four days in this case, consisted of footbaths, sinapisms, poultices, enemata, also camphor, and carbonate of ammonia internally.

Dissection seven hours after death. Rigidity prevailed generally except in the neck, where post-mortem flexibility had apparently begun, and where, alone, external post-mortem gravitation of the blood was strongly marked, as on turning the face from side to side, a dark blue discoloration of the dependent parts took place in a few minutes; no petechiæ; skin yellow throughout; body of medium size; no abdominal convexity, except above the pubis from the bladder; the cellular tissue was infiltrated with a yellow gelatiniod serosity about and above the groins; the lymphatic glands enlarged and red, having the contiguous tissues injected; the adipose tissue and eyes a little yellow; muscles natural; non-contractile; dried stripes of inky black vomit, radiating from the mouth and nostrils over the face and neck.

Head.—Dark fluid blood escaped from the skin; extra-ventricular serosity about one ounce; intra-ventricular about as much; brain natural in consistence, but its arachnoid and pia mater increased in tenacity, pulling from the anfractuosities; a band of three inches, however, ruptured speedily without suspending or raising the brain. The venous sinuses and every part of the brain and its pia mater envelope as well in elevated as dependent parts, vascular, distended with fluid blood, chiefly venous; a portion of the spinal cord, which was examined, was natural in consistence; vascularity of its envelope.

Chest.—Left lung universally adherent from an apparently extinct hyperæmia; right lung highly congested, increased in weight from fluid blood; tracheal and bronchial membranes congested. The heart remarkably large, especially the left ventricle, which is inclined to flabbiness, being loaded with fat; the venous side of the heart distended with blood, and large, yellow, elastic, tubular polypoid vegetations; coronory veins distended, and their branches much injected; liquor percardii about two ounces. Blood fluid.

Abdomen.—Œsophagus greatly injected, longitudinal stripes being denuded of its epithelium; the injection from its cardiac end passed into the stomach. The stomach was large; its mucous tissue rather soft; contained about six ounces of liquid black like ink, and as thick as molasses, without ropiness; the mucous membrane was,

in many places, diminished in cohesion; the jejunum contained some three or four ounces of the same black liquid found in the stomach, alternating with healthy chylous matter; the lower third of the ileum contained numerous chancre-like ulcers, with raised, indurated, nibbled margins, having centrally an excavated appearance, with softening or brittleness, filled with mucous or chylous matter, the latter abounding in many parts of this bowel. These ulcers were circular, and about one inch in circumference; no elliptical patches or pustulations were found; from the cæcum to the transverse colon, a large quantity of decomposed, fœted blood, of a pasty consistence and of a mahogany color, was met with, which had probably exuded from the mucous membrane of the large intestine itself as this membrane was also of a mahogany hue, and was softened, especially near the cæcal valve. There was an acute angle formed by a doubling of the colon, the serous surfaces of which adhered for three inches; the residue of the colon, including a part of the rectum, was pale, and presented a series of contractions and dilatations; the former being empty, the latter distended by hard, irregular-shaped masses of natural but rather pale fæces.

Exteriorly, and especially in their mesenteric relations, the intestines were highly injected, the vascularity being chiefly venous; many of the mesenteric as well as the lymphatic glands were much enlarged and hardened, presenting a red zone of injection, diminishing towards their centres. The mesentery, omenta, the sub-serous tissues, and the entire tract of the lymphatic glands presented much confused injection, with lymphy, yellowish infiltrations; on both sides of the spine, radiating from the gall-bladder, pancreas and kidneys their beds, and annexes the same appearances were strongly marked; the bladder extended about one-third of the distance from the pubis to the diaphragm, and was everywhere internally and externally injected, being distended with healthy urine, nearly to bursting. The kidneys, enlarged about one-third, were internally and externally injected, the vascularity being strongly marked; the large vessels contained much fluid blood. The spleen, double sized, flattened out with the edges, supple, reddish, almost muscular in hue, a little softened in the centre; the liver enlarged, heavy, supple, having a few pale, yellowish and whitish discolorations externally; its parenchyma reddened or purplish, everywhere saturated with thin blood, which flowed freely; gall-bladder collapsed, white,

empty, except a trace of pasty matter like thick starch, or chyle, and mucus, its mucous tissue injected strongly ; not a trace of bile.

This case, so far as known, can scarcely be viewed as having been much modified by treatment. The chancrous-looking ulcerations are not common in yellow fever. The chief lesions found were not suspected during the progress of the disease.

The black vomit matter was of an extremely deep color, but had no tinge of blood ; the blood in the cæcum and colon had no tinge of black vomit : considerable portions of the small intestine contained a whitish paste without any blood or black vomit : no part, not even the ulcers were of that purplish red hue, which characterized the blood in the cæcum and colon ; nor was there any discoloration of the mucous tissue of the rectum nor of the fæcal masses ; these latter were polished, indurated, rounded or flattened, or angular, corresponding with the size, shape, pouches, and irregular contractions; neither blood of the bowels; nor black vomit could reasonably be supposed to pass the rectum without coloring them. Hence, it is probable that these fæces existed in the bowels at the time of the attack, or at least some time before death. Hence, it is probable that the cathartic enemata of colocynth, etc., directed by the physician about fifty hours before death, did not empty the bowels. The large fæcal accumulations already described, had doubtlessly existed for some days—a hint of great importance with respect to enemata, as they may pass in and out over these masses, without removing them, or exciting the peristaltic action of thirty or forty feet of bowels.

Some of the cardiac polypi found in this autopsy were tubular. One of these, as large as the carotid artery, formed a hollow cylinder, being semi-transparent, like gum arabic ; it was placed in a solution of common salt for twelve hours, and having been subsequently washed in pure water, was found to be as elastic and tenacious as when first removed from the heart and its vessels. Its walls, composed of concentric membraniform layers, peeled off, circularly, like bark ; but these coats were also readily divided longitudinally into small parallel threads or fibres, which appeared under the microscope like muscular fasciuli, having, apparently, traces of capillary vascularity.

XII.

Sept. 3, 11, A. M., air 91°, fell, by 3, P. M., to 80°, during the following dissection, a heavy shower having fallen in the meantime :

J. B., born in New Hampshire, aged 22 ; steamboatman ; admitted into the hospital, August 31st, sick two days ; resident two years.

For two days before death he progressively sank into stupor, answered with difficulty ; threw up no black vomit ; and died on the fifth day of his illness. He was treated with effervescing draughts, and with a blister to the abdomen.

Dissection and experiments began three hours after death.

Axilla, 5m., 102° ; 10m., 102½° ; 5m., 102¾° ; stationary. Rectum, 5m., 106° ; 5m., 106½° ; 5m., 106¼°. Epigastrium, 5m., 105½°, stationary. Left chest, 5m., 103°. Axilla, 106¼° ; 5m., same. Left hypochondrium, at four hours after death, for 15m., 104¾° ; pelvic centre (all the cavities being opened), 5m., 105¼° ; under the stomach, near the spine, 104° ; under the liver, 106° ; pericardial sack, 103° ; right ventricle, 5m., 104° ; left, 5m., 104¾° ; centre of the liver, 105½° ; 25m., 106°.

The body large, muscular, and six feet high. Neck and jaws rigid, other parts flexible ; the limbs became stiff during the dissection ; at first the arms were slightly contractile on percussion, which caused the hand to turn a little prone, without producing flexion ; positional (gravitative) injection strongly marked in the head and neck, but moderately along the back ; abdomen concave ; the site of the cantharidian vesication free from redness ; skin of a bronzed yellow ; the skin of the penis and scrotum of a dark livid hue ; the muscles natural ; adipose tissue and eyes yellow ; moderate distension of the veins of the arms.

Head.—The head was elevated three or four inches on a block ; the scalp and membranes of the brain discharged in one hour about ten ounces, at first of darkish venous, and then five of bright arterial blood, with an apparently uniform flow, not from gravity, nor from any pressure or artificial contraction of the heart and large arteries ; for after these were cut and the heart removed, the blood flowed for a time as usual ; the blood appeared natural, and coagulated well. The pia mater excessively vascular ; the arachnoidal sack contained from five to six ounces of bloody serosity, the ventricles, a moderate portion of serosity. The choroid plexuses congested with dark blood ; the brain natural in color and cohesion.

Chest.—The trachea and all the organs of the chest natural, except the left lung which was extensively adherent to the costal pleura, owing, it may be supposed, to an extinct or rather a recent pleurisy ;

for, although the adhesion was firm, it was somewhat reddish from injection; the heart had suffered probably at the same time, as there was a white, thick, elevated plate of serous tissue, an inch long, and half as wide upon its exterior surface; a few soft coagula were found in both sides of this organ.

Abdomen.—The tongue, fauces, œsophagus, kidneys, pancreas, bladder, and ganglionic nerves were natural; the omenta roseate, and highly injected; the mesenteric glands moderately enlarged. The spleen enlarged about three times, brittle, soft, and loaded with dark blood. The liver enlarged, perhaps one third, slightly brittle, rather cork-colored; the calibre of its blood-vessels of great size. The gall-bladder, which contained a small quantity of mucosity, was much thickened—was white externally. The sub-serous tissue of the liver, for several inches around the gall-bladder, was white, and infiltrated with an apparently albuminous matter, having a faint tinge of yellow. The stomach, which contained about a pint of intensely colored black vomit, was a little softened in its mucous tissue in the cardiac portion; half a pint of this liquid was found in other portions of the bowels, chiefly in the duodenum and jejunum; the intestines, which measured thirty-five feet in length—counting from the pharynx, contained three intussusceptions, the first, the longest and most tumefied, was in the jejunum, five inches of which had descended; the other two were in the ileum; much of the small intestine, particularly the ileum, was *wilted, non-elastic*, black, and attenuated; the mucous and sub-mucous tissues of the duodenum were vascular in a high degree, and even infiltrated with blood, as were some other portions of the tube, particularly in the ileum, giving the appearance of injected blood-vessels; the blood could not be washed away; much of the epithelium of the mucous membrane had disappeared, the vascular capillary vessels lying bare; most of the large intestine was contracted into a round cord excepting the cæcum and the ascending colon, the mucous tissue of which was red, and infiltrated with bloody dottings and ecchymoses. A little chylous paste was found in the middle portion of the intestinal canal; a little gas in the uncontracted part of the large intestine, but nothing like fæces.

XIII.

L. B., Born in France; aged 21; resident in New Orleans one month; died on the 28th of October. Malady, six days' duration.

Dissection, about one hour after death: The body warm, of medium size; muscular, without emaciation; eyes, skin, and fat, *yellow.*

Head.—Opacity and increased firmness of the arachnoid; vascularity and turgescence of the pia mater.

Chest.—On opening the subclavian vein with the lancet, the blood shot up several inches above the average height of the chest, forming an arch at first; in half an hour the orifice discharged from three to four pounds of healthy looking blood, clotting as usual. The organs of the chest natural.

Abdomen.—Stomach, *contracted;* its contents being a gray and sanguineous fluid, not exceeding three ounces; its mucous coat dotted, in several places with red points. Liver small, friable, pale brown; its coats peeling; gall-bladder, thickened bile, *ropy*, and like molasses; cohesion of the spleen, diminished. Several large, living worms (lumbricoides), some full of young ones, were found in the stomach and bowels. The intestines were generally collapsed—in some places contracted firmly, being empty, except a little gray paste. Other organs, natural.

XIV.

J. S., born in Maryland, aged 36, segar maker, last from Vera Cruz, resident four weeks, admitted September 5th, for yellow fever, attended with diarrhœa; he walked about, ascended to the third story of the hospital twice—went down to the ground floor for medicine. His strength was good and his senses natural until late in the night, when he became delirious. He died, after several convulsions, at half-past eight, A. M., next morning, without having thrown up black vomit.

Dissection four hours after death: Arms rigid, neck flexible; eyes, skin, and fat, yellow; abdomen, concave; positional hyperæmia; nearly black about the face and neck; stout; little emaciated; muscles healthy; body hot.

Head.—Serosity in the arachnoidian sack, about six ounces; subarachnoid vascularity.

Chest.—Natural.

Abdomen.—Stomach contracted to the size of the wrist; very firm; salient, longitudinal rugositie; or ridges of the mucous tissue, the latter indurated, tough, and infiltrated with blood; the cavity

contained about an ounce of intensely-colored black vomit, a little more was found in the small intestine, the lower half of which was shrivelled and nearly black ; much of the epithelium of the mucous tissue had disappeared, leaving continuous beds of injected vessels exposed, coated over with a bloody paste ; the large intestine empty and contracted ; the cæcum and ascending colon contained bloody, pasty exudations ; the mucous tissue being of a dark mahogany red ; the bowels and omentum were, to a great extent, packed in the pelvis ; liver pale, of good consistence ; gall-bladder collapsed, contained a little dark-green bile ; spleen, about double size, engorged ; bladder empty, contracted to a knot smaller than a hen's egg ; omenta and mesentery and mesenteric glands injected.

XV.

F. S., born in Germany, aged 22 ; last from Bremen, resident in New Orleans nine months ; died on the fifth day from yellow fever.

Dissection, eight hours after death.

Body, of medium size, abounding with adipose tissue, which, like the skin and eyes, was yellow, the trunk warm; the limbs, flexible ; the muscles, natural.

Head (opened last).—Arachnoid, moderately increased in tenacity. The entire venous system of the pia mater, ventricles, etc., distended except a few of the larger trunks and the sinuses, which, though apparently enlarged, were collapsed and nearly empty. Bloody oozings from incisions of the brain.

Chest.—Natural.

Abdomen.—Stomach : its serous coat, natural ; the mucous coat had several irregular red patches, having rough, whitish crusts or scabs, firmer than cheese ; the sub-mucous tissue, under these, was red, and brittle, but free from surrounding arborizations and redness. Bowels, unchanged ; liver of a chocolate color, nearly bloodless in its parenchyma, which was brittle in the centre, its coats apparently diminished in adhesion ; the gall-bladder contained a tenacious, viscous, green substance. The uterus, about the size of a common pear, was somewhat red, contained an ovum, about half an ounce in weight ; the embryo, a quarter of an inch long, thick at one end, where a mouth or orifice was visible, tapering to the other extremity, which was doubled up on itself, worm-like. The placenta was dis-

tinct, and as large as an almond. The uterine appendages were congested. Other organs natural.

XVI.

J. M., born in New York, aged 23, musical instrument maker, of medium size, of good muscular and adipose developments; nervo-sanguineous temperament; intelligent and communicative; perceptive and reasoning faculties unaffected; manner, animated; his conversation perspicuous, and circumstantial. From the city of Buffalo, by the way of the Ohio River and St. Louis, he came to New Orleans, upon the first day of October, in good health, though somewhat depressed in spirits, in consequence of having been robbed on the passage. On approaching the South, he had relaxation of the bowels, though not amounting to disease. Without any exposure or fatigue, he found himself unable to sleep as usual, on the night of the 4th of October; had pain over the eyes, weakness of the limbs, but no chills or well marked fever. October 5th, took a dose of salts, which carried off much black matter; slept well during the night. October 6th, took no medicines; bowels costive; slept well; sweated freely. October 7th, not so well; at nine o'clock, A. M., had a foot-bath and was cupped on the abdomen. One o'clock, P. M.: general warmth of the skin; forehead, pungently hot; dull, red flushing of the face, neck and chest, receding, as in erysipelas, by pressure; no marked heat upon the trunk or extremities; respiration, unequal, imperfect, with sighing; a forced inspiration causes a cough, but no pain; percussion gives a rather dull sound, for an unusual distance about the heart; pulse, nearly natural in frequency, but diminished in calibre; elevating the eyelids, as in looking up, causes pain above the eyes, and within the orbits; light causes no uneasiness; pupils natural; minute vermillion-colored injection of the conjunctivæ; an uneasy, dizzy feeling, on raising the head; tongue, moist, and slightly coated with yellow fur in the middle, and with a white fur on the margins; no thirst, or vomiting; no pain in the bowels; tenderness upon pressure over the liver; no abdominal tension; uneasy feeling in the loins; urinates; can produce pains in the limbs by motion, as in extension; keeps the legs semi-flexed constantly; limbs somewhat tense and tumid; suffers no fixed pain except from a burn the size of half a dollar, caused accidentally in cupping. At subsequent examinations

(October 11 and 12), his condition appeared little changed ; countenance dejected, but he appears confident of his recovery ; auscultation discovers nothing ; respiration quick ; forced inspiration gives cough, and slight pain in the region of the liver ; lies on his back, with his legs drawn up ; skin hot and flushed, and faintly yellow ; pulse 100, regular ; eyes red, pupils natural ; tonge red, tumid, smooth, clean, and somewhat dry ; thirst ; no vomiting ; no abdominal tenderness on pressure ; hæmorrhages from the corner of the mouth, and from the posterior fauces ; urinates ; made prolonged but ineffectual efforts to defecate ; strength good ; was as sensible as others to the annoyance of flies and mosquitoes ; spoke hopefully of getting employment in his line of business but half an hour before death.

From the 8th to the 12th of October : cupping ; foot-baths ; calomel, 12 grains ; enemata of quinine, camphor and laudanum, repeatedly.

Oct. 12 ; at half-past eleven o'clock, A. M., after an effort to vomit, for the first time, he expired tranquilly, without a struggle, and without any derangement of intellect. A moment before death, he complained of coldness of the feet, at the same time expressing an opinion that he would recover.

Dissection, fifteen minutes after death : Features placid ; body warm ; feet cold ; eyes yellow; abdomen slightly convex ; the burn on the abdomen dark red ; muscles red, moderately contractile, and natural in consistence. The cellular and connective tissues, especially in the arms and legs, were extensively infiltrated with dense, semi-solid, semi-organized blood, which, when cut, presented a smooth, glossy surface, without bloody or serous oozings ; this extravasation (which was least in right arm) extended into the deepest recesses and inter-muscular spaces.

Chest, natural. Upon dissecting its viscera and removing them, about three pounds of blood accumulated in the cavity. This blood, natural in appearance, coagulated as other blood.

Abdomen.—The intestines blanched and bloodless, like boiled or prepared tripe ; the stomach, the same in color, contained about one pound of inky black vomit, a portion of which formed a heavy sediment ; all of the coats, with the exception of their anæmic condition, natural ; duodenum pale ; the small intestine contained from two to three pounds of black vomit, but was contracted into a cord towards

the cæcum ; the large intestine much distended, with natural fæces; the cæcum and ascending colon were about eight inches in circumference ; liver engorged, cohesion somewhat diminished ; gall-bladder contained a grass-green tenacious substance, which could be drawn out in strings ; urinary bladder moderately distended and injected. Other organs natural.

In this case the accidental moxa, though a little more severe than the officinal, progressed, as in the healthy body, suppurating, etc.

The black vomit liquid did not present any tinge of blood. The patient, whose intelligence remained intact, appears not to have swallowed any blood. The black vomit effusion probably took place shortly before death, previously to which digestion and fæcation had filled the large intestine with fæces altogether natural. The extensive subcutaneous hæmorrhage, not beginning at a single point, as in a ruptured or cut artery, and thence diffusing itself, must have occurred by capillary exudation, some time before death, as the blood seemed to be organized in the cellular membrane ; on cutting this tissue, which was saturated like a sponge soaked in blood, no bleeding took place, though the body was warm, and the blood in its proper vessels was quite fluid and natural. For several days before death he always felt pain when he extended or moved the limbs, owing, doubtlessly, to the tension and pressure of the muscles upon the infiltrated tissues, whereby the nerves became compressed or irritated.

XVII.

E. S., widow, aged fifty, born in Switzerland ; resident five years; lingered with chronic yellow fever about five weeks, during the great epidemic of 1853 ; towards the close of life she was at times delirious and vomited and defecated blood. According to her physician's statement, the treatment was palliative and included no active medication.

Dissection, from twelve to fifteen hours after death; body small, of a deep orange color, emaciated, moderately rigid in the limbs; no cadaveric injection ; mosquito-petechiæ in purplish points ; muscles, natural; adipose tissue scanty and yellow ; abdomen concave, and marked with numerous cicatrices of pregnancy.

Head.—Cerebral serosity in the arachnoidal sack and ventricles, about two ounces ; a tumor as large as a pea, in the right ventricle,

in the choroid plexus, consisting of tuberculous matter; brain rather bloodless.

Chest.—About eight ounces of bloody serosity in the chest; lungs and bronchial glands much discolored with melanoid spots, yet healthy.

Abdomen.—The stomach contained about half a pint of black vomit, having a bloody tinge; the mucous membrane of the stomach and bowels but little altered, though in a few places softened, but was from the cardia to the anus, of a deep mahogany color, inclining to black; the bowels contained much liquid, apparently black like ink, though showing a bloody tinge when diluted, or spread out thinly on a white surface; portions of the small and large intestines were collapsed, as it were wilted. The color of the sub-mucous tissue was so intense as to give even the serous coat an apparent blackness, not real. Pancreas somewhat enlarged and indurated. Although the common bile duct was pervious, the bile, which was black and abundant (one to one and a half ounces), could not be forced into the duodenum with the exception of two or three drops (of the thinner part) being thick and granular like half dissolved sugar. The liver, small, rather atrophied, and greenish; the spleen enlarged slightly, very elastic and black; the bladder, pale, attenuated, and greatly distended with urine (twenty ounces by estimation). The uterus elongated vertically in its cervix, also somewhat enlarged in all its diameters, having scirrhous plicæ, with knobby, serrated ridges within, extending into the uterine walls; scirrhous deposits slightly developed in the fundus, at the opening of the fallopian tubes, and also several small scirrhous tumors along the edges of the ovaria. The ovaria had several corpora lutea. The scirrhous disseminated in the uterus was bloodless, white, and firm like cartilage, without any zone of redness around it, being best marked at the cervix and os tinciæ.

The blackness of the intestinal mucous tissue is supposed to be due to two causes, namely, the punctiform hæmorrhagic infiltration of this tissue, whence issued blood and black vomit into the cavity; and, secondly, to a dyeing process from the black liquid lying in contact with this tissue, aided by the exosmosis of the liquid contained in the cavities.

The scirrhous degeneration, which was in its earliest stage, would rarely be recognized as such, except by persons much experienced in

dissecting these alterations of this tissue, as the uterus is naturally firmer, than other internal organs, the pancreas scarcely excepted.

XVIII.

C. D., aged twenty-six, left New Orleans, for Bayou Sara, on the 24th day of August. The next day he was attacked with the fever; on his return to the city, two days afterwards, he was admitted into the hospital, in a quiet delirium, but soon fell into a state of profound stupor which continued until he died, two days after admission, and five days from the commencement of his malady. The treatment consisted in one dose of castor oil, a foot-bath, iced lemonade, and a few pills of hyoscyam. et con. mac., together with cupping.

Dissection about ten minutes after death; all parts of the body warm; free from rigidity; skin, eyes and fat moderately yellow; the body stout and muscular, with considerable fatty tissue. The muscles which were well developed and healthy in color and firmness, possessed strong powers of contraction which continued several hours; when the muscular fibres were scratched with a pointed instrument they contracted in ridges exactly in the line of irritation, so that one might make letters and diagrams upon this tissue with the utmost precision, though the lines of contraction assume a zig-zag form, as each fibre touched contracts for itself. The extended arm when percussed over the biceps muscle contracted slowly, and with a regular motion, raising the forearm to the perpendicular and maintaining it in this position for some seconds, without flexing it completely upon the trunk. When contraction subsided the arm fell back to, or near its original position. These experiments were often repeated with the same general results. The flexion was never complete as it usually is where the contractility is vigorous.

Abdomen.—The anterior wall of this cavity, which was depressed, was quickly removed; the blood vessels of the omentum, mesentery, etc., though healthy, were gently distended; both veins and arteries however small, discharged blood when punctured; in the former the blood was probably circulating more or less. From six to eight pounds of good colored blood, which coagulated firmly, was discharged from the cavas in less than an hour. The cavas were not only distended but enlarged. The stomach was of good size, and contained about a quarter of a pound of black vomit; the

mucous coat wrinkled, and everywhere of a faint claret color, as if slightly dyed, but without any visible arborizations, thickening, or thinning; this coat and the submucous tissue, though, perhaps, a little dry and brittle, peeled well, leaving the muscle and serous coats bloodless, but of natural consistence; the duodenum natural. The small intestine, moderately contracted, contained nothing but a few teaspoonsful of black vomit matter, nearly dry; the large intestine, except the last six inches of the rectum, was contracted into an uniform cord, scarcely allowing the intromission of the scissors. The whole of the coats were strong, but as bloodless and as white as the breast of a boiled chicken, and nearly free from moisture. The mesenteric glands, pancreas, kidneys, bladder, lymphatics, nerves, etc., natural. The spleen, somewwhat enlarged and black, when cut, presented a glossy surface, and proved nearly as tenacious as a lump of muscle. The large vessels of the liver contained much blood—the substance or parenchyma little, being firm, tough, and of a pale straw color; its coats peeled off with ease; the gall-bladder, of small size, contained a fluid like thin molasses.

Chest.—The heart, though large, fat, and vastly distended on the right side, was otherwise unaffected.

Head.—[Opened last.]—The arachnoid and pia mater thickened; the latter excessively vascular; vessels not turgid but collapsed, except the minute arteries; some of the veins running over the superior and lateral portions of the brain, were nearly a quarter of an inch in width, though almost empty. The brain of good consistence; the choroid vessels of the ventricles turgid with blood; serosity within the arachnoidian sack and in the ventricles, about two ounces.

Was not the collapsed condition of the meningeal vessels, owing to the enormous discharges of blood from the cavas previously to opening the brain, which was the last step in the dissection?

XIX.

B. C., born in Germany, aged twenty-eight, resident nine months, was admitted into the hospital, having been sick with intermittent one week. Three days after she expired, and was carried directly to the dissecting table. The body warm, symmetrical, of medium size; free from emaciation; the fatty tissue, one to two inches thick, was firm and yellow; jaws and arms rigid; the residue of the body supple; nipples elongated; lower portion of the abdomen

marked with cicatrized wrinkles. The skin and eyes of an orange hue; mouth and teeth free from sordes natural. Features sad and expressive of agony. Dissection, five minutes after death.

Head.—The envelopes of the brain opaque, milky; pia mater highly vascular; bloody serosity from six to seven ounces.

Chest.—From twelve to fifteen ounces of blood effused into each cavity. The lungs non-crepitant and collapsed; the upper portion or apex of each contained bony concretions or lumps—four or five of which were as large as almond-kernels, though of irregular shapes. The left lung adherent as large as the hand, by red, bloody tissue. On removing the heart the blood flowed rapidly into the chest. In about fifteen minutes from four to five pounds accumulated, which, in due time, formed good clots.

Abdomen.—From the gullet to the rectum the intestinal tube was healthy; the rectum was injected; the large intestine contained claret-colored blood, perhaps a pound; the stomach and small intestines contained from three to four pounds of intensely colored black vomit, which consisted of a thin liquid, and a thick, heavy sedimentary matter, sinking rapidly in water. The mucous membrane of the stomach pale, and free from infiltration, injection, and arborizations; internal and external indications of uterine hæmorrhage; gall-bladder distended with very thick, ropy bile; liver of a pale, dirty yellow, and of a brittle, indurated inconsistence. Other organs natural.

The quantity of blood is given by estimation, but it is not supposed to be exaggerated. The hæmorrhage accumulation in the pleural cavities must have taken place before death, as the dissection took place immediately after. The blood was not clotted. The large intestines was loaded with blood, and from appearances, uterine and vaginal hæmorrhages had taken place

ESTIMATED EFFUSION OF FLUIDS:

Blood effused in the chest	30 ounces.
Blood in the large intestines	16 "
Black vomit	56 "
Serosity of the brain	6 "
Total	108 ounces.

Art. VIII.—*Cæsarean Operation. Its Necessity and Success.*

On the 13th of May, 1860, I was called to see Mrs. Doughlas, who resides in the vicinity of Florence, Alabama. She was in labor when I arrived; she informed me that she had been suffering for nearly a week from pains which she could not distinguish from labor pains. She had borne and been delivered of two children without more than ordinary difficulty. There was a midwife in attendance. I found the pulse quick and active; the breathing hurried, and the skin hot and dry. The countenance anxious and the patient thirsty and restless.

On examination, *per vaginam*, I found the fœtus lying transversely across the pelvis. The head resting in the right, the breech in the left iliac fossa, the side presenting with the fœtal back, corresponding in backward direction with the mother's. The os uteri pretty fully dilated, the liquor amnii having escaped several hours previous. The body and fundus uteri firmly contracted, holding the child immovably fixed in the condition above stated. As there was no malformation of the pelvis, and as I had never, in a respectable country practice of twenty years, met with any insurmountable obstacle in delivery by the ordinary means, resorted to in such cases, I naturally expected to overcome the obstinacy of this case. But in this I was sadly mistaken, notwithstanding all or nearly all obstetrical writers and teachers tell us, that when there is no malformation, delivery by turning is practicable, or by puncturing and evisceration of the cavities, it becomes so. Prompted by my own former success, and the almost universal opinion of the profession, I for many consecutive hours continued to make persevering efforts, in the absence of pain, to alter the position of the fœtus; this I failed to do by any force that I thought it prudent to use. In order to assist my manual efforts, I had administered very decided doses of morphia and tartar emetic.

Although blunted consciousness and nausea were established, the uterus did not seem to respond, as after these effects I found my efforts to alter the fœtal position as unfruitful as before. As the patient now complained of sharp acute pain in the right iliac region, much aggravated by the pains, which were still frequent, notwithstanding the therapeutical agents resorted to, and as there was a pointed tumor perceptible externally at this point, I was apprehensive that a rupture of the uterus might take place.

Knowing, as I did, that this woman was the subject of a chronic pulmonary affection, from which she had already suffered considerable emaciation, and was debilitated, I felt great anxiety as to the result. Under these circumstances, I sent for my friend Dr. James W. Stewart, of Florence, requesting him to bring chloroform and such instruments as we might need in any emergency. Dr. Stewart arrived at four in the morning at the residence of my patient.

After hearing the history of the case, and having made an examination, the Doctor gave it as his opinion that delivery in the ordinary way, by turning, would never be accomplished. Notwithstanding, the patient was immediately put under the full influence of chloroform, when the most persevering efforts were made, both by Dr. Stewart and myself, to change the position of the child, without the slightest effect. We now deliberated upon the relative claims of fœtal dissection and the Cæsarian section, and, finally, determined in favor of the latter, as holding out the best chance of success.

The case was first explained to the husband, with its dangers and chances, and then to the patient. They both consented without hesitation. The patient was again put under the influence of chloroform, and Dr. Stewart proceeded to operate, first carefully avoiding the abdominal parietes, then making an incision through the walls of the uterus.

The external incision was commenced about one inch and a half below the umbilicus, and one inch from the median line, gradually inclining to the center, until, at the lower point of the incision, it had reached within two lines of the center.

The fœtus, placenta, and membranes were now extracted through the wound; the patient was turned upon the right side, and the fluid contents of the uterus carefully pressed out; the edges of the external wound brought nicely in apposition, and retained by sutures half an inch apart, these strengthened by narrow adhesive strips. The patient soon recovered from the anæsthesia.

Some general directions were now given for the government of the patient, a decided dose of sulphate of morphia administered, and we left; agreeing to see the patient next morning, at nine o'clock.

According to appointment we met; the patient complained but little; had rested pretty well under the opiate. The urine was drawn off by the catheter, and the patient left on low diet, without material change from the directions of the day before.

In consequence of the indisposition of Dr. Stewart, he did not again see the patient for a week. On my visiting her the second day, I found that a good deal of constitutional disturbance had set in, such as a hot skin, quick pulse, dry mouth, nausea and vomiting, restlessness, with tenderness in the right hypogastric region, and considerable tympanitis. The catheter was again used, the bladder not having been evacuated since the day before. Castor oil and turpentine were administered by the mouth ; a large blister applied over the abdomen, leaving, of course, the wound exempt. Acid refrigerant drinks prescribed, and morphia were left to be taken as soon as the oil had acted.

The lochial discharge was established on the fourth day, when under the same general treatment above named, opiates, mild aperients, and cooling drinks The symptoms all improved, and the patient rapidly convalesced. By the tenth day, the wound, in its whole course, had healed by the first intention. There was no complaining by the patient now, except slight tenderness in the right hypogastric region, where the pointing tumor was felt during parturition, and where the most suffering had been experienced afterwards. The patient is now well.

James Kyle.

The only point to determine in this case was, which was to be done—operate on the mother or dissect the child ? The want of success in the last, I think, mostly depends upon the too long delay usually allowed to take place before resorting to so grave an operation. I am fully persuaded that if the abdominal section was resorted to more frequently at an early time (I mean, by an early time, when all rational means of delivery had failed), the frequent reports of women dying undelivered would not have to be made, as are now done.

We have cases occasionally so anomalous in character, where nature seems in a cross, sportive mood, as the above, where there was no deformity, and yet the best directed efforts fail ; must we timidly stand confounded and see our patient sink into the arms of death, when a determined action might wrest the devoted victim from the hated grasp ? I have said—I say again—no ! grim monster, not yet, kind science will cheat you of your prey !

I am inclined to the opinion, from my research and little observa-

tion, that whenever the necessity of dissecting as a means of delivery exists, the Cæsarian operation is attended with fewer dangers than fœtal dissection. In the first place, it is much more simple to perform, is much sooner done, and altogether better for the unpractised hand of the country practitioner, than to risk the consequences of bruising and lacerating the soft parts of the mother and the internal surface of the womb, that seem to me likely to take place in dissection.

I am well aware that the faculty generally will be ready to condemn our course in this case, deeming so important an operation unjustifiable under the circumstances. For nearly a quarter of a century, though engaged in a good practice, I never found it necessary to resort to instruments of any kind to effect delivery, nor did I during that time ever lose but one patient undelivered. That one I now think I might have saved by a timely resort to this almost forbidden operation. Let medical men pause and wait for such a case as the above one was, and then, if they succeed, I shall be ready to acknowledge that the risk was too great for the emergency.

JAS. W. STEWART.

ART. IX.—*Foreign Medical Intelligence.* (From the London Correspondent of *The New Orleans Medical and Surgical Journal.*)

THE first of October, with its gathering of students and professors in the Metropolis—its excitement, its introductory lectures at the various schools of medicine, is passed, and both masters and pupils have settled down to the work of a busy winter session—work, pleasant in itself to all who are fitted for the great calling of medicine, for surely there is no profession to which its followers are more intimately wedded than our own. Its variety, the interest attached to every branch of its study, and, above all, its lofty and noble aspirations, all combine to interest alike the titled professor and the young aspirant to professional fame and honors.

The introductory lectures and addresses delivered during the few opening days of October, necessarily pointing very much in the

same direction, vary mainly in the style and manner in which various teachers urge their allwise precepts upon the young student, who, fresh perhaps from some distant part of the country, and unsteeled to the temptations and snares of the metropolis stands in need of the sage advice and friendly exhortations poured forth from behind the lecture tables of their various theaters.

At St. Bartholomew's, the largest of our schools, Mr. Savory delivered, perhaps, the most elaborate and able address which for years has echoed within the walls of that venerable institution. Dr. Wilks, in an excellent lecture at Guy's, indulged in rather a sweeping attack upon special hospitals and their objects. Mr. Grainger, after a long and honorable career as a physiologist and lecturer on anatomy, alike opened the session, and, as a teacher, bid farewell to his pupils in a very able address at St. Thomas's Hospital. At King's College, the late Dr. Todd formed the subject of an address from the lips of Dr. Johnson, one of the physicians to the institution. Dr. Todd, an able author and practitioner, untrammeled by routine, unhampered by the ancient prejudices and dogmas with which our profession struggles, even in its present state of enlightened advancement, is to be lamented by every upholder of progress in scientific medicine. Well did Dr. Johnson choose such a theme to instill in the minds of young men a love of the noblest objects of a noble profession.

Drs. Chowne and Pitman addressed the students respectively at the Charing Cross and St. George's Hospitals; Dr. Power at the Westminster; and at the Middlesex, Mr. Moore, in the absence of Dr. Coote; Dr. Bloxam at the Grosvenor Place School; Dr. Tyler Smith at St. Mary's, and Mr. Barnes, complete, I think, a list of names with which fame is already familiar, or for many of whom time alone is required to make notorious in the world.

The schools promise well—that at St. Bartholomew's numbers in all some two hundred and fifty students, who, when congregated on the Saturday afternoon, in the noble operating theater, form, indeed, a goodly array, and one cannot but wonder where, indeed, is suffering humanity to find victims for this vast phalanx of professional skill to work upon. Guy's is not far behind, and the minor hospitals and schools follow in proportion to their size and the repute in which their various staffs of professors is held.

I have before me two pamphlets, containing the proceedings of

the Royal Society and of the Royal Medical and Chirurgical Society. I propose to make a few extracts from each. Among the papers read before the Royal Society, there is but one which bears upon our profession, namely: an Analysis, by T. Wharton Jones, Professor of Ophthalmic Surgery, in University College, London, of his own sight, "with a view," to use his own words, "to ascertain the focal power of my eyes for horizontal and for vertical rays, and to determine whether they possess a power of adjustment for different distances."

This inquiry into the "*astigmatism*," or incapacity of the eye to collect all rays of light which enter it to one focus, is mooted by the author in the belief that a deficiency in this power, to a greater or less extent, is of common occurrence. He considers that a careful analysis of their own sight by a number of qualified observers, according to the plan adopted in his own case, and described below, would be of real importance, both in a scientific and a practical point of view.

Mr. Jones continues nearly in the following words: "If I view a vertical and a horizontal line, both equally strong and black, I see them with medium distinctness at the distance of about ten inches; at about eight and a half inches I see the vertical line with the best definition my eyes are capable of; but the horizontal line I see indistinctly. At twelve inches I see the horizontal line with the best definition my eyes are capable of; but the vertical line I see indistinctly—and no variation of which my eyes are capable will enable me to alter this condition. Beyond this, at longer distances than twelve inches, both are indistinct, the horizontal, however, always retaining the best definition of the two. At shorter distances than eight and a half inches, both indistinct, but the vertical line always retaining the best definition of the two. Equally oblique lines are with each other equally visible at all distances, ten inches being the distance at which their definition is most perfect."

"The preceding analysis of my sight," continues the author, "shows that my eyes are not *monostigmatic*, that is, are not capable of collecting all the rays of light which enter them at one exact focus. It shows, on the contrary, that my eyes are *distigmatic*, that is, they have each two distinct foci to which they bring the rays, viz: one focus for horizontal rays and one for vertical rays."

There is no evidence in the above, of power to adjust the focus of the eyes to different distances.

Mr. Jones considers that the fact of an eye beholding an object distinctly at two or three feet distance, while another object directly behind it, at a greater distance of ten or twelve feet, for instance, is indistinct, or *vice versâ*, is no proof of a power of adjustment in the eye to the two different distances.

"This experiment must not be confounded with another, adduced by the late Professor Müller as a proof of the existence of an adjusting power in the eye. The experiment I refer to is as follows:"

"If we regard with one eye only (the other being closed), the ends of two pins placed one before the other, at different distances, in the line of axis of the eye, one will be seen distinctly, when the other appears indistinct, and *vice versâ*. Both images lie in the axes of the eye, one over the other; and yet it depends on a voluntary effort, the exertion of which can be felt in the eye, whether the first or the second pin shall be distinctly seen. 'The two images of the pins,' says Müller, 'fall upon the same point of the retina; one lies over the other, and yet I see the nearer through a cloud-like image formed by the rays from the other more distant pin, and *vice versâ*.'"

Mr. Jones doubts this experiment altogether, being himself unable to observe the phenomena described. He allows that in viewing objects at different distances the sight is aided by the movements of eyebrows, eyelids, eyeballs, and pupils; and that the focal power of the eye may become slowly and temporarily altered by the prolonged examination of near and minute objects, but he denies any adjustment properly so called, viz., intrinsic adjustment.

The author finishes his paper with a request, that any one into whose hands it may fall, would repeat the above experiments carefully, and forward to him the result, both as regards the distance at which the horizontal and vertical lines have their most perfect definition, and as to the power of adjustment in the eye, tested by the experiment of Professor Müller. Some of your readers may be interested in the above question, and I doubt not that observations from the other side of the Atlantic would be very acceptable to Mr. Wharton Jones.

Among the transactions of the Medical and Chirurgical Society we find several papers, a passing remark on which may not be unacceptable.

On April 24th, was read a communication from Mr. Syme, of Edinburgh, "On the Treatment of Axillary Aneurism." The object of this paper was to suggest, that in general, if not invariably, the old operation for the treatment of axillary aneurism would be preferable to the method of Hunter. The author already having operated successfully in two cases according to the mode generally adopted, namely, by tying the subclavian artery, may be supposed to have no prejudice against it.

In support of his suggestion, amongst others, he particularly calls attention to the following case of axillary aneurism, which had lately come under treatment in the Royal Infirmary, Edinburgh: "The tumor was very large, and distending the muscles of the axilla, projected above the clavicle. It was rapidly increasing, and already showed signs of impending gangrene; while the patient's general condition, as manifested by a pulse of 130°, and wandering ideas, was no less alarming. Ligature of the subclavian being quite out of the question, before proceeding to amputation at the shoulder joint, it was deemed proper to ascertain the state of matters in the axilla. But as this could not be done without the risk, or rather the certainty, of fatal hæmorrhage, unless the artery could be commanded in the first instance, an incision was made along the posterior edge of the sterno-mastoid, through the platysma myoides, and fascia, so as to allow the finger of an assistant to reach the vessel where it issues from under the edge of the scalenus anticus, and lies upon the first rib. The cavity was then opened, nearly seven pounds of coagulated blood removed, and both ends of the artery tied, as it was found to have been torn across." The patient rapidly and perfectly recovered.

The author relates several other cases—one in which the same procedure was sucessful in arresting hæmorrhage by pressure upon the internal maxillary artery behind the ramus of the jaw, during the removal of the superior maxillary bone; another, where the carotid was the seat of an aneurismal sac, too low in the neck for ligature. He moreover expressed his opinion, that the old method is "worthy of adoption, not merely in cases unsuitable for ligature of the subclavian, but as preferable to the Hunterian method, on account of its greater facility, safety, and certainty."

John Cockburn Messer, M. D., Royal Hospital, Greenwich, communicated a report on the condition of the prostate in old age. Mr.

Messer appears to have enjoyed considerable facilities for the prosecution of his inquiries, by means of his appointment at the Greenwich Hospital, which affords a home for 1600 aged and disabled seamen. He has produced a tabular arrangement of the results of *post-mortem* examination of the prostate glands of one hundred individuals above sixty years of age, from which we glean that 35 per cent. of all prostates after that age are abnormally large, 20 per cent. small, and that 45 per cent. are within the limits of the normal weight, which is estimated between 4 and 6 *drs.* Enlargement of the gland appears to be caused by increase of the fibrous element of the body; the glandular also being increased in amount, but not to the same degree. The new fibrous tissue deposited in concentric layers, often forms circumscribed tumors. This fibrous deposit was found in 34 out of 35 cases of enlargement, and in 27 of them in the form of tumors. It appears from a nearly average age in all cases examined, that the condition of the prostate does not materially affect the longevity of the individual. There are other interesting facts to be gleaned from these statistics, but I think I hava extracted the most important.

"Glaucoma, and its surgical treatment by Iridectomy," forms the subject of a paper by J. W. Hulke, Assistant Surgeon to the Royal London Ophthalmic Hospital, in which, after minutely enumerating the symptoms of the disease, together with its ophthalmoscopic signs, he proceeds to describe the operation, in strong advocacy of which his paper is written. He writes: "Iridectomy consists in excising a segment of the iris in its whole breadth, from the pupillary margin outwards to its insertion. This is effected through an opening of corresponding size at the extreme edge of the anterior chamber. Iridectomy may be practised at any part of the iris; Gräfe usually makes it outwards, but adds that, when desirable for the sake of appearance, it may be made upwards. This latter position has been adopted by Mr. Bowman, and is that which I have generally chosen. By removing a portion of the iris in this manner, the pupil is at once enlarged up to the corneal incision, which forms, as it were, the base of a coloboma iridis, and the edge of the lens, with the suspensory ligament stretching in front of the vitreous humor, and the ciliary processes are exposed to view.

"The little blood which oozes into the anterior chamber from the

cut edges or surface of the iris, should be at once pressed out or removed with a scoop.

"The after treatment is very simple. A light compress may be applied for a short time, as a precaution against hæmorrhage. This may be replaced after an hour or two by a piece of wet rag. The room should be shaded. Usually nothing else is necessary.

"As regards vision," the author remarks, "the ultimate results are intimately dependent on the period at which the iridectomy is performed, being more perfect where it has been early undertaken, than where it has been postponed." Mr. Hulke concludes his paper by a defence of the operation itself, and by ably combatting the alleged objections raised against its performance.

A case of "bronzed skin" was related by C. J. B. Aldis, M. D., one of the London officers of health. Robert Brett, aged twelve years, came under the author's care on March 29th, 1859, with the usual symptoms of supra-renal capsular disease, namely: body dark olive color; pulse feeble; occasional vomiting; pain in the back; languor, etc.; eyes sunk; conjunctivæ pearly white. The complaint proved fatal on August 20th, of the same year. The autopsy discovered no internal disease, except in the supra-renal capsules, which were converted into tough, yellow matter, their original tissue having entirely disappeared.

In my last letter I reported a case of axillary aneurism, for which the subclavian was tied by Mr. Paget, on June 26th; the progress of this patient, after the operation, had been very fluctuating, from the presence of abscesses in various regions, and from repeated hæmorrhages from the wound; however, I was enabled to give a more favorable account of his state before my letter left. I regret to say that I have now to report his death, which followed a severe attack of bleeding, on August 30th. The *post-mortem* examination showed slight atheromatous deposit, both in the subclavian and the carotid of the diseased side; there were two aneurismal sacs, both of which had suppurated, the one above being the size of a small orange, while that below would nearly admit two fists. The hæmorrhage of which the patient died is supposed to have flowed from an ulcerated wound in one of the collateral branches of the axillary artery below.

In observing the steady advance of our profession as a science, its increasing knowledge, its improved manipulation—nothing

strikes us more forcibly than the gradual adoption of *treatment*—mechanical, medicinal or dietetic—at the expense of the knife ; and whether we allude to amputations, which, from being of almost daily occurrence at the large hospitals, have become the great exception, and not the rule, as heretofore ; whether we observe the treatment of many aneurisms by pressure ; lithotrity where lithotomy was practised ; or the results of an improved mechanism in our orthopædic institutions, all point alike to that conservatism in surgery, that more perfect dependence upon our great physician, Nature, the result of a steady march onward in the true science of our profession. We do not now, as of old, so much attempt to *cure* as to place our patient in that position in which Nature may take the law into her own hands, and effect those results which most surely come within her province.

At the Orthopædic Hospital, I had an opportunity, a few days ago, of observing, under the guidance of Mr. Holmes Coote, the happy effect of mechanical treatment in many cases of talipes, club-foot, lateral curvature of the spine, cicatrices following severe burns, etc. It has happened to me on many occasions to have watched the treatment of these cicatrices, and to have had to record in my note book the almost uniform failure of all operative procedures adopted for their cure. I have witnessed the excision of the entire surface *en masse*—its gradual removal ; the substitution of healthy tissue from various parts of the body ; the division of the cicatrix by many small incisions, varying each from half an inch to an inch in length, and placed in parallel lines of one or two inches apart throughout its whole extent, but in no case do I find anything like satisfactory results ; the last mentioned plan, indeed, adopted by Mr. Skey, and which gives the altered structure very much the appearance of a piece of net-work, when combined with gradual extension, has promised well, and the patient has returned home, after the healing of the wounds, much benefitted by the operation ; but the improvement has, I fear, in most cases, been temporary, so great is the contractile power in these deformities.

Mr. Coote attracted my attention to several patients in different stages of treatment, in whom the cicatrix, the result of a severe burn upon the chest and neck, had involved in its contraction the chin, and under lip, both of which were drawn down upon the sternum, and there immovably fixed – the entire eversion of the lip, and conse-

quent flow of saliva over the surrounding tissues rendering these poor patients most repulsive in appearance. All such cases, notwithstanding their severity, and the almost ligamentous character of their adhesions, were treated by extension only, applied by a simple mechanical contrivance, and persevered in for many months—the results being most happy. A well fitting ring of metal, padded, is fixed round the patient's waist, forming the support behind, of a steel upright, which again is steadied in its position by straps around the shoulders, from the upper end of this, project forward on each side of the neck, and beneath the chin, two well padded supports, fixed to the upright by moveable screw and cogwheel joints, by which they may be raised or depressed by means of a key, at pleasure. By this simple contrivance, permanent, steady extension is effected, resulting in the most perfect cures.

I was much pleased with the result of orthopædic surgery in the case of a woman aged thirty years, who was about to leave the hospital perfectly cured of a double curvature of the spine. She had suffered from this deformity for seventeen years, during the greater part of which time she had been quite incapacitated from any household duties whatever ; her case had been accompanied by all the usual aggravations of the severest form of the disease, viz : pain and sinking on the concave side of the chest, palpitation of the heart, and loss of power in the lower extremities from irritation of the spinal chord. A strong metallic ring around the waist, and resting on the hips, had been worn by her for eighteen months, from which sprung, on either side, supports capable of being lengthened or shortened at pleasure, fitting beneath the armpits, and relieving the spine from the superincumbent weight, whilst pads were so adjusted, with rack and pinion joints, as to exert a continuous and increasing pressure upon the projections of the chest on either side. This instrument, Mr. Coote assured me, was the only means adopted for her cure, which was most perfect. At this hospital I observed several other cases of interest, of which I propose to give your readers some account in my next.

I had an opportunity of assisting Mr. Skey, a short time since, in the breaking down and resetting of a femur, which had suffered compound fracture, in the month of June last. The patient, a lad of fifteen years of age, while climbing a tree, missed his footing and fell, his thigh coming in contact with some fallen timber, with such force as to result in an extremely oblique fracture of the femur at

about its centre, the sharp extremity of the lower portion forcing its way through the integument. The boy was removed home, and subjected to such treatment as the neighborhood (it being some distance from London) could afford. I do not wish to animadvert on this treatment, the numerous stages of which were minutely described to me; suffice it to say that the patient presented but a melancholy aspect. He had been worn out by pain, and by a heavy drain upon his system, consequent upon abscesses about the front of the thigh and foot. The leg was shortened and distorted to the extent of at least four inches—a considerable amount in a lad of moderate stature—and a small fistulous opening still existed at the seat of the old wound, presenting much such nipple-like excrescence of granulations as almost invariably points to the presence of dead bone; this, however, could not be detected, after careful examination by the probe.

The patient having been placed under the influence of chloroform, Mr. Skey proceeded to examine the state of the adhesions which had taken place, with a view to ascertain their strength and character. It was found that little or no bony union had occurred; the adhesions partaking more of a fibrous character. These he proceeded to demolish, bending the thigh forcibly in all directions over a fulcrum formed by the hands of an assistant, and rotating it with considerable effort, so as if possible to leave no adhesions untorn. This being effected, and perfect mobility restored at the seat of fracture, the three-fold dislocation pulleys were carefully adjusted; the extension being applied from the ankle (an invariable rule of Mr. Skey's, in preference to the application above the knee, in all cases where extension of this kind is required). Counter extension was exerted by means of a perineal bandage carried upwards and fixed at the head of the bed. Force was now applied gradually, and maintained for about an hour, the patient, of course, remaining under the influence of chloroform during the entire period, for the double purpose of relieving pain and relaxing the muscles, which, after four months' contraction, would, of course, exert considerable power, and contend to their utmost for every hair's breadth of ground. At the expiration of that period, the limb having regained its normal length within one inch, and as much extension having been applied as was deemed safe, under the circumstances of extreme disorganization which the integument of the thigh had suffered during the previous treatment, the pulleys were detached, and a

long splint, reaching from the axilla to the heel, adjusted, and secured to the foot and leg by bandages carefully applied, and well defended at all salient points by masses of cotton wool. A perineal bandage secured the counter extension. At the present date it will be impossible to pronounce positively upon the ultimate effect of this operation, but to judge from the very satisfactory reports from the assistant left in charge, and the result of several other cases of re-fracture performed by Mr. Skey for ill-united and shortened bones, the prospect is most cheering. I will report further in my next.

Post time approaches, but I must not conclude my letter without devoting one line to Sir Benjamin Brodie. He still remains in the country, under treatment for his impaired vision, which, I am happy to report, shows some signs of amendment, and gives promise that hereafter further and more satisfactory improvement may be hoped for. The operation to which he submitted for glaucoma has been decidedly beneficial, even up to the present time, the improvement being progressive, while the cataract in the right eye will ere long be in a fit state for such operative interference, as it is confidently hoped will result, at least, in partial restoration of sight.

Sir Benjamin recently forwarded his resignation of the office of President of the Royal Society, which post he has so ably filled for the last two years. The Council, however, unanimously requested him to permit himself again to be nominated, with an understanding that he should not be called upon to perform the duties of the office for the present. Upon these conditions, Sir Benjamin Brodie has consented to fill once more the Presidential chair of our great Society.

LONDON, October 30th, 1860.

ART. X.—*Psychological and Hygienic Observations and Reflections on Rivers:* By BENNET DOWLER, M. D.

> See how some noble river's swelling tide,
> Augmented by the mountains' melting snows,
> Breaks from its banks, and o'er the region flows.
> BLACKMORE.

RIVERS and their geological formations—their inundations, basins, and valleys—their detrital matter and transporting power—their flora,

fauna, temperature, climate, and potability—are chief elements in medical topography and ætiology. The psychological influences and associations incidental to their scenery, their hills, valleys, woods, wilds, cliffs and mountains, their serpentine meanderings, majestic flowings, and fertilizing and hygienic properties, comprehend the beautiful, the picturesque, the sublime, and the useful. Rivers contribute to the commercial and social intercourse and well-being of communities, and, at the same time, excite the dullest intellect with emotions which, in some countries, have assumed the form of adoration, and have given rise to long pilgrimages, as to the sacred Ganges. The water of this river, instead of the Bible, is sworn upon by the Brahmin in British courts of justice, in India. The ancient Egyptians deified the Nile. The Christian world associates with the ideal conception, or actual view of the river Jordan, the most sacred thoughts. The sublime Milton describes the moon as having

"Rivers or mountains in her spotty globe."

There is geological truth as well as poetry in the assertion, that the fairest portions of the globe are the gift of its rivers.

Rivers, which are all-powerful in their influence upon the origin and extension of commerce, civilization and the progress of population are, as already stated, important elements in hygiene and medical topography. The dwellers on the banks of the Mississippi, a somewhat narrow stream in appearance, considering the immensity of its volume and depth, have generally but an imperfect idea of its comparative greatness. The Rev. Mr. Milner, in his elegant and elaborate work (*Gallery of Nature*, London, 1846) has from various data arrived at the following results concerning the proportional quantity of water discharged annually by the principal rivers of the world. He commences with his own Thames as a standard of comparison, designating it as 1.

Rivers in Europe: Thames, 1; Rhine, 13 (that, is 13 times greater); Loire, 10; Po, 6; Elbe, 8; Vistula, 12; Danube, 65; Dneiper, 36; Don, 38; Volga, 80. Now, on adding these figures, the result is 270; that is, these rivers discharge 270 times as much water as the Thames, while, by his estimate, the Mississippi discharges 338 times as much: that is, nearly one-third more than all these European rivers.

American Rivers : The Rio de la Plata, 490 ; the Amazon, 1280 ; the Mississippi, 338. These three rivers give 2,108—that is, about eight times more than all the European rivers named above.

Asian Rivers : Euphrates, 60 ; Indus, 133 ; Ganges, 148 ; Yang-tse-Kiang, 258 ; Amour, 166 ; Lena, 125 ; Obi, 179. The African river Nile is reckoned at 250. These Asian and African rivers united but give 1,321, being a slight excess over the Amazon alone. Thus, all of these named rivers in Europe, Asia and Africa, give 1,591, while the Amazon and Mississippi give 1,618, leaving a remainder of 27 Thameses in favor of two American rivers.

It may reasonably be supposed that the length, size, depth, velocity, banks, tributaries, and latitudinal direction of rivers, indirectly play an important part in regard to their hygienic influences. A long river, which, in the lower part of its course receives no affluents, having water sheds or inclined planes on both sides, which, contrary to the usual formation, throw the rain water and filth from towns from the river into lakes, swamps, and the sea, and not into the stream itself, is likely to have a purer current or greater exemption from both animal and vegetable matters, than a short rapid stream of equal magnitude. Such is the Mississippi. How impure soever its sources or tributaries might be thousands of miles distant, these waters would, from fermentation and motion during a long time and distance, deposit or decompose organic matter, and part from its stream offensive gases, and purify itself before reaching New Orleans ; and the more so, because the river, in the lower part of its course, receives no affluents which would bring in fresh impurities.

Hence the expensive chemical processes, which, by the way, are of dubious salubrity, now practised for the deodorization of rivers, the Thames, for example, is not required for the sweet, odorless, and potable waters of the lower Mississippi.

Short rivers of great velocity carry forward with great rapidity abundance of detrital matter, both organic and inorganic. Johnston says : "The velocity of a river depends on the form of its channel, its inclination, and the volume of water contained in it. If the water met with no resistance from its banks, the velocity of a river would depend upon the accelerating force of gravity, which would soon become so great as to render it the instrument of devastation and ruin over its whole course. The Thames, which has a descent of

one hundred feet would then flow at the rate of fifty miles an hour; and the Rhone, which receives the great body of its waters at an elevation of nine hundred feet, would acquire at its mouth a velocity of one hundred and sixty-four miles an hour. The molecules of water in contact with the sides and bottom of the channel, being retarded by friction, move more slowly than those at the surface and centre; and hence the greatest velocity of a river, flowing in an open channel, is in the middle of the current; and in consequence of the pressure of the upper stratum of the water tending to give greater velocity to that which is under it, this maximum is found at a little depth below the surface. The greater velocity is to the mean velocity nearly in the proportion of five to four. Thus, if the greatest velocity is determined by experiment, the mean may be assumed at four-fifths of the amount nearly."

The lower Mississippi moves slowly through an almost level plain, and between a series of salient and retiring bends, which retard its velocity. It is incapable of transporting a particle of sand, unless comminuted into an almost impalpable powder. Its apparent impurity consists of silicious and earthy, not of organic matter, as animalculæ, infusoria, algæ, etc.

Springs which contribute much to the river often hold mineral matters in solution, and surface water in which organic substances are suspended, after having been long exposed to the air, and agitated during a flow of thousands of miles, would precipitate, deposit, or decompose such matters to a great extent. The popular notion that running water tends to self-purification is not without foundation.

The lower Mississippi, as compared to the upper or even the middle divisions, is a law unto itself, having no rock formations, projecting hills, soils of varied density, great rafts, planes of alternate depression, or opposite inclination. These fixed physical agencies which give to rivers width or narrowness, depth or shallowness, direction or bias, sluggishness or velocity, are in no wise proportioned to or governed by the volume of their waters, afford a strong contrast to the hyrographical laws which prevail in an uniform alluvial plain. Nor is the physical regimen of the lower Mississippi identical with that of some of its affluents in the alluvial region. A fallen tree, a stranded log, or raft, cannot, as with some of its feeders, change the bed of its mighty stream. The channel and the dynamics

of the Mississippi differ from those of the Amazon. In much of the upper division of the latter, its width is over a mile, but the lower river is much wider, rendering it, in some places, difficult to see the opposite shore; yet the Mississippi, in the season of inundation, rivals the Amazon, and inundates many thousand square miles. The former traverses about eighteen parallels of latitude, having varied climatic conditions; the latter gathers its multitudinous waters under and from both sides of the equator, following the same, through deep, luxuriant forests, in a climate changeless, except from the presence or absence of rain, ever flowing where summer is eternal. In the spring, when as yet, the sources of the Mississippi are enveloped in ice and snow, the banks of the lower river are crowned with flowers, and fanned with the balmy air of the tropic.

The psychical, social and hygienic influences from the elements in this magnificent tableau of Nature must, as the ages roll away, more and more exert a potent modification upon the constitution and well being of the population. The father of medicine, whose observations were restricted to the narrow vallies, rugged hills, and unimportant rivers of his own country, made numerous physiological and hygienic deductions from their topography in his most admired work "*On Airs, Waters and Localities.*" Hippocrates says: "The difference in the seasons may be set down as the principal cause of difference in the nature of men; next follows the situation and nature of the soil, and the quality of the waters." Although this postulate is apparently put too strongly, yet in an analogical point of view it has a universality in the flora and faunæ of different latitudes which must strike the most indifferent observer who descends the Mississippi from the Rocky Mountains to the land of the orange, the cotton plant, the sugar cane, the fig, the magnolia grandiflora, the crocodile, and the sole abode of the wonderful amphiuma, the only real amphibian, the connecting link between the terrestrial and aquatic faunæ of the globe.

This Hippocratic dogma has been revived and enlarged by M. Boudin in a recent number of the *Journal de la Physiologie*, edited by Dr. Brown Séquard in an essay on the *Non-cosmopolitism of the Human Races*, in which M. Boudin undertakes to prove that all the races, with the exception of the Jewish race, and that portion of the negro race in the southern portion of the United States, perish soon or late upon migrating to climates differing from those of their nativity.

Without stopping to notice at length the parallelism between the Mississippi and the Nile, a few remarks concerning the latter may not be irrelevant to the aims of this paper upon Rivers. "Rivers," says Dr. Drake in his elaborate work, "have become objects of paramount interest to the medical ætiologist; and without a full consideration of them, but little can be said on the endemic febrile diseases of the country."

The valley of the Nile and its river have nearly the same inclination (about two inches in a mile) with that of the lower Mississippi. In the autumnal season, when the Nile inundates the valley, it rises about twice as high as the Mississippi at New Orleans, but during low water its general depth is six feet only; while the difference between high and low water in the Mississippi is comparatively inconsiderable, being at all seasons from one hundred to one hundred and fifty feet deep.

"The Nile varies in width considerably, according to the season of the year; but it never exceeds a third of a mile—is always muddy, even in April and May, when it may be considered clearest. During high Nile the water is of a dirty red, or brown color, being highly charged with fine, black alluvial matter, which cracks when exposed to the sun, forming deep fissures. The Nile water is proverbially nutritious, sweet and excellent, and is universally recommended for invalids: it requires filtering, or, what is sufficient, to be allowed to settle." (*Egypt*, by W. H. Yates, M. D., vol. ii, 384. Lond., 1843.) The writer affirms, from personal observation and experience, the salubrity of the Nilotic waters and climate, especially in regard to pulmonary patients. He says that he knows persons like himself, "who had been declared consumptives, and, who not only recovered a certain degree of health, but are alive now, and have been enabled to return to Europe." (i, 141.)

M. Thiers, in the third volume of his History of the French Revolution, gives a summary of the topography of the Nilotic Delta, affirming that the French army found its climate to be pure and salubrious, and that "its marshes which would be pestilential under the sky of Europe, produce in Egypt *not a single fever*."

As much has been published in this journal concerning the medical hydrography and topography of the Mississippi and its valley, it is not intended, at present, to enter upon a special examination of these topics. It may, however, be allowable to glance for a moment

at the analogue and rival of the Mississippi, namely, the Amazon, the great equatorial river of America, whose water-shed, if travellers may be credited, has an area of several millions of square miles, and whose flood is poured into the Atlantic by many mouths, variously reckoned at one hundred and eighty to two hundred and fifty miles from each other—a maze of intricate currents choked with islands, which some writers estimate at one thousand two hundred!

The city of Para, the first, and indeed, almost the only important city on the Amazon (except Santarem six hundred miles above), is situate in 1° 18′ S. lat., eighty miles from sea on one of the arms of the river, or rather on the main river. This city, which, by the census of 1848, contained 9,284 free persons and 4,726 slaves, was long reckoned one of the healthiest cities in the world, never having been visited by epidemics until 1850, when yellow fever and small-pox prevailed for the first time. Yellow fever appeared in February, 1850, and continued for several months, twenty to twenty-five having died per day from this disease in April of that year.

This exemption is remarkable in all points of view for the ætiologist. For, on the supposition that yellow fever is contagious, it ought to have been often imported, as the population was formerly about 25,000, and had long ago a custom house and considerable commerce, and exported cotton, sugar, coffe, cocoa, cloves, nuts, vanilla, copaiba, sarsaparilla, rice, india rubber, hides, dye-woods, and numerous other products.

Political disturbances and Indian massacres have reduced the population.

If the yellow fever be the product of such local causes, as have been named by miasmatists, as heat, moisture, river inundation, and alluvial deposits, swamps, etc., Para ought to have suffered from its very foundation in 1615. A vast sheet of water, dotted with numerous, low, woody islands and mud banks, stretching themselves out before the town, where there is much shoal water, seem to afford the agents to which yellow fever is usually attributed.

Nor can the yellow fever of Para be ascribed to great changes of temperature, the entire range of which is very little, being, according to Mr. Edwards, but nine degrees: the highest temperature which he records, omitting fractions, are, for June (1846), 86°; July, 86°; August, 86°; range, 9°; average, 80°.

Para was founded in 1615—one hundred and three years before New Orleans, and was, as already stated, invaded by yellow fever the first time in 1850, two hundred and fifty years after its foundation. New Orleans was exempt until 1796—a period of seventy-eight years after its settlement. Para, where frost is unknown, where every month of the year presents just such a temperature as most writers consider essential to the originiation of yellow fever—Para, situated nearly the same distance from the sea as New Orleans, having also a mixed population, Caucasian, African and Indian, and being almost the only commercial town and civilized spot in a vast region, nevertheless escapes for centuries. There was no good reason to think that either the Amazon or Mississippi is chargeable with yellow fever or other epidemics.

Density of population, one of the assumed causes of yellow fever, cannot apply to the desert banks of the Amazon, with the exception of Para, and even there, this disease did not appear until long after the town had declined nearly one-half in its population. This city is the capital of a province of the same name, which is one-fourth the size of Europe, and fifteen times larger than the area of the New England States, although its population of all races and colors, savage and civilized, is reckoned at only 205,000. Excepting Santarem, six hundred miles above Para, the houses upon the river are estimated at but fifty for every three hundred miles, and yet the river's banks are the most densely inhabited portions of the country. At Para and a few other points the population is barely sufficient to test the hygienic influences of the river and the climate. These influences, according to all the authorities which I have seen, including the recent works of Edwards, Herndon, and others who have visited this region, are highly favorable to its salubrity, particularly upon the banks of the lower Amazon, which is probably one of the healthiest parts of the globe.

Art. XI.—*Borax as a Parturifacient:* By E. W. Cade, M. D., Troup, Smith county, Texas.

On Saturday, October 13th, I was requested to visit Mrs. G., who, from what the messenger informed me, I surmised to be threatened

with abortion. On reaching her, I was informed that she supposed herself to be about three months advanced in pregnancy, and that early in the morning of the 13th, she was suddenly seized with a discharge of blood from the vagina, and pains of an intermittent character, commencing in the lumbar region and running down the groins in the direction of the thighs. An examination of the vagina and os uteri showed them to be of normal temperature, and the former undilated. I directed that she should take acid. sulph. arom., and tinct. opii, and to keep a strictly horizontal posture, with the hips somewhat elevated ; I also applied a mustard plaster over the lumbar region. Under this treatment I had the satisfaction of finding, after the expiration of a few hours, that the pains had ceased, and the hæmorrhage was completely controlled.

On Sunday night I was summoned to her in great haste. On reaching her, at about 11 o'clock, P. M., I found her laboring under an alarming hæmorrhage from the vagina, which I was told had commenced suddenly, about 4 o'clock the same evening. Her womb was perfectly quiet, no pain, and the os still in a natural condition. I placed her upon substantially the same treatment as on my former visit, but, after its continuance four or five hours, with no apparent diminution in the discharge, Mrs. G. becoming rapidly exsanguine, and I being satisfied of the death of the ovum, directed my efforts to causing the womb to expel its contents. I used the tampon, applied cold to the lower part of the abdomen and vulva, and gave ergot in the form of infusion. From this time forward until Wednesday night, I gave ergot in the shape of infusion, oil, and wine, but without effect. The discharges by this time had become of a highly offensive character, and immediately upon removal of the tampon, the hæmorrhage would gush forth alarmingly. The uterus was still inert, and its os completely undilated, which prevented the use of either a hook or forceps. I determined to use borax, and, having seen it mentioned as being supposed by some to possess the power of exciting the uterus to contraction, I commenced with half drachm, and gave the same quantity every half hour until three doses had been taken. About twenty or thirty minutes after giving the last one, efficient uterine action came on, which rapidly expelled a partially decomposed fœtus of about three months. Recovery, after this, was rapid.

I have had an opportunity of testing, several times since, the vir-

tues of borax as a parturifacient, but not so satisfactorily as in the case narrated, although in all, I think, I have discovered some increase of uterine action soon after its administration. I may be mistaken, and, from my limited experience with the article in question, would not feel justified in ascribing to it extensive powers; though I would like to see some experiments made with it on a more extended scale than can be done in country practice. If it really has no virtues as an ecbolic, the coïncidence of uterine action in Mrs. G.'s case, immediately after its exhibition, was certainly striking.

Art. XII.—*Resection of the Shoulder Joint; Recovery of the Patient, with almost Perfect Use of the Arm:* By Nathan Bozeman, M. D., of New Orleans.

Attention was first called to the feasibility of removing the upper extremity of the humerus, when shattered into splinters, about the middle of the last century. Indeed, so early as 1740, Thomas, a surgeon of Pézenas, is said to have removed successfully the head of a necrosed humerus. Resection of the joint for organic lesion, however, was not proposed until 1769, when Mr. White, of Manchester, first performed it. The operation, though a great improvement on the old practice of letting the disease have its own course, or of sacrificing the limb by amputation, did not then, it appears, come into general favor. It was not until about thirty years ago, we may say, that its importance was pointed out by Mr. Syme, and it became an established procedure in civil practice.

During the Peninsular war, excisions of this and some of the other articulations were occasionally performed, but the advantages of such a conservative procedure were not fully appreciated. Nor were they, we are told, until the Schleswic-Holstein campaign, when the practice, for the first time, was carried out on a large scale. The results then obtained proved its great efficacy, as has been attested by Langenbec and Stromeyer.

The Crimean war afforded another opportunity of testing the

great value of this conservative practice. We are told by Dr. Macleod,* one of the surgeons in that campaign, that resections of joints were attended with the most favorable results. Of eight primary resections of the head of the humerus, there was only one fatal result. Of five secondary, no death. Comment upon such results is unnecessary.

In the Italian war, if the statements of letter writers can be credited, the results obtained there were no less valuable than those we have just mentioned.

Now, according to Esmarch, four and a half inches of the upper extremity of the humerus can be removed, and yet a useful arm remain. Prof. Gross tells us that he has removed four inches with a similar result. These facts, then, go to show that the surgeon can give a favorable prognosis—the general condition of the patient being favorable—in almost, if not every case of caries of the head of the humerus, that he may be called upon to treat.

As to the best mode of performing resection of this joint, there appears to be considerable diversity of opinion. Mr. White adopted the plan of making a single incision in front of the joint, and parallel with the fibres of the deltoid muscle. Mr. Syme recommends a triangular flap, the anterior incision corresponding to that of Mr White. Prof. Gross gives preference to the straight incision of Mr. White, on the grounds that the deltoid muscle escapes extensive injury, and its integrity is thereby better preserved.

Admitting now that the reasons urged by Prof. Gross against the flap operation or cross incisions, are well founded, the procedure put into practice certainly has the objection, in my judgment, of being tedious and troublesome, especially if the glenoid cavity of the scapula is involved, and requires to be removed with the head of the humerus. Thinking that the disadvantages of the above contingency might arise in my case, which I would here offer in support of my views, I concluded to depart from the straight incision procedure, sanctioned by the high authority we have mentioned, and to follow a plan somewhat after the one recommended by Morel, which I will point out in its proper place. As the result proved I had no reason to regret the adoption of this procedure, and it is certainly the one I would always recommend.

* Notes on the Surgery of the Crimean War.

1st.—It affords easy access to the joint, and great facility of resecting the bone or bones.

2d.—It allows of free drainage from the joint.

3d.—The cure is rapid, and no permanent injury results to the deltoid muscle.

The following is a history of our case :

Lewis, colored boy, aged about twenty-five, above medium stature, and of powerful muscular development, entered my private hospital in November, 1857, laboring under disease of the shoulder joint. Having seen this patient several months before, I gathered the following particulars from him : He stated that while plowing in the early part of the year his mule took fright and ran off, dragging him by the driving line, which, in some way, had become fast around his left wrist. Having been carried about one hundred and fifty yards his left shoulder struck a stump with great force, thus causing his disengagement from the mule, by the line around his wrist breaking. Excepting some soreness and stiffness in the limb at the time, nothing was thought of the accident. He was able very soon to resume his work, and it was not until several weeks had elapsed that pain and swelling of the shoulder joint attracted serious attention. These symptoms, together with contracted use of the limb went on increasing until I was consulted in the case, this being three or four months after the receipt of the injury. I found great swelling of the joint, and had no difficulty in detecting fluctuation. I made a free opening about two inches below the acromion process, and let out at least three ounces of fluid. The discharge at first was of a serous nature, but it changed to a sero-purulent character towards the last. I contented myself now with introducing a piece of lint into the opening, ordering poultices, and enjoining quietude of the limb. Under this course of treatment the pain and swelling of the joint gradually subsided, and the action of the limb to some extent was restored. The patient was now dismissed, though still having a thin serous discharge from the opening.

This running, it appears, never ceased, though the patient complained of little or no pain in the joint ; his general health remained good, and he was able to go about and do light work up to the time of his admission as above stated.

Upon examination now, we found existing, not only the opening we had made in the outset, but three others with the same character

of discharge going on from all of them as when we last saw the case. One of these new openings was just above the clavicle, another behind the shoulder, and one rather in front of it. A probe introduced into all four openings, passed in the direction of the shoulder joint, leaving no doubt as to the existence of diseased bone there. In fact, I could feel the head of the humerus to be in a roughened condition, and by examining carefully the discharge, I could see small particles of bone mixed with it. Caries of the head of the humerus being therefore clearly made out, I determined to resect the affected part, the only thing that promised permanent relief and a useful arm.

The patient, accordingly, was ordered a dose of cathartic medicine, and the next day, it having acted well, chloroform was administered and the operation performed.

The procedure adopted consisted in making a somewhat semilunar incision, commencing about two inches and a half behind the point of the acromion process and running downwards, inwards, and slightly upwards, to a point about one inch and a half below, and just outside of the point of the coracoid process, thus throwing this angle considerably below the external one, and about on a level with the bottom of the glenoid cavity. The flap thus formed embraced nearly the whole width of the deltoid muscle, and when raised, afforded the greatest facility of reaching the joint and turning the head of the humerus out. The latter was effected, after severing the attachment of the scapular muscles at this point, and pushing aside the long head of the biceps, by carrying the elbow in front of the chest. The capsule had been destroyed by disease, and afforded no obstacle to this step. On examination now, of the end of the bone, it was found to be denuded of its cartilage, and to have a hole in it nearly an inch in depth and large enough to admit the point of the index finger. I sawed through the surgical neck which showed that the bone was perfectly healthy at this point. The glenoid cavity was also denuded of its cartilage, but otherwise the bone appeared to be healthy.

The flap was now brought down and secured in place with silver wire sutures, leaving a place at the inferior angle for the escape of matter. The arm was next raised up so as to bring the cut end of the bone against the glenoid cavity, and in this position it was secured by a roller to the side of the chest.

Quietude, cold water dressings, and light diet, constituted the after treatment. Not an untoward symptom occurred. On the seventh day I removed the sutures. Union by the first intention was found complete throughout, excepting the small point at the inferior angle, which had been kept open by the interposition of a piece of lint between the edges of the wound. On the twelfth day I instituted passive motion, which caused but little pain. After this the patient was allowed to carry the arm in a sling and to use it a little every day. At the end of four weeks, all swelling and soreness about the joint had entirely subsided, and there was pretty free use of the limb. The slight discharge, however, which had been going on from the beginning, still continued, intermixed occasionally with small particles of bone. This discharge lasted for three or four months; then it ceased, with permanent closure of the opening, and almost perfect use of the limb.

I saw this patient about eighteen months after the operation, and, excepting the inability to raise the arm above a horizontal position, the action was almost natural. He said that he had almost as good use of the limb as he ever had.

ART. XIII.—*Contributions to Comparative Anatomy and Physiology. (Crocodilidæ.)* By BENNET DOWLER, M. D.

NUMBER THREE.

REPUTED ODOR OF LIVING ALLIGATORS. MUSK GLANDS.

NEITHER in the hibernating nor hot season do alligators emit any odor, with very rare exceptions. The water in which they are wont to immerse themselves during hot weather, if not renewed, at length becomes turbid and offensive, the odor of which, is not, however, musky. In a late work (*Museum of Animated Nature, in fol.* ii, 79) it is stated that crocodilians have two large musk glands, opening externally by small orifices, whence exudes an unctuous matter, of a strong odor. The alligator's musk neither oozes out nor is oily, but concrete, granular, mealy, and comparatively dry, lying in and

covered by a valve-like sulcus or pocket formed in the skin, and within, covered with epidermoid membrane, through which there is no normal exudation. Even where several of these animals are enclosed in the same pen, from year to year, they are remarkably free from fœtid effluvia, as compared with other animals. During dissection a very faint, scarcely perceptible, fishy odor is emitted from their exposed flesh. The musk glands, unless when disturbed by dissection, or removed, are in the living animal odorless, but in the dead dried animal the odor of musk is very evident.

As Mr. Audubon gives a very different account (one contrary to my own observations—one which the planter, hunter, or woodsman may verify or disprove as the case may be), it will be quoted *Audi alteram partem.* "Few animals," says Mr. Audubon, "emit a stronger odor than the alligator; and when it has arrived at great size you may easily discover one in the woods in passing fifty or sixty yards from it. This smell is highly musky, and so strong that, when near, it becomes insufferable; but this I never experienced when the animal is in the water."

The musk glands, when removed, or dried in and with the skin, emit the odor of musk, and are sold by fishermen, (as I have been informed), for the medicinal or officinal article. It is probably equally as efficacious as the latter, and withal has a far more respectable organography, not originating in the *prepuce.* The dried skin of the under jaw of an alligator now before me, vivisected many years ago, emits the ordinary odor of musk, undiminished by time, though freely exposed to the air. Nevertheless, this animal, when alive, emitted no odor of the kind during two years. I have carefully examined five or six living alligators of great size—none of which emitted a musky, much less "an insufferable odor."

DERMAL PLATES.

The dermal plates, covered with a strong, dark epidermis, adhere to, or rather blend with, the skin and the tendinous insertions of the muscles. These plates, imbedded in and soldered to the skin, are nevertheless separable from the latter after a long maceration, as might be expected in tissues altogether different in structure, though virtually constituting one cutaneous envelop. Between the plates and the skin, there is consequently neither fasciæ, areolar, nor adipose tissue. The fat is not deposited upon the periphery.

The trunk, which is neither so heavy nor so extensive as the tail, is the only part furnished with osseous plates. These plates, which are arranged in comparatively regular rows on each side of the spine, do not cover the half, perhaps not the fourth part of the body, while the tail has none except a few on its superior surface near the sacrum. Both the plates and the skin display a variety of geometrical figures, the quadrangular type being the most common. This configuration is due to a series of longitudinal, elevated bands, which, intersecting each other, present seamed and indented lines of demarcation, giving the surface a segmentary, yet articulated appearance, especially transversely.

The number, size, shape, and consistence of the osseous plates are considerably diversified ; in the young animal they are cartilaginous, more especially in their peripheral or marginal expansions ; their ossification and extension proceed step by step to the adult period. They are not arranged in straight lines exactly parallel with the spine, but in curves, which augment as the distance from the spinal centre increases. The plates are very thick in their centres, owing to carinated or ridgy elevations, which rise gradually from broad bases, giving an uneven, rough cutaneous surface, except in the lower rows, next the abdomen, where they are not carinated nor quadrangular, but smooth, small, few and oval.

NUMBER OF PLATES.

In an animal thirty-one inches long, there were four rows in the neck, two on each side ; the first had three large, the second two small plates ; the residue of the body contained fifty-two, in rows on each side, without counting some which were cartilaginous and rudimentary, and which, at an age more advanced, become ossified. The aggregate, independent of the neck, is, therefore, one hundred and four—with the neck, one hundred and fourteen.

In living specimens nearly twelve feet in length, I counted, by means of the carinated or spinous ridges of the bony plates—in the first row, fifteen ; in the second, fifteen ; in the third, eighteen ; and in the fourth and last, eight, on each side—equal to one hundred and twelve, without reckoning those of the neck. As there is no record of the plates of the neck in this examination of five animals, the cervical plates may be estimated at ten, giving an aggregate of one hundred and twenty-two.

In a mummified Nilotic crocodile, nearly five feet long, of great antiquity (probably 3,500 years), I counted from the head to the interscapular space thirteen plates of various forms and sizes, and in the residue of the body, as far as the sacro-iliac junction, ninety-seven—an aggregate of one hundred and ten. The plates were counted, not as above mentioned, in the alligator, but in transverse rows, fifteen in number on the trunk, one being very irregular, and some few scarcely recognizable. The following are the results from one to fifteen respectively: four, six, eight, six, eight, eight, two, one (very irregular), ten, ten, ten, eight, six, four, and lastly six. The arrangement and form of the plates were similar to those of some other Nilotic specimens which were examined, agreeing also with those of alligators of similar ages. These transverse rows of plates seemed to correspond with the vertebræ, which, in the alligator at all ages, from the youngest to the adult, numbers fifteen, reckoning from the sacrum to the inter-scapular space; thence to the head, nine more, or twenty-four rows from the head to the sacrum. The transverse rows of plates and the number of vertebræ are, for each class, fifteen, sixteen, or seventeen, in the trunk, according to the point of departure from the shoulders, in counting towards the sacrum. This correspondence holds good even before the ossification of the plates in the very young animal. The first and most regular longitudinal row on each side of the spine, corresponds with the number of the vertebræ of the trunk; the longitudinal rows along the sides are less regular in their length and in the number of their plates, the rows themselves being variable in number and symmetry. The bony plates, originally cartilaginous in the young, become more and more ossified, and get larger, up to the adult period.

In a specimen larger than the last, there were ten very large, and a number of small plates upon the neck; from the latter to the sacrum, each side of the body gave, in the first row, sixteen; in the second, fifteen; in the third, eleven; in the fourth, six; affording an aggregate for the trunk of 106.

In all of these enumerations the caudal plates are omitted. These plates are few, being restricted to the upper surface and base of the tail, at and near the sacro-iliac junction, and soon become small, narrow, angular, few in number, and irregular; and disappear altogether.

In a tanned alligator skin* about twelve feet long, the first row, counting lengthwise, right side, gave seventeen ; the second, seventeen ; the third, eight plates ; on the left side, the first row gave seventeen ; the others were irregular in size, number, form, and arrangement. These enumerations do not extend beyond the sacrum. The large, thick, and somewhat quadrangular plates, which, upon the superior aspect of the trunk, are carinated, give place upon the sides, to small, oval, variously shaped, flat, thin ones ; and here, as in many other instances in physiological anatomy, a teleological principle is obvious ; for the acute, salient, bony ridges of the former would, upon the abdominal parieties, groins, and axillary regions, impede locomotion, either upon land or in water.

The Edinburg Encyclopædia describes the alligator of America as having "four cavinated scales disposed in a square upon the neck." In the Nilotic crocodile I have counted nine or ten plates of different sizes and shapes on the neck, four of which were large, nearly two inches square, and carinated, having in advance, and next the occiput, two which were flat and not quite so large, and two in the rear in the interscapular space of nearly the same extent.

According to some authors the nuchal plates are six ; others give a different enumeration. On the whole the classificatory values of the nuchal or other plates are too variable in number, size and figure, to afford reliable, generic or specific characters either to differentiate or identify the assumed species into which the crocodilidæ have been divided by systematic writers rather than by nature.

Professor R. Owen, one of the latest and ablest expositors of transcendental anatomy, maintains that "the main part of the skeleton—what may be termed the skeleton proper—consists of the neuro-skeleton, arranged in a series of segments, following and articulating with each other in the direction of the axis of the body, from before backwards in brutes, from above downwards in man, each complete segment called vertebra, so as to form a bony hoop

*Alligator shoes and boots are made out of the skin of the sides, belly and tail, in which there are no bony plates. The animal is skinned from both sides of the spine, no incision being made as in other animals, upon the abdominal aspect ; at least such is the information I have received. The external configuration of the leather, with its numerous, varied indentations or seams, having few acute angles, but many curves, giving an apparent elevation to innumerable enclosed platforms, combine the lines of beauty and the elements of the picturesque, to as great an extent as could be expected in boot or shoe ; and since the Prince of Wales patronized this Mosaic, figured leather of the American crocodile, shoes and boots of the same appear to have multiplied in New Orleans.

or arch ;" or rather, two hoops, "the upper hoop called the neural arch, the lower one the hæmal arch," respectively, for the protection of the nervous and vascular systems, might have added another segment of a hoop presented in the dermal bones of the crocodile and some other animals. It is scarcely tenable to maintain that the final cause or purpose of the ribbed hoop or hæmal arch is restricted to the protection of the blood-vessels, seeing the numerous allied organs and tissues which are equally hooped in and need and receive a like protection. Mr. Owen, upon the principle of analogy, and even homological anatomy, ought to appropriate the bony-plated dermo-skeleton of the crocodile, as having the same final cause or purpose as that attributed to the hæmal segment, instead of making it serve as a mere bullet-proof armor. Its chief purpose is, however, neither the one nor the other, but a very different one.

In regard to the uses or anatomico-physiological purposes of the dermal plates, erroneous views have been propagated by naturalists, as will appear hereafter.

Of the crocodilidæ, Mr. Bell says : "These dermal bones altogether form a panoply of defence which can resist the attacks of the most powerful enemies of whatever kind." *Mus. Anim. Nat.*, ii, 79. Professor R. Owen, in his recent work on the *Skeleton and Teeth*, advances the same view as to the purpose or use of the dermal bones : "The sturgeon, the crocodile, and the armadillo," are cited as examples showing the protective and defensive uses of these plates. "Hence," he adds, "the ball-proof character of the skin of the largest of these mailed examples," that is, the crocodile. 16. The same view is generally adopted. A writer in the *New Cyclopædia* says of alligators, "that the bony armor is their protection against all enemies, even against the artificial weapons of man, being proof against the rifle-ball, which commonly takes effect when it strikes the eye, or the unarmed skin on the belly and about the insertion of the fore-legs." Kirby, in his *Bridgewater Treatise*, says that the "scales are impervious to a musket-ball." Further testimony as to this generally received view of the physiological anatomy or supposed use of the dermal bones, is deemed unnecessary.

Having omitted to mention Baron Humboldt's statement concerning the dermal plates, I will add it here, though not in the proper place, as it illustrates his opinion upon the classification of the crocodilidæ.

In his Personal Narrative (Vol. vii, pp. 294–296), he says that he did not see any alligators in Cuba, but obtained two crocodiles—"the oldest four feet three inches long; they were captured with great difficulty—were muzzled, and bound on a mule—were vigorous and fierce, attacking great dogs." Having received these fierce animals, he proceeds to give the following singular criteria as fundamental for the classification of crocodilians. The crocodile of Cuba "has near the head four tubercles in one row, and three arranged in two rows. In the crocodile of St. Domingo, there are first two rows of four tubercles and afterwards one of two. This character is constant. The crocodiles of Magdalena have three rows of tubercles at the nape, the two first have four and the latter two plates." The tubercles of the nape, therefore constitute the foundation of his classification—a classification which other naturalists do not recognize.

If intentionality may, without presumptuousness, be ascribed to Nature, it is proper to inquire what is her purpose in giving the crocodilidæ dermal bones? It has been already shown that these plates cover only a comparatively small portion of the periphery (dermo-skeleton), the assertion of authors, contrarywise, notwithstanding. "Body and tail, says Mr. Broderip, are shielded on the back by solid carinated scutcheons; the scales of the belly are squared;" of the tail, he says: "its scales are elevated into a central ridge."

Even the best protected parts of the body are penetrable with the common lancet or duck shot between the margins of the plates. I have frequently found small shot imbedded in the muscles and other tissues in different parts of the body and neck; some of these shot were free from flattening, being quite round. The central or carinated portion of the larger scales in adult animals, might occasionally cause a rifle ball or shot to glance, when not striking perpendicularly to the axis of the ridge or thick portion of plate; but probably not one ball in a hundred would be so deflected as not to pass through the integument, even, though it might often be insufficient to kill a large animal, which can generally endure, without a fatal result, extensive injuries and mutilations.

The National Cyclopædia (London), which describes the alligator as being so completely encased in dermal plates, that "musket balls can only penetrate the eyes or the flanks," says, in the same paragraph, that "they defend themselves by striking from right to

left with their tail, a single blow of which will level the most powerful man."

Mr. Audubon says of the alligator, "that the chief means of his attack or defence is his large tail. Woe to him who goes within reach of this tremendous threshing instrument. The monster as he strikes with this, forces all objects within the circle towards his jaws;" he calls "the tail a battering-ram which bruises shockingly in a moment. If you go towards the head of an alligator there is no danger, and you may safely strike it with a club four feet long, merely by watching the operations of the tail, that at each blow you give, throws to the right and left most furiously," etc. (Eng. Ed. Buffon, iv.)

Now, it is evident that a solid bony case which is impenetrable and closely joined, must be rigid, not supple or mobile; the solid, bony plates would render the tail as well as the body, inflexible and incapable of sudden and powerful action either to the right or left, without fracturing this fanciful armor.

Although a series of false ribs exist in the cervical vertebræ unfavorable to the flexibility of the neck, this does not prevent a very considerable lateral motion even here. Alligators four or five feet long, will enter large tubs of water and immerse themselves and lay coiled up for days in succession, in a completely circular form, the tail sometimes overlapping the head, and with apparent comfort. In this attitude, I have kept a number during the hibernating and freezing weather, but always before the ice seals up the water, the tip of the muzzle is raised above the crust of ice. In their social attitudes, when a number are enclosed in a pen, they often lie in the open air doubled up against each other, as if many coils and contacts afforded them pleasure. Without now stopping to inquire into the physiological anatomy of the spinal vertebræ, it is sufficient to say that the habits and actions of the living animal show the erroneousness of the statements of some eminent naturalists, who affirm that "the general structure of the vertebral column, renders it difficult for the crocodilidæ to bend their bodies sideways."

The spino-dermal muscles become tendinous at a considerable distance from their insertion. The insertion is very oblique, forming an acute angle, the tendons seeking the posterior edge of the plates where they blend with, or apparently form part of the cutis; a careful dissection will show that these tendons become fibrous mem-

branes, expanding like the Louisiana palmetto leaf, not only covering and taking hold of the entire interior surface of the dermal bones, but sending fibres to the intervening skin not covered by the plates. The tendons, white, small, and symmetrical, after parting from their muscles, are somewhat compressed into a ribbon-like flatness, giving a greater diameter longitudinally than vertically; while, on the contrary, on approaching the plates, they suddenly expand, greatly increasing their vertical diameters before insertion, previous to which, the fibres of the tendons are arranged in parallel bundles. Some of the dermal bones, especially in the middle region of the back, receive two distinct tendons.

I did intend, had time and space permitted, to conclude this account of the plates, with a description of a specimen now before me, in which the tendinous insertions of the muscles are preserved; but a minute description without engravings might not be altogether satisfactory.

Seeing that the dermal bones cover but a small portion of the body very imperfectly, leaving spaces, both transversely and longitudinally wholly unprotected—that the greater portion of the periphery has no plates, and that the plates serve for the insertion of muscles, there can be no difficulty in deducing their physiological anatomy or purpose, while the habits of this animal confirm the view that its muscular activity, especially in the lateral direction, requires the anatomical arrangement already described.

PROGRESS OF MEDICINE.

Art. I.—*On Delirium Tremens:* By Jeffery A. Marston, M. D. Assistant-Surgeon, Royal Artillery, Malta.

The following remarks are put upon record with the view of reconsidering the etiology of this disease, its varieties and treatment. This author would be distinctly understood as not upholding the blind routine treatment of it, nor defending from the reprobation it deserves, the practice of giving "fifteen or sixteen grains of opium in as many hours." There can be no doubt whatever, that

many cases (perhaps the larger number) of delirium, arising from the abuse of alcoholic liquors, will and do recover, either spontaneously, or by a simple non-specific treatment. This fact has been long known to the medical officers of both services; but recently a reactionary current has set in strongly against the experience, and remedial measures employed in the disease itself, as well as against the truth of the views of its etiology and pathology, held by our forefathers, and promulgated by our ordinary teachers.

These latter and newer doctrines have gained, and are gaining force for two reasons—1st. Because they are supported by a goodly array of facts, and contain a large amount of truth; 2d. On account of the scientific position and celebrity of the men who advocate them. The present age will form a curious episode in medical history; for we have the experience of ages, and theories based upon such experience, tottering before the rude assaults of a more positive school. Already has the therapeutical value of venesection been rudely shaken; and now the ordinary treatment of delirium tremens is impugned, and said to be based upon an erroneous pathology.

The *Medico-Chirurgical Review*, for October, contains a good resumé of the tenets of the new school, and what I shall take to be a good exposition of the present state of the case. It is not a very pleasant thing to speak of the want of sobriety of one's corps; but I take it that the men of the Royal Artillery and Engineers drink about as much and deeply as any other corps—and that the ordinary British soldier is not the most sober man, of a not very sober nation, is patent enough to common observation.

First of all, let us see that our terms are precise and clear. I would say there are three separate and distinct forms of the disease in question; that if any one plan of treatment be pursued in all, and, if without reference to their distinctive features, they be individually and severally heaped together under one head, we can obtain no reliable data. Not a little misconception, it seems to me, has arisen from this very source.

I. Delirium ê potu, or Delirium Ebrietatis, properly so called.

II. Delirium Ebriosorum.

III. Delirium complicated with renal, hepatic, gastro-enteric, cardiac, and central diseases.

Professor Todd, in one of his clinical lectures, has some admirable remarks upon the two first forms and their distinctions. The first I would illustrate thus: It happens in the younger and more acute drunkards (if I may so term them). The disease follows quickly after a debauch—within twenty-four or forty-eight hours. The symptoms are—The tongue very foul and tremulous; great headache; face rather flushed; tenderness often upon pressure of the epigastrium; nausea; sometimes vomiting; perfect anorexia; sleeplessness; tremors, hallucinations; illusions; restlessness; an excited manner; a quick, soft, and tolerably full pulse; and often there is present a smell of spirit. Now, these cases are by far the most frequent. The disease occurs in a man whose means prevent a regular steady soaking, but in one who drinks very

hard whenever his pocket allows it. However frequently this may be, there is always a good and distinct interval—weeks or months. The subject of the disease goes in for a heavy night or so at a time—his money is exhausted—he does or does not go to prison, but at any rate he does not drink again for some period, for the best of all reasons—want of means. Here is the ordinary form of the disorder: An acute alcoholism—the drink being *in* the man. An emetic purgative, with quiet and repose for two or three days sets him all right again.

The second form is a delirium of drunkards, in contradistinction to to a delirium from drink. The illustration of this form will be: The subjects of it are older—have the outward and visible signs, and bring the history of a habit of drinking; hard drinking, indeed, if the aggregate be looked to—the steady weekly consumption of spirits, to wit—but less hard than the first variety in a given space of time. Those men have kept out of the guard-room, and are shrewd enough to keep aloof from their officers; bear a good regimental character; are seldom, if ever, in hospital; and although long suspected in the regiment of being secret drunkards, yet are only proved so by some accident—as turning out at night to a fire—or admission into hospital for some trivial disease. At last he is caught and lodged in the guard-room; or by some means or other he is with all suddeness deprived of his drink; and delirium tremens sets in, appearing from the second to the seventh day after confinement. while perchance the man is awaiting his court-martial.

In short, you get the history of a man who has drank for years and years; during which time he has performed his duty under sharp supervision, and has not suffered from any disease. He is deprived suddenly of his stimulus, and takes delirium tremens.

Complicated Form.—This variety will take in the various symptoms of any organic disease present, and complicating the case. It would be impossible and needless to enumerate the various complications, further than to remark that their recognition and diagnosis is all-important; the difficulty of their treatment very great; and that the mortality far exceeds that of the other and simpler forms of the disease.

The visceral or glandular derangements become evident for the first time during the attack of delirium tremens—the man never having been before in hospital—and are then only arrived at, from the fact that some unusual symptoms, as convulsions, jaundice, œdema, persistence and peculiarity of the delirium or albuminous urine make them apparent.

The treatment of such cases must necessarily be modified, according to the diseased state and its indications.

Having premised this much, let us turn to the points in dispute, which appear to be—that the theory of the causation or etiology of the diseases hitherto propounded is wrong, its pathology wrongly stated, the indications for its treatment misunderstood, and the special modes of treatment themselves (particularly that by opium and stimulants) have been erroneously and injuriously pursued.

It is often better to watch than to correct, and I would ask how many cases classed under the first form have been enumerated with the second and third varieties? I fancy that by far the larger number of the so-called statistics consists of individual cases of the first form, and if so, the generalization from them cannot fail to be vitiated, when applied to the whole disease.

Dr. Watson expressly says, that some cases occur after a long debauch, and others in which the patient has not abstained, but is continually fuddled; and here the disease arises because the man goes from his ordinary positive to the comparative degree.

There is no doubt that those cases are numerous, and their plain inference is "poisoning;" but so much has been made of them, as virtually to exclude the occurrence of other forms.

Etiology.—Taking the objections seriatim, the Etiology: Watson says, the predisposing cause is drink; the exciting cause the privation of it. Against this view there is urged the frequency of the disease following a debauch, etc., without any privation, in short, the frequency of the first form. Such frequency, it is argued, proves the disease to be the result of poisoning, and the sufficiency of the poison alcohol to form at once the exciting and predisposing cause. The occurrence of some disease, such as catarrh, influenza, gastric disturbance, in a drunkard, may be also an exciting cause. Lastly, the statistics of prisons are against the theory, it is said, of privation. The first objection is shortly this, that we have proof of one cause (toxæmia from alcohol) being sufficient, and hence it is unphilosophical to seek a second. I can only meet this by stating, that there are different forms of the disease, which may have different causes, nay, a plurality of causes. Besides, I shall adduce positive evidence of the disease following the withdrawal of alcohol. With regard to prisons I can only speak of military ones. No cases occur in them, I am aware, and am not surprised at the fact; but they occur antecedently, coming on in the guard-room, where, if a man be tried, he awaits his court martial, probably for many days; and I state as a fact, that cases of delirium tremens commonly occur from the first even to the seventh day after the privation of liquor. The guard-room statistics would hence be every bit as strong the other way. I am aware that statistics do not settle the fact, they do not prove cause and effect, viz: deprivation of accustomed stimuli as a cause of delirium tremens; but they cannot certainly be urged against it, for they support at least the view of this privation being frequently an antecedent to the appearance of the disease? Is it a necessary antecedent? I believe it is in some cases. Take the following:

Sergeant D——, æt. 39 years—in daily expectation of a good conduct metal. Admitted April 13, suffering from a small boil upon the lobular appendage of the right ear; in perfect health apparently. Upon the afternoon of the 14th I noticed that he was very tremulous and nervous, and asked him, privately, about his habits. He denied, in the most positive and awful terms, that he drank hard, and refused my offer of a glass of brandy. Upon the morning of the 15th, I learned that he had slept badly, and found

him suffering from a decided attack of delirium tremens. He talked incessantly, was bathed in perspiration, had illusions and fancied he saw strange animals, and heard strange noises. His tongue was coated and very tremulous; the eyes ferrety, the pupils moderately contracted. He was ordered a sharp purgative, and cold douche to the head, followed by a basin of beef tea. At 12 noon he took ʒi of laudanum, but was sick, vomiting nearly it all; at 2, P. M., he had some warm brandy and water, with ʒjs of laudanum, which he kept down; about 3, P. M., he had more beef tea, and said he thought he should sleep, lying down for that purpose; I happened to be in the ward at the moment, and my attention was arrested by his livid face and heavy breathing. In about a quarter of an hour he had an epileptiform convulsion; two or three followed after a short interval, and in about three-quarters of an hour he died with symptoms of apnœa. Besides cold douche, artificial respiration by Marshall Hall's method and enemata of brandy, were tried without avail. The *post mortem* was made most carefully by myself, and I could detect no organic disease to account for his death. The left ventricle of the heart, however, was in an advanced degree of fatty degeneration; and besides some venous congestion of the membranes of the brain, there were a few drachms of fluid in the cerebral ventricles.

Now, I would remark how strong is the tendency of the evidence, negative and positive, of the facts here. A man is entitled to a good-conduct medal—which presupposes eighteen years absence from the defaulter's book as regards courts-martial. I learnt from his wife, subsequently, that for six or eight years he had drank very hard, and that, although she had never seen him drunk, yet she could not say that he was ever perfectly sober any night; that she did not remember his having ever been in hospital, or suffering from any disease. He comes into hospital, is deprived of his liquor directly, and in fifty-six hours is dead. This appears to me a strong case, but it is not by any means an isolated one; and others equally positive will be cited, far more than sufficient to meet the logical requirements of one grain of *positive* against a bushel of *negative* evidence.

Pathology.—Dr. Watson's views may be epitomized thus:—The disease is "exhaustion with nervous irritation;" the remedy, "sleep." Against this is urged the toxæmic view, and the positive chemical evidence of the presence of alcohol in the cerebral ventricles, and that sleep is an *effect* and sign of the improvement in the disease, and not the cause of it.

Dr. Watson uses his terms advisedly. He does not pass them for more than they are worth. Are there not certain acquired physiological conditions or states of system which produce uncontrollable cravings and desires? and are not these cravings instinctive desires of a need felt by such an abnormal system? and supposing them unyielded to, do we not get nervous exhaustion and depression? Is it true that horses fed upon arsenic fall into a bad state of health when its exhibition is discontinued? The facts related of the Styrian and Hungarian peasantry relative to their frequent use of arsenic, and

the evils which almost invariably arise from its discontinuance; the almost universally spread instinct in man to the use of narcotics, stimulants, etc. (such as opium, betel nut, tobacco, coca, with the rest); the growth of the custom into a habit, and the way in which men are impelled to the continuance of that habit, from the fear of the chain of morbid phenomena which follow the cessation of it: do not these run very parallel to the facts we observe from the use and abuse of alcohol? Chossat's experiments upon the effects of starvation on animals would indicate that the nervous tissues undergo remarkably little relative loss compared with the other tissues, in spite of the great quantity of fat they contain, and their almost fluid consistence. This has been held to explain the cause of the curious psychical phenomena preceding death by starvation. Restlessness, delirium and prolonged sleeplessness, are common precursors of death in such cases. Now, it will be said that no analogy can be established between such cases, and the same phenomena following the withdrawal of alcohol. But I am not convinced of that. The whole doctrine of diets, however satisfactorily it may be settled upon a chemical basis, is decidedly not settled upon equally certain physiological data. We have facts in abundance to prove that the chemical value of food is not the physiological one, and that both man and animals live and grow upon substances, and in proportions, perfectly different from what a chemical view would indicate, or conceive possible. When we observe how spirit is meat and drink to a drunkard; how his system affords the proof of an altered and abnormal nutrition; how, in short, he has a special physiology of his own, it seems to me a natural and rational consequence, that the poison to him is no poison, but, on the contrary, a special fuel for his nutrition and development—albeit diseased. Liebig has shown how the chemico-physiological theory of the action of stimulants upon the human system, is in accord with the actual experience of landlords and others, viz: that a far larger amount of food is consumed by the abstainer from alcoholic fluids, than by one who partakes a moderate quantity of them. It seems to be a well ascertained fact, that alcohol economizes the food and tissues, by arresting the amount of secondary metamorphisis. Then we have influence of the custom producing a habit, and its known effects upon the body. Can any habit be suddenly discontinued and broken without some, nay, even a grave effect upon the nervous system?

There seems to me to be no end of evidence to prove that the sudden curtailment or withdrawal of any habit may produce nervous exhaustion; and if so, why, irritability is a necessary concomitant and index of that condition.

In regard to sleep. A drunken sailor knows very well that if he can "sleep it off," it is the best and most natural way of terminating his fit. No doubt the tendency to sleep is a sign of improvement in a case of delirium tremens. Dr. Watson and others urge that sleep is the necessary precursor of improvement; but if I understand the objection raised to this view aright, it amounts to this: that before a patient recovers from delirium tremens, and as a sign and effect of his improvement, he sleeps—very probable; but I am sure the *post*

hoc is often a *propter hoc*, viz: not that he sleeps after he improves, but he improves because he has slept.

Case.—G—— S——, æt. 30; admitted June 8, 1858, from the guard-room, where he had been confined two days. Had been for years a hard drinker. It was stated (but not upon reliable evidence), that prior to enlistment he had been confined for a few months in a lunatic asylum. Upon inquiry, it was found that he had been drinking very hard for some days, and that the debauch terminated about three days prior to his admission into hospital. He was laboring under all the symptoms of unmistakable delirium tremens. After the administration of a purgative and a saline antimonial mixture for twenty-four hours, without any amendment, opium in gr. doses was commenced, and continued until his pupils became somewhat contracted, when it was omitted. He was allowed milk diet, with a basin of soup at bed-time. Forty-eight hours having elapsed in hospital without any sleep, and his delirium, tremor, and symptoms of exhaustion augmenting, it was determined to give him chloroform; for which purpose another assistant surgeon, with myself, alternately sat at his bed-side all night; and he was kept, at intervals, under its influence for eight hours, during the greater part of which time he slept soundly. At the expiration of this period he awoke, and partook of some broth. He appeared far less tremulous, had lost his rapid delirious conversation, but retained his suspicious manner, and was evidently haunted by illusions. After some interval he was again put under the influence of chloroform, and slept for four hours deeply. Awaking, he was still more rational and restored; and after drinking two bottles of porter, he spontaneously fell asleep. In this state he continued six hours, and awoke rational and well. He was retained in the hospital for some period, on account of some dyspeptic symptoms and boils, and with the view to invaliding, on account of his uncontrollable habit of drinking. This man was a dipsomaniac indeed. I think I never beheld features so expressive of a true drunkard in my life. During his fits he seemed to have labored under certain dominating passions, and these had left such impressions upon the facial muscles as to have permanently altered his whole physiognomy.

Now, here we have a case of delirium occurring in a chronic drunkard, who had been deprived of his stimulus for two days. He is admitted into hospital, and does not sleep, his symptoms becoming worse; by the aid of chloroform he slept for six or eight hours—improves—and, by the administration of more chloroform, with the aid of porter, he sleeps again, and is cured.

A—— B——, a mess-sergeant in a line regiment, had always been suspected of drunken habits. One day he absconded with some money, was caught, and confined to the guard-room. Whilst there, he became the subject of delirium tremens, and was brought to hospital, with the history of having endeavored to poison himself with arsenic. This case was a very severe one, for the patient had an ever-present sense of his crime, a fear of punishment, and was, moreover, suffering from all the symptoms of the disease. Numerous means were used (including opium) without any benefit, and a

fatal prognosis was formed of his case. The regimental surgeon administered chloroform by inhalation, and procured artificial sleep for many hours. The man awoke so much improved that its administration was re-commenced, and he was quite restored by its aid.

Here we have the symptoms continuing for a certain period without any improvement, while induced artificial sleep or narcotism was attended with such marked improvement as to have impressed the medical attendant with the belief that his patient owed his life to the chloroform.

It would be tedious to cite other cases proving the same thing. I conclude, from them, that to procure sleep is sound, excellent advice, the good effects of which are borne out by actual experience.

Treatment.—The use of stimulants (alcoholic) in cases of delirium tremens, with the view of removing the exhaustion, allaying the morbid irritation, and procuring sleep, would be looked upon as even more wrongly directed. If the etiology usually propounded be radically and totally erroneous, then we are guilty of adding more poison to an already poisoned blood, to procure what is not needed, and what the presence of alcohol in the system is preventing—sleep.

G—— M——, æt. 45, but gray, and looking much older, was admitted into hospital for some gastric disorder. This man was, and had for years been, a very hard drinker, and his features, particularly the nose, indicated "potations deep." One morning, after he had been in hospital some days, I was called to him. He appeared insensible, was breathing very heavily, the face and lips dark and turgid, the pupils contracted. Whilst examining him he had a convulsion of a tetanic character, the body being arched in the position of opisthotonos. The muscles of the fore-arm were so tense that the radial pulse could not be felt. The heart's impulse was scarcely perceptible. Having thrown a bucket of cold water over the head, I took advantage of a few moments of apparent consciousness to pour a glass of hot brandy and water into his stomach; and he recovered almost immediately, so much so, that the medical officer whose patient he was, could scarcely credit the state in which I found him.

G—— P——, æt. 36, admitted April 14, 1858, from the guard-room, where he had been confined two days. His disease was unequivocably delirium tremens, and no remedial measure seemed to benefit him. He was tremulous, restless, delirious, and did not sleep even with the aid of the fresh administration of opiates. Two bottles of porter were given him at bed-time, and he was observed to smoke during the day some strong tobacco. His hands were so tremulous that the orderly had to hold the pipe in his mouth. By these means he slept, and slept well, and made a good recovery, after having been dosed unavailingly for four days previously to procure that result.

At this moment I have a soldier in hospital who has always drank freely. He has been under treatment upwards of eight days for trivial bronchitis, and symptoms of incipient delirium tremens appearing now, necessitate the use of alcohol and opium with manifest advantage to the man, as regards sleep, appetite, and the disease itself.

These cases illustrate two points : the actual occurrence of delirium tremens after and during the privation of liquor ; and the speedy removal of the symptoms by the reëstablishment of the custom, when other means failed.

I have purposely selected these cases, because they illustrate also the fact, that whilst the men were taking their accustomed stimuli, they continued well, for they were men who never appeared at hospital at all.

I shall not give cases of apparent cure by the administration of opium, as they can be found in any work ; and after all, they are no proof that your patient recovered by the treatment, but, perhaps it will be urged, in spite of it.

The most curious cases are those in which the delirium continues for a long period, but in a modified degree ; the patient sleeping tolerably every night, eating and drinking, and performing all his functions well. It is well to look out here for some complication (particularly renal or hepatic disease), for it is surprising how small an amount of urea circulating in the system may give rise to a persistence of anomalous symptoms. Besides the uræmic, we have a peculiar and difficultly treated form of the disease when jaundice is present, whether arising from fatty degeneration, cirrhosis, or other hepatic disease. These cases, of course, are more frequently fatal ; but I find that, after local depletion, purging, or diuresis, stimulants, more particularly gin, are not only not contra-indicated, but are decidedly useful, more particularly if the patient be an old chronic drunkard.

The most fatal form by far is that in which we have delirium tremens occurring in a person already the subject of typhoid fever—cases by no means uncommon in this climate. Having separated, however, these cases, there will remain many in which a chronic derangement of the nervous system is manifested, the patient sleeping night after night, for longer or shorter intervals, and performing all his functions well.

In a few cases, opium given in full doses at bed-time will secure a deep sleep and manifest improvement. In others, a liberal but regulated allowance of stimulants will prove advantageous, when everything else has been tried in vain. In some, no plan of treatment will succeed, although the patients frequently recover after a long interval, while others lapse into chronic mania, melancholia, or some form of insanity, ending their days in a lunatic asylum.

With reference to that singular phase of our mental life-sleep, Sir Henry Holland advances views, which my observation of the sleep of delirium tremens patients has led me to think perfectly truthful.

He is of opinion that sleep is not a unity of state, but a series and succession of states, ever varying from moment to moment. These variations having every degree of diversity, from complete wakefulness to the most perfect sleep of which we have cognizance. It has long occurred to me that the sleep of drunkards and in delirium tremens differs much from the normal standard of intensity. Every one must have experienced in his own person, when he was anxious

to awake at a certain hour, how he awakes at that time with a feeling that he has not slept well, or at all, although he may be assured that he has slept very soundly.

Sir H. Holland's observations are so good upon sleep and dreaming, in relation to delirium and insanity, that I shall quote his words: "I know of no principle so capable of affording a guide, as that which views all the forms of insanity, including delirium, in their relation to corresponding healthy states of mind, tracing this connection through those intermediate grades, which are so numerously exposed to us in the various conditions of human existence. The diversities of mind in what is accounted its healthy state, the effect of passions in suddenly altering its whole condition, of slighter emotions in gradually changing it, and of other incidents of life in affecting one or more particular faculties; its subjection periodically to sleep, and casually to the states of intoxication, somnambulism, and reverie; its gradual transition in fever from a state where there is consciousness of vague and wandering ideas to the state of perfect delirium; all these furnish so many passages through which we may follow sanity into insanity, and connect the different forms of disordered intellect as well with each other as with the more natural and healthy functions of the mind."

To sum up, I would say, that the first and most frequent form among soldiers of this disease requires rarely indeed opium, particularly at the commencement of the attack; in short, no specific treatment is necessary. In the second variety, I would give it cautiously in moderate doses, after free purgation, provided I did not find my patient improving by rest and tranquility. The opium had better be given at any rate in a full dose before the accustomed hour of sleep. Should it not succeed, my experience would indicate a "hair of the dog that bit him," in the shape of porter or hot brandy and water, spite of what has been urged to the contrary. If the surgeon avoid both opium and stimulants, and his patient goes on badly, depend upon it the chances are in favor of another doctor advising one or both of these noxious agents, with much advantage to the patient, to the no little chagrin of the first medical attendant. Where great irritability of the stomach is present, there is nothing better than a sedative dose of calomel (gr. vj.), with or without opium, and a large enema.

Supposing the physiological effects of opium upon the system to be manifested, without sleep or improvement following, I should omit its use for some hours, give my patient some good broth, flavored with brandy or wine, and induce artificial sleep at night by the aid of chloroform.*

I trust it will be seen that the use of opium is advocated as a measure requiring discrimination and caution, but as a reliable one in many instances.

Of course the complicated forms require that the greatest discretion should be exercised in its administration. Where an embar-

* I perceive that, among many successful cases of mixed delirium tremens and traumatic delirium, treated by this agent, one fatal case has been recently recorded, apparently directly due to the chloroform.

rassed circulation exists, marked by venous congestion of the mucous membranes and duskiness of the face, it is better avoided altogether. Pulmonary emphysema, if extensive, cardiac disease, or, indeed, any thoracic complication, will require, also, great care, if they do not indeed prohibit opium in any form.

I have now made many *post-mortems* upon the bodies of drunkards, and although I cannot endorse the statement of Prof. Hartyl, that he can tell by the scalpel alone the cerebral tissue of a drunkard, yet I think the most common physical change induced by alcohol upon nerve tissue is a remarkable dryness and toughness of texture. This is well seen in the white or fibrous substance. When such an abnormal change exists, your patient is likely to find his way to an asylum; and in some such cases it appeared to me that alcohol was the only agent capable of nourishing such an abnormal cerebrum, and capable of supplying the conditions necessary to the performance of its functions indifferently well.

The action of alcohol upon the system is not by any means well understood. Why does the drunkard preserve his plump, healthy aspect so well, for so many years, with so little food? How are the effects of different liquors to be explained? Why should alcohol, as wine, exhilarate only, while the same amount of gin inebriates? Is the apparent paradox explained by the views held in France, for instance, of the disinebriating effects of ether, which, in some form or other, is present in all wines? How is it that drunkards are so difficultly influenced by chloroform? Is it that their nervous system has been so long accustomed to carbon (which Nunneley has found to be the essential element of all anæsthetics) that it fails to effect them?—*Edinburgh Med. Jour.*, Oct. 1860.

Art. II.—*Death from Anœsthetics.—Chloroform.*

1. *The Nature of Death from the Administration of Anœsthetics, especially Chloroform and Æther, as Observed in Hospitals:* By Charles Kidd, M. D.

[Dr. Kidd's Report from the Physiological Subsection of the British Association for the Advancement of Science, concludes with the following summary, which is copied from the *British Medical Journal*, September 22, 1860:]

1. There is little, if any, benefit in choosing ether in preference to chloroform, as an anæsthetic. In "ether mixtures," the ether is first inhaled pure. Ether is to be especially avoided where we have excessive hæmorrhage or muscular relaxation to fear; though, in such cases as reduction of dislocations, and in midwifery, it has

some points in its favor, but not in the shape of mixture with chloroform.

2. There is less cause of apprehension in administration of anæsthetics in the cases of children and females, and in serious surgical operations, provided the anæsthetic is administered skilfully, than in the cases of men of robust frame, especially if given to intoxicated habits, or the operation be connected with tendinous parts, so often followed by syncope without chloroform.

3. All hospital experience tends to corroborate the view that there is a very remarkable "law of tolerance" of chloroform observable in all bad surgical cases. Once the conjunctiva of the eyelids is insensible, the eyelids closed and normal, anæsthesia kept up with ordinary skill, there is a period of safety, with diminution of respiratory action, established almost like hybernation, but which leaves the heart unaffected. That this, rather than a single instance of death from diseased valves and chloroform; that this, seen in tens of thousands of cases, should encourage the most hopeful views on the diffusion of anæsthetics.

4. Idiosyncrasy has probably very little to do with these accidents, if we omit intoxicated habits, hysteria, tendency to "fits," etc.; so that "trials d'essai," so common hitherto, or placing a patient under several doses of chloroform on previous days to a surgical operation, is a mistake. A patient may have chloroform a hundred times, but die of its effects as surely on the next or hundred and first.

5. There are evidently two modes in which our common anæsthetics may cause death, which require watching; ether, at some distant but uncertain interval during the first twenty-four hours after a surgical operation; but chloroform, like lightning, in an instant, if the inhalation be not stopped. Probably in one-half of the latter cases, at least, the heart, as in asphyxia, is still beating; the action being more like an irritant one on the laryngeal recurrent, and pneumogastric nerves; the other cases are instances of syncope, of convulsive fits, etc.

6. In several cases of death—as in delirium tremens cases, to wit—death occurs because ordinary restoratives do not act, as we have an imperfect reflex and nervous system to work with; but, in all cases of impending death, we are justified in at once having recourse to such means, viz: artificial respiration by pressure, as it acts also on the cavities of the heart; tracheotomy, if we have to fear this form of spasm or asphyxia (the engagement of the double respiratory center of the pneumogastric being very puzzling under chloroform, but rather of the nature of spasm); sudden cold dashing of water, to wake up the respiratory nerves; fresh air fanned on the face, etc.; too much not to be done at first, as the spasm may subside. Acupuncture of the muscles of the neck is also recommended, so as to irritate the spinal accessory, and phrenic, but not the eighth pair of nerves.

7. Hitherto our experience of this spasmodic irritant condition, and our experience of oxygen gas, galvanism, etc., as restoratives, have not been encouraging; these agents being too irritating, and

requiring very exquisite skill to apply them, especially galvanism, which hitherto has only, it is to be feared, done mischief. A better restorative seems to be the injection of warm wine into the rectum, or, as tried in animals poisoned by chloroform, transfusion of any simple saline fluid into the veins, as in the analogous collapse of cholera.

ii. *Death from Chloroform. Inquest. Autopsy.*

A patient named Carrell died at the Northampton Infirmary on Wednesday week from the administration of chloroform. Deceased had been lodging in Commercial street and went to the infirmary on Saturday week, with the determination of having a tumor taken out of his back, which had caused him some little annoyance for several years, and which he had been informed would some day prove fatal if allowed to take its own course. This had been repeatedly pressed upon the deceased by his fellow-workmen at Mr. Mulliner's, coach-builder. Under these impressions the poor man went to the infirmary on Saturday week, where he was dieted until the Wednesday morning, and then taken to the operating room for the purpose of having the tumor extracted. Mr. Gray and Mr. Mash were present, to whom deceased expressed a wish that chloroform might be administered before the operation commenced. Mr. Mash did not think it necessary to use chloroform, and therefore explained to Carrell the nature of the operation, telling him that it would not be very painful or very dangerous, but deceased still persisted in his wish. Mr. Mash therefore consulted Mr. Ashdown (as is usual), and requested that gentleman to examine the deceased, to ascertain if he was able to bear the effects of chloroform. Mr. Ashdown said there was no danger, and accordingly the house surgeon, Mr. Gray, was instructed to administer the anæsthetic, which he did, the chloroform being given on a handkerchief. Its effects were soon visible upon deceased, who duly became insensible, without anything unusual being observed, although he was closely watched. On removing him into a proper position for performing the operation it was observed that his countenance was very much changed. The suspicions of the operators were at once roused, and immediate steps were adopted for bringing the man to his senses again, instead of commencing their surgical operation. Water and other restoratives were resorted to, but all to no purpose. Artificial breathing was then tried, but this too was unavailing, and, after an hour's futile endeavors at restoration, the deceased was reluctantly given up as lost. An inquest was held at the infirmary on Thursday, before Mr. E. P. Hicks, county coroner (acting for Mr. J. Becke), and a respectable jury, on the body. Mary Carrell was the first to be examined, and said the deceased was her husband. He was forty-two years of age. He first perceived the tumor about nine years ago, and often talked of having it taken out. It originated through a blow inflicted by a policeman at Liverpool, when deceased was under the influence of drink. He had only been in Northampton since March last. Messrs. Gray, Mash and Ashdown were also examined, all of whom stated that they had known patients to inhale double the quantity of chlo-

roform that had been administered to deceased without any dangerous effects resulting from its use. Every precaution had been used by them in this as in former cases, and it had been administered to hundreds with perfect success. They could not account for this unusual occurrence, but had no hesitation in saying that deceased had died through the effects of chloroform. A post-mortem examination had been made by Messrs. Mash and Gray, in presence of the medical staff, and it appeared that deceased had been a man giving to drinking habits. His brain, heart, and lungs were very much congested. The jury, without any consultation, returned a verdict, "That deceased's death was caused by chloroform duly administered. They also begged to state that in their opinion the surgeons were entirely free from blame in the matter, as it appeared to them that the proper caution had been taken when administering the chloroform."—*Med. Times and Gazette.*

iii. *Chloroform in the Surgery of the Indian Campaign of* 1857–8: By JOHN BROWN, M. D., Assistant Surgeon, Bengal Medical Service.

[Dr. Brown concludes a series of papers on the Surgery of the Indian Campaign of 1857–8 (in *Ed. Med. Jour.* for October, 1860), with the following remarks on chloroform:]

Chloroform.—This agent was used by me, and every other surgeon of our force, whenever it could be had.

Where chloroform is plentiful, the handkerchief is, probably, the best inhaler; but it wastes not a little of the chloroform. I, from motives of economy, have been in the habit of using a simple inhaler, invented by my friend Dr. Simpson, civil surgeon of Dacca. It is a small tin instrument, perforated with holes, with a layer of sponge at the bottom, and adapted for the mouth and nose, by its margin being surrounded with chamois leather. It is held in the hand.

Some years ago I was struck by the small quantity of chloroform required in operating upon natives, and for some time believed that this susceptibility was a peculiarity of the native, probably from his using less alcohol than an European. I have found, however, as my experience has extended, that Europeans are equally susceptible. In a native, eleven or twelve years old, I have performed lithotomy with certainly not above three drachms of chloroform; and in a case of amputation of the thigh, I have kept up and produced anæsthesia in an European during the operation, with only one and a half drachms of chloroform. This occurred in H. M. 96th Light Infantry; Dr. Home, surgeon of the egiment, operated. The instrument used undoubtedly saved the chloroform; but there exists in India a facility in being anæsthetized, which should be borne in mind, otherwise dangerous consequences might ensue, and which is, I am constrained to think, owing to the depressing influence of climate, and the drowsy state which all get into, except in the cold season, and which is probably owing to the imperfect elimination of carbon.

Art. III.—*Scrofulous Diseases of the External Lymphatic Glands—Their Nature, Variety, and Treatment.* By P. C. Price, Esq., Surgeon to the Great Northern Hospital, the Metropolitan Infirmary for Scrofulous Children at Margate, etc.

General Treatment. In all diseases in which complication exists, prescribed forms of treatment must be more or less modified; and this observation is particularly relevant as regards the therapeutical management of this special glandular affection. It has been stated that, in all probability, in the majority of cases in which this derangement occurs, it obtains as a result of certain causes which have an extra lymphatic origin; and, therefore, before any hopeful treatment can be adopted, it is highly advisable that they should, if possible, be recognized. What these causes may be, it is often difficult to determine; but frequently a decided departure from health will point to some impairment of the digestive, secretive, or absorptive functions. It must be allowed, I think, that this kind of glandular affection is generally met with in each of the divisions which so commonly admit the development of strumous disease, viz.: the sanguine, phlegmatic, lymphatic; so that if in certain instances it appears to be but slightly, if at all, associated with well developed scrofula, still it must be ordinarily considered as in some way or other connected with this peculiar diathesis. Believing that the simpler forms of the affection, when appearing in the external glands, although not appreciable in those of the mesentry and other internal structures, are dependent on systemic causes, I usually commence the treatment by regulating the proper action of the various viscera. This is best accomplished when the *primæ viæ* are at fault, by unloading the bowels, and maintaining their proper action. Constipation is a very frequent accompaniment of glandular swellings, and it is astonishing to see how an alterative course of medicines is attended with almost immediate good effect, provided the disease has not been too long established. Mr. Abernethy was in the habit of treating these cases with calomel; but with what special views he used this powerful medicine does not clearly appear even from his own description. Although as a rule I do not resort to the administration of calomel in large and continuous doses, still there is no doubt that mild mercurial preparations are often of value, as the liver is generally torpid in its functions. For reasons already stated, I prefer small and repeated exhibitions of hydrargyrum cum cretâ in combination with compound rhubarb powder, or some alterative. To improve the tone of the digestive and assimilative powers is all important; for, as long as these remain neglected, the proper action of the various organs cannot take place. Mineral acids in combination with bark, quinine and iron are the most available adjuncts for restoring a healthy tone. For the more immediate treatment—reduction—of the disease, iodine, bromine and cod-liver oil have, during the past quarter of a century, taken the first rank; and, if cure is to be obtained, perhaps no specific remedies are more valuable. Iodine and bromine may be exhibited in one or more of the forms already

described, or in any of those which will meet with further consideration. When speaking of the action of iodine on indurated glands from vascular derangement, it was stated that the administration of the drug was not always so rapid or certain in its effects as could be wished for; and that not unfrequently disappointment followed even its most pertinacious use. This remark is even more applicable to the treatment by iodine of this form of glandular mischief than the last described; for considerable experience has proved to me that even its very extended exhibition is oftentimes attended with failure. Various reasons may be assigned for this want of success; but, whatever may be the correct one, it is more than probable that in the majority of cases of confirmed mischief a hidden influence is at fault in keeping up the irritation, over which iodine has little or no control. In one instance, in particular, in which the constitution was satuarated with iodine, little or no amendment or reduction in the gland swellings resulted. It may be asked—this important agent being oftentimes incapable of inducing resolution, or even arresting the further progress of the disease—what means should be adopted to procure amendment and cure? I fear even the most sanguine and experienced practitioner will readily admit that many cases, in which this form of glandular affection exists, are not really amenable to the treatment of any fixed medicinal means, and that the good to be expected is chiefly derivable from change of climate, and from the removal of those unwholessme influences to which the subject of the affection may be exposed. Rapid amendment in such cases, occurring especially among the poor, by this plan of rational treatment is frequently most marked. Much has been said and written on the direct advantage of sea-air and sea-bathing; and, while many excellent writers have been far too laudatory in their recommendation of these means, others have not sufficiently noticed the benefits which their employment often affords. Ample observation among both private and hospital patients at Margate, has assured me that immediate advantage is very frequently to be gained by a sea-side residence, and a free recourse to sea-bathing, provided it be not contra-indicated by reason of certain complications of constitution and disease. If, with these means, treatment by iodine, cod-liver oil and tonics is added, I believe marked amendment and cure will oftentimes be obtained when but little hope was entertained from either ere change of climate was obtained. But, although a residence by the sea is often advantageous in the management of cases dependent on this kind of glandular disturbance, still it often happens that a less bracing and inland locality is more suitable. Individual cases must be managed according to circumstances; but, as a rule, I believe a change of climate and residence is often expedient, and even necessary, when medicinal means solely employed have failed. It has already been hinted that this form of glandular affection, when limited to the external lymphatic ganglia, after arriving at a certain stage and becoming permanent, is frequently unaccompanied with any strongly marked evidences of disturbance of the general health. In fact, it is not rare to see individual cases in which not the slightest effect is produced on the system. I have lately been interested in a

case of this description, in which the glandular enlargement, especially of the cervical ganglia, has existed for years, and no perceptible effect has been produced on the constitution and vigor of the patient. The case has been under notice for a considerable period, and a large amount of iodine has been taken without having exercised any or little effect on the glandular system. This form of hypertrophy is more permanent when once established than other chronic enlargements; and frequently no perceptible changes are induced by the variations of seasons and temperatures. But, although this condition of hypertrophy is oftentimes comparatively harmless, still it is apt to progress to such an extent as to cause not only inconvenience but danger from mechanical causes. Moreover, fear is to be entertained that any subsequent complication may give rise to still more important lesions; for it has been noticed that more marked scrofulous and true tuberculous mischief is apt to arise, especially if the strumous diathesis be strongly portrayed; and it is on these grounds, if not on others, that such medicinal and general treatment should be adopted as is most likely not only to cure or amend the affection, but to prevent the occurrence of more distressing and dangerous complications.

Local Treatment.—Although local treatment by means of certain applications has been highly extolled by many observant practitioners, still, I believe that a due consideration of the pathological changes that have induced an alteration in the condition of the affected glandular apparatus will at once show that much advantage is not, as a rule, to be hoped for from mere mechanical and therapeutical applications. When such means are, however, employed, either solely or with internally administered medicines, it is customary to adopt the use of those agents which have already been and will presently be more fully considered, viz: blistering; paintings with iodine, bromine, and their salts in the forms of tinctures, etc.; frictions with various powders, ointments, and oils; and the constant application of various solutions containing mineral salts, etc. But much harm instead of good may arise by a too pertinacious use of one or more of these various means. I have not unfrequently seen cuticular and cellular mischief occasioned by a too persistent application of iodine; while little or no appreciable advantage has been derived, so far as diminution in the glandular derangement was concerned. When enlargement is dependent on plastic material, doubtless iodine, etc., topically applied, is of some value; but, judging from my own experience, I cannot recommend, with any great hope of success, the treatment of this special form of glandular hypertrophy by local discutients, absorptives, etc. Sometimes diminution in size of implicated glands of this nature does ensue from repeated and long continued topical applications of iodine, mercury, etc.; but then, I believe, the general system has become more or less affected through absorption, as I have seen verified on more than one occasion.

Direct surgical treatment is, however, sometimes needed, as it may become expedient to remove one or more hypertrophied glands, which by reason of accumulation in size, occasion not only deformity and

inconvenience, but positive danger. Caustics and the knife are the two chief means in the hands of the surgeon to effect reduction or absolute removal. The application of caustics for such purpose has met with some consideration in previous pages, and I have only to reïterate what was then stated. Although a resort to caustics is in general, I consider, not only erroneous, but decidedly bad practice, still there are occasions when no other agent will prove of like advantage. The way in which caustics act when employed as a means of destruction, is by causing inflammation and suppuration of the tissues with which they are in contact. Such changes are more or less rapidly induced, in proportion to the agent employed; while the disturbance generated is in relation to the extent of local destruction and constitutional temperament. I have frequently known very serious results follow this plan of treatment, and I have rarely put it in practice for the removal of this form of glandular mischief.

When it is really expedient and necessary to take away one or more hyperthrophied glands, the knife will be found the most certain, least painful, and efficient means at the disposal of the practical surgeon. Care must, however, be taken to select only such cases as are well marked for operative interference. When the gland-tumors are situated in close relation to large arterial and venous trunks and nerves, extra judgment is required in advising and performing an operation; for experience has fully shown that danger is apt to arise therefrom. An example of injudicious interference has been current since the days of Celsus; and there are few surgeons who cannot recall to recollection similar instances of bad practice. When circumstances are favorable, and removal well and carefully executed, success will in general attend direct and judicious surgical interference; for a slight scar will by the majority of patients, especially by those who take pride in the advantages of personal appearance, be deemed of less moment than an unsightly and irreducible gland swelling.—*Brit. Med. Jour.*

ART. IV.—*Thermo-Therapeia* (*The Heat-Cure*); *or, the Treament of Disease by Immersion of the Body in Heated Air.* By ERASMUS WILSON, F. R. S. Read at the twenty-eighth annual meeting of the British Medical Association, held in Torquay, August 1st, 2d and 3d, 1860.

FOR a knowledge of thermo-therapeia, medical science is indebted to Mr. Urquhart.

Thermo-therapeia is the application of atmospheric air at a high

temperature to the surface of the body, for the relief of pain and disease. The poets use the expression, "bathed in light;" if we adopt the same language in reference to air, we may style the process a bathing in hot air, or a hot-air bath; but in no other sense does the term "bath" apply to its use.

Mr. Urquhart became acquainted with the construction and uses of the thermæ in the course of his travels in various parts of the world, and found it almost universal in cold and temperate climates, but absent in the tropics. By the people among whom it is found, the thermæ is employed as a luxury and a religion, the religion of physical purity, but not as a remedy against disease; it was left to Mr. Urquhart to apply highly heated air as a medicine for the relief of pain and disease, and with the most signal benefit.

The capacity of the human body for bearing dry air at a very high temperature is a matter of common observation; we see it in the daily occupations of copper-smelters, steel-pourers, the stokers of steam-engines and gas-ovens, of glass-blowers, porcelain-burners, and in a variety of manufactures and trades. And in a well ventilated thermæ, a temperature of 130° and thence upwards to the temperature of, and above boiling water, is not only bearable, but absolutely soothing and agreeable.

If we inquire into the medical history of the men employed in the fiery occupations to which I have just referred, we shall find that they enjoy a state of health and longevity above the average of other men. Look upon them, and you perceive them to be strong, well built, muscular men, with that exact proportion of integument and muscle which denotes the nearest approach to the standard of manly beauty and health. The perspiration is streaming over the surface of their naked skin; they aliment the flowing tide, from time to time, with deep draughts of cold water or thin gruel; they frequently pursue their labors in open sheds exposed to a thorough draft of cold air; or, after enduring extreme heat for awhile, they emerge from the atmosphere of the furnace into the open air, naked as they were born, to cool their bodies in the refreshing breath of a north or an east wind. Our over-clothed and pampered skin creeps and shivers in sympathy with the seeming risk and danger of their exposure. But ask these men if they ever take cold, and they will tell you that they do not know the meaning of the word.

Our every-day observation, therefore, teaches us that the human body can bear and labor in high temperatures, not only without inconvenience or distress, not only without the danger of chill from subsequent exposure to cold air, but, on the contrary, with an increase of health, of strength and of condition; in other words, that the body derives from this process those special advantages of condition and power of endurance which are commonly sought for in the process of "training;" in truth, are acquired in no other way than by a systematic training. What a race, marvellous for power and strength and endurance, might not Britons become, exclaimed Mr. Urquhart, on a recent occasion, if this kind of training were universal—if the thermæ were to become an institution of common life?

The capabilities of the thermæ for the purpose of training have already been recognized and applied. The readers of the *Field* are prepared to see the barbarous, the injurious, the exhausting process of training by the old method entirely discarded, and to behold the simpler, more natural, and more perfect operations of the thermæ take its place. Not only is the thermal process of training the most advantageous for human beings, but it is also applicable, and has been applied with the most successful results, to animals.

I will endeavor to retrace my own experience, on my first introduction to the thermæ, now sometime back. It was the winter time, the season bitterly cold; my inception as a "companion of the bath" took place in the private thermæ of my esteemed friend, Mr. George Witt, of Princes Terrace, Hyde Park. As an example of simplicity of construction, Mr. Witt's thermæ may be usefully taken as an illustration. He had at the back of his house a room twenty feet long by ten feet in breadth, and twelve feet high, with a window looking out upon a lead-flat such as is common in London houses. To convert this room into a thermæ he divided it into two compartments, by means of a wall which crossed it at about one-third from its further end. He had, thus, two apartments—an outer one, the cooling room or *frigidarium* of the Roman thermæ, and and an inner one, entered by two small doors (inner and outer) in the partition wall, the *caldarium*, *calidarium* or *sudatorium*. To secure the detention of heat in the calidarium, a lath and plaster lining was placed inside and at the distance of a few inches from the wall, and the space filled in with sawdust, and the floor was paved with earthen tiles bedded on concrete. Outside the room, on the lead-flat, an opening was cut through the wall for the construction of a common furnace; the furnace, encased with brickwork, entered the caladarium, and its flue was carried around the apartment close to the floor. Having completed the circuit of the room, it was made to ascend a few feet, then carried transversely across the end of the room above the furnace, and subsequently permitted to escape at the corner of the ceiling into an outside chimney. The entire length of the flue was thirty-five feet, and as it was propped from the floor by means of a brick placed at short distances, and a space left between it and the wall, the whole end of its external surface was free to radiate its heat in all directions, and communicate its temperature to the air of the apartment. A thick plate of glass let into the outside wall gave light to the room, and four holes, two below and two above, piercing the wall and furnished with the moveable plugs, afforded sufficient ventilation. Add to this description a wooden seat supported on the flue, a platform, which afforded additional sitting room over the masonry of the furnace, and a wooden couch, the *duretum* of the Romans, and the calidarium is complete.

Having left my garments in a portion of the outer apartment which served as a *vestiarium*, and girt around the loins with a *cummerbund*, the kilt of oriental nations, I entered the calidarium: the temperature was delicious, such a contrast with the exterior world. The wind and snow were raging without, while here was a paradise of 135° of Fahrenheit. Within this hallowed nook anxiety, and care

and fatigue, like the burden of Bunyan's Christian, seemed to fall from my shoulders ; I stretched forth my limbs in peace and enjoyment ; the brain seemed to think more lightly and pleasantly, and my ideas flowed brightly and calmly. I longed to compare my sensations with those around me, for I was not alone ; that day I was the seventh or ninth "companion of the bath," I scarcely remember which ; but I called to mind that the greatest wisdom often lies in silence, and I yielded the pleasure of speaking for the greater pleasure of listening.

My friend, Mr. Witt, in the course of a few minutes was streaming with perspiration, which ran down his face in rills, and dripped from his elbows and finger-ends in continuous drops, while my skin was as yet dry. He explained to me that this facility of perspiration distinguished the practised bather from the unpractised, the educated from the uneducated skin ; and he reminded me by that remark, how little opportunity the skin has, in this climate, of performing its normal function thoroughly, and therefore healthily, and that the functions of the skin in the majority of the inhabitants of this island is a dormant function, and its purpose as an emunctory to the system almost entirely undeveloped.

I was struck also with the rich and healthy complexion of his skin; it took its hues from the free circulation of the pure arterial stream through the capillary plexus of the derma ; as he drew his fingers forcibly across his chest, the white traces left by their pressure were instantly replaced by the glowing vermilion of the arterial flood. There were no gorged capillaries in that skin ; no venous transformation in that cutaneous plexus ; no deposits of unhealthy coloring matter either in the cuticle or in the tissues beneath ; no pallor ; no excess and no deficiency of fat ; no choked pores ; no wrinkles from loss of elasticity and contractility of the fibrous and muscular structures of the corium ; no abnormal or deficient sensibility of the nerves ; all was, as nature made it, perfect and beautiful. I looked for the first time in my life on a really healthy skin.

How very curious and striking was the difference between my friend's skin and that of every one present ; one gentleman, a finely built, handsome man, with are markably capacious chest, had too great a preponderance of adipose tissue, while the hue of the skin in an oblique light was a bright golden yellow. In another, the muddy tinge of the skin discovered the impure and muddy condition of the blood. The habitual use of the thermæ removes these discolorations, these indications of imperfect elimination, by drainage through the perspiratory system, and while it gives beauty to the skin, bestows health on the entire economy.

Seeing the perspiration flowing in such wonderful abundance from my friend's skin, and observing that he encouraged its quantity by taking frequent draughts of cold water ; and led into the same channel of thought by the state of my own skin, which was now perspiring actively, I ventured to remark that we were literally supplying the means of washing the body from our inward selves. "It has always been a theme of wonder, in the exploration of the thermæ of the Romans, as also in the examination of the writings of different trans-

lators and commentators," replied my friend, "how the Romans could have obtained a quantity of water sufficient to supply all their baths and the vast number of bathers who availed themselves of their use; but it is evident, as you see, that a very small quantity of water for each person to rinse the body, after ablution in its own perspiration, would be all that is needful."

Another inference from these remarks is self-evident, but not the less important. Among our various medical remedies for procuring diaphoresis, a list which embraces antimony, guaicum and ipecacuanha, hot air must take a prominent place. But how different its mode of action! If we ourselves were the subjects of treatment, how infinitely more agreeable should we find it, to convey ourselves bodily into the pleasant and agreeable temperature of the calidarium, than to consign the above nauseating medicines to our stomach. Moreover, the latter may fail; the former cannot fail. The former we can regulate to a nicety; we can procure as much perspiration as we will, we can suspend it when we will; but the antimonial may not do its duty sufficiently, while we dare not give more. The antimonial may be hours before it responds, may need encouragement, assistance; the calidarium breaks down all restraints in a few minutes, and needs no second help.

After a free perspiration of half an hour's duration I was anointed with soap, and had a rub down with a wisp of white fibre called *lyf*, the fibre of one of the palm trees commonly used in the east for the purpose to which it was now being applied. To the friction with soap succeeded a shower of warm water, then a douche of cold water, after which I was made to sit still for some minutes until the warmth of the skin was restored. In Mr. Witt's thermæ the ablutory process is performed in the calidarium, but where space permits, a closet or small apartment is devoted to the purpose, and constitutes the *lavatorium*. Not unfrequently, the lavatorium is warmed by a part of the flue of the calidarium, and then performs the double office of lavatorium and *tepidarium*. Where a proper tepidarium, having a temperature of 98° exists, it supplies an atmosphere which is intermediate in warmth between the frigidarium and calidarium, and serves as a transition between the two; preparing the skin, by a gentle warmth, before its exposure to the higher temperature on the one hand, and mitigating the extreme of depression of temperature, on quitting the calidarium, on the other.

To invalids, the transitional temperature of the tepidarium is of importance, and suggests one of the precautions necessary to be taken in employing the thermæ as a medicine for the treatment of disease; but where the thermæ is used for the purpose of cleanliness, maintenance of existing health, training or luxury, then the absence of the tepidarium is of little consequence.

From the calidarium I passed therefore to the frigidarium, on this occasion, mid-winter, and a piercingly cold snowy day, truly deserving its name. I was then *cloaked* in a sheet taken from one of the pigeon-holes of the *columbarium* standing in the corner of the room, my *cumberbund* was allowed to drop on the floor, and I was made to recline upon a cane couch immediately under the open window.

How cool and pleasant were the puffs of wind that played over my face and limbs; how different their impression on my skin to what they had been an hour before. I needed not the assurance of my friend that there was no fear of catarrh or bronchitis; my own feelings told me that I could resist any amount of cold, and I was obliged to suppress a longing to walk out upon the leads with no other covering than my sheet, into the midst of the sleet and wind; had the lead-flat been a terrace or a lawn I could not have resisted the temptation.

To a person prone to take cold on exposure to slight draughts of air, this instinct of defiance of cold seemed very strange—one of the phenomena of the thermæ. I was reminded how the inhabitants of countries colder than Great Britain, for example, Tierra del Fuego, go about naked; and I also called to remembrance that our forefathers of England and Ireland, as well as the "naked savages" of Scotland, were equally without covering. The climate is still the same; the difference between the people of those times and these is therefore clearly one of habit. The face, which is always uncovered and exposed to every alternation of temperature, still represents our original state of nakedness and endurance, but the rest of the body is swathed in the close folds of a heating clothing and remains forever etiolated and unnaturally sensitive to painful impressions, while its appreciation of agreeable impressions is proportionately destroyed. I lately saw a child, four years and a half old, who had been brought up in the constant use of the thermæ and who had never worn clothes. He is a sturdy, healthy little fellow, graceful in his figure and movements, and has the independence of deportment of an Indian chieftain. Blows and outward injuries do not affect him painfully as they would other children; and being met one day playing naked in the snow, he was asked whether he was cold: "cold?" said the boy, touching with his finger his chest and cheek, "*yes, I think I am cold.*" It required that he should pass his finger over his body as he would have done over a marble statue to become aware that the surface of his skin was, in external sensation, cold.

"How is it," inquired the Rev. David Laing, "that in my visits among the very poor, I so rarely meet with consumption or serious consequences resulting from exposure to cold?" I could not answer that question then, but *now*, I should have no hesitation in replying that the exposure of the poor to cold air gave endurance to their skin and enabled them to resist the influence and the effects of cold. "In my early life," said Miss Jane Porter, one day when we were conversing on a kindred subject, "in my early life I was extremely sensitive to the impression of cold; if any part of my skin, however small, beyond the limits of my face, were exposed only for a few minutes to a draught of cold air, I was immediately seized with catarrh. I longed that my skin should become *all face*, for then it would have had the power to resist the cold." How suggestive these observations are when they are ranged side by side with the remarkable phenomena which are presented to us in following out the operations of the thermæ.

After a while I exchanged the horizontal position on the couch by

the open window, to a sitting posture ; the sheet was thrown off from my back and limbs ; the moisture of the surface was dried up, no wiping, excepting of the head and face was practised or required, the skin felt smooth and warm, and I was permitted to dress, but with the injunction that I was to dress leisurely, lest the perspiration, which had ceased, should again be excited. It is worthy of notice, that great attention is paid to the temperature of the skin during the curriculum of the thermæ ; after the cold douche, we return to the calidarium to recover any waste of heat ; and in the after cooling of the body in the frigidarium, the whole of the moisture must be dried off the skin, and perspiration must be wholly suppressed, as indicated by a peculiar smoothness and polish of the surface, before we are qualified to resume our dress. All clamminess of the skin must have ceased entirely before we resort again to our usual coverings.

Sometimes the flue of the furnace, instead of being admitted into the calidarium, as in Mr. Witt's thermæ, is made to travel under the pavement of the room, making a series of traverses from side to side and representing the *hypocaustum* of the Romans. In this arrangement, the floor is frequently excessively hot, too hot to be trodden by naked feet, and the use of wooden shoes becomes necessary. The thermæ of Mr. Stewart Erskine Rolland, one of our highest authorities on the Bath after Mr. Urquhart, is constructed in this manner. I had recently the gratification of testing the merits of Mr. Rolland's thermæ ; the temperature was 160° ; the air, being perfectly dry, did not feel otherwise than pleasantly warm ; the wooden couches, arranged around the room and covered with soft Turkish sheets, afforded most agreeable reclining and lounging places, and upon these we stretched ourselves at ease while the perspiration burst forth from its seven millions of pores. I then went into a small closet, wherein the temperature was ten degrees higher, the sensible heat being very much increased above that point by the introduction of vapor ; and from the hot closet I stepped into the lavatorium, and, after inunction with soap, was greeted with a douche of alternate hot and cold water for the space of some minutes. The sensation of this alternate douche is beyond everything delicious.

Mr. Rolland, like Mr. Uurquhart, is an Eastern traveler ; his frigidarium is a divan furnished, with reclining couches of the most approved oriental character ; door and windows were open, to gain as strong a current of air as possible ; and here, in the most graceful, because the most natural attitudes of quiescent repose, we sip our sherbet and cool our glowing limbs. Struggler in the sun and dust of hot July, how you envy our enjoyment ! Toiler in the mud, the slush, the biting winds and blinding sleet of the wintry world without, what would you not give to change places with us ?

But quitting the construction and appliances of the thermæ, the mechanical means, let us inquire, firstly : what are its physiological properties ? secondly, what are its medical properties ? With its psychological and moral properties we have at present nothing to do ; albeit it would not call for much argument to prove that both

are elevated and exalted. All agree that the brain never works more pleasantly than in the thermæ ; the mind seems cleared of its physical impurities ; the godhood of our nature is elicited by the body's purity.

Physiologically we find that a grateful feeling of warmth pervades the entire skin, whatever its previous condition of temperature, of dryness, or moisture ; secondly, the skin appears to soften, to become ductile and pliant ; thirdly, minute drops of water, gradually becoming larger, stand upon the skin like crystal beads. "I shall tell my friends," said a gentleman to a 'companion of the bath,' a doctor of divinity who was noting this phenomenon, "that I beheld a clergyman of the Church of England, while sitting in the thermæ, piously counting his beads." And soon, these limpid beads, swollen beyond their bound, trickle downwards to the earth. The skin, likewise, loses its accustomed paleness, and becomes more or less reddened ; it is clear that the blood is sent more actively to the surface and in larger quantities. The skin of the face and hands is more suffused than the rest of the body and the conjunctivæ are also reddened.

It is evident that the high temperature of the atmosphere of the thermæ is a stimulant of the circulation, of the heart's action in fact; the pulse becomes frequent and after a time the heart also is felt to be quickened ; sometimes a sense of oppression, of giddiness, of faintness, and sometimes, though rarely, of sickness occurs, and the noviciate is constrained to seek the fresh air of the frigidarium. These effects of the thermæ are perfectly natural, perfectly physiological, are exactly what would be predicted by any physiologist to whom the problem was submitted : What would be the effect upon the animal system of an excessively heated temperature? His ready answer would be : the pulse will be accelerated, the heart's action rapid, and according to the degree of temperature or the constitutional susceptibility of the individual, there will be more or less distress of the nervous system. But the same answer applies to a heated state of the body, however induced, whether by extreme heat, as in the Indian camp, during the late campaign, where the thermometer in the tents often reached one hundred and forty degrees of Fahrenheit ; whether in a sultry day in our own climate ; whether in hot rooms ; under hot bed-clothes ; from active exercise; or from the use of diaphoretic medicines.

These remarks are intended to show that the thermæ is not to be trifled with; it is a medicine—a great and a powerful medicine; and can only be applied with safety and advantage by those whose avocation is to study the physiology of man and to treat his diseases. In the judicious hands of the essentially practical medical men of Britain I look to see thermo-therapeia occupy an useful and a dignified place ; and I trust that in a short time, in every small village and hamlet in England, wherever a medical man is found there also will be found a British thermæ. The medical man will be too happy to make himself the subject of his first experiments, to apprentice himself to an art where all is enjoyment ; to learn by his own impressions how far he may push the remedy in the treatment of his

patient, and how often he may apply it. In his own person he will reap a rich reward; after the cares and anxieties of the day his thermæ will give him rest and renewed life; his moral atmosphere will be brightened, his spirits revived, his power and usefulness enhanced.

It is one of the first, as it is an hourly matter of duty to the medical man to reduce to practice the simple problem: *Given a powerful remedy which may be employed in excess, how shall it be regulated?* It matters not whether the remedy be an aperient or a saline medicine, brandy, tobacco, laudanum, diet, or hot air. It is the business of the medical man to effect this regulation, and he is equal to the task. If the calidarium be too hot cool it; if the patient be too susceptible let him retire to the tepidarium; if he cannot support so high a temperature for one hour, let him abide in it for only half or a quarter of the time. I cannot conceive any difficulty on this head, and I cannot realize to my mind any constitution or age repugnant to the remedy if properly and judiciously applied. I am not to be told that because the remedy stimulates the heart it is not to be used. Every remedy that produces perspiration stimulates the heart, and it is one of the virtues of the hot air that it does stimulate the heart. Nor am I prepared to admit that in cases of disease of the heart the thermæ would be inapplicable. I believe just the contrary, that many diseases of the heart may be cured by a judicious use of the thermæ; and in the very worst cases it would prove to be the best remedy that could be employed.

The natural remedy for accelerated action of the heart particularly when excessive, is the open air; a few chestfuls of air calms the heart's action and all uneasiness passes away; but to prevent the possibility of this inconvenience, the thermal chamber should be sufficiently ventilated. There should be an abundance of oxygen present in the atmosphere, and a constant current of fresh unrespired air should be secured. In this respect a large and lofty calidarium has an advantage over a smaller one; but the small calidarium may be rendered equally fresh, by making several perforations through the wall, and adapting the means of opening or closing them according to circumstances.

The essence of the quality of a high temperature of air is its dryness. While the human body can support a temperature of 300° and 400° of Fahrenheit in dry air, hot vapor is scalding at 120°, and water boils at 212°. A gentleman whom I had frequently the pleasure of meeting at Mr. Witt's wrote to his friend, in corroboration of the account which had been given him of the heat of the thermæ: "I have been at Mr. Witt's bath; all that he told us is true. I cooked a mutton chop on my knee! and in eating it afterwards, the only inconvenince that I experienced, was in the matter of the bread; it became toast before I could get it to my mouth!" A dash of water thrown into the thermal chamber is instantly dissipated in vapor, but the temperature, although actually reduced, becomes sensibly hotter.

The expression "dry air" must necessarily be held to be relative; the air cannot be perfectly dry in an atmosphere traversed with a

continuous current of air from without. Each time that the door of the thermal chair is opened a rush inwards of cold and moist air takes place ; and the body of the entering man gives off its moisture so rapidly, that in a short time, if there be several inmates, the moisture of the air must be considerable. It has been suggested that the highly heated air inhaled into the lungs must prove an irritant to those organs. I have seen no such effect and can hardly believe it possible ; the lungs and fauces are so abundantly supplied with moisture that the air must lose all its dryness before it can reach the bronchial tubes, and I should imagine even the glottis. But I must confess to have had no experience in the application of the thermæ to susceptible or diseased lungs. If I might predicate its influence, I should declare in favor of its special adaptation to diseased states of those organs, on account of its powerful derivative action on the skin. If consumption is to be cured the thermæ is the remedy from which I should anticipate the best chance of success.

But supposing that an instance does occur in which dry air properly ventilated, having a temperature of 130° and upwards, does produce irritation of the lungs ; how easy to introduce a watering pot and dash a shower through the air. Surely no man could be so unreasonable as to suggest the abandonment of an useful and powerful remedy, because in one case, or in one class of diseases, it was inapplicable. My own experience, however, points to the heart and increased activity of circulation as the real origin of any inconveniences that may be felt in the thermæ ; that this increase of circulation may act secondarily upon the lungs, as well as upon the brain and nervous system, if allowed to continue, is, of course, perfectly possible.

But these are matters of detail—not of principle ; if the principle be good, be worthy of adoption, experience will soon teach us to adjust it to circumstances, to regulate its application. It is for this we are philosophers of medicine ; and in the present instance we have to determine the plus or the minus of temperature ; the plus or the minus of ventilation ; the minus or the plus of watery vapor. If we require high temperatures to act upon the blood of cutaneous circulation, to seek out and eliminate hidden and deep-seated morbid changes, it is clear that we must have a minimum of moisture in the atmosphere.

I must again advert to the modifying influences which regulate the temperature. On entering the thermal chamber, the skin feels cold to the touch ; it gradually becomes warm, but its warmth never reaches a high altitude ; it is moderated by the evaporation from the surface, and kept at a genial heat. On the first few occasions the perspiration does not so readily obey the calls as it does subsequently; the skin requires practice to bring it into a perfectly respondent state, to cast off the torpor of a life-time and to perform its function healthily. Hence the feeelings of uneasiness which occassionally oppress the noviciate on his first visits to the thermæ gradually diminish and at last finally cease. But when they do cease he has the satisfaction of knowing that his whole organization has become

strengthened, that the weak heart has become a strong heart, and that his active vitality is augmented.

The *first* physiological effects of the thermæ is therefore, *to perfect the perspiratory or eliminant function of the skin;* to give us, in fact, an organic skin, instead of the mere threadbare, dirty, unwholesome, and almost useless garment of the body that goes by that name. The *second* physiological effect is to make the skin more apt for the performance of a highly important function, *the imbibition of oxygen, a function that renders the skin a breathing organ.* The *third* physiological effect of the thermæ is *to regulate the nervous capabilities of the skin;* to enable it to feel truly and not mendaciously; to distinguish between real and unreal sensation. A *fourth* physiological effect of the thermæ is to promote those changes in the structure of the skin which result in *its perfection as a healthy organ.*

It is common to associate the idea of profuse perspiration with weakness, and to imagine that the effect of abundant perspiration must be the lowering of the system. This idea probably takes its origin in the observation of the exhausting sweatings of fever, of consumption, or debility from whatever cause induced; but it has no abiding place among the true phenomena of the thermæ. The perspiration of the thermæ is a tonic emunctory process of the skin, acting under and supported and kept up by the stimulus of heat. The body feels lighter after these sweatings, as though it had lost something which oppressed it; which is the fact. It represents those other processes of the animal economy, under the influence of which effete and often irritant matter is conveyed out of the system. Mr. Urquhart, Mr. Rolland, and Mr. Witt, pass frequently many consecutive hours in the thermæ perspiring a greater part of the time, and renewing the lost moisture of their bodies by the imbibition of copious draughts of water.

In reference to the second physiological effect, I apprehend that there can be no doubt that, in its healthy condition and exposed to the atmosphere, the law of endosmosis which rules over the destinies of the whole of nature, acts upon the human skin as well as upon all other created things, both organic and inorganic. But while I am convinced of the imbibition of oxygen by the skin in a state of health, I am also aware that that action must be immeasurably weakened in the state in which we commonly find it, partially atrophied, excluded from the light and air, and prostrated in tone and power by hot and relaxing coverings. In cutaneous disease the oxygen of the atmosphere plays a mischeivous and vexatious part, and if it be susceptible of absorption in disease it must also be capable of traversing the cutaneous tissues in the state of health. Endosmosis operates its results on the human body by a combined electrical and vital agency, and a healthy electrical condition of the skin is amongst its most important properties.

In its function of a breathing organ and a transmitter of oxygen, the blood is the principal agent engaged, and the degree of absorption of oxygen will be determined by the freedom and abundance of circulation through the capillaries of the skin. Now, one of the first effects of a high thermal temperature is to augment the circu-

lation of arterial blood through the skin, to carry the arterial stream into capillaries that have long been inactive, and to bring the circulating blood nearer to the periphery and nearer to the oxygenizing element. Therefore the use of the thermæ must tend directly to the oxygenization of the blood, and to the perfection of those nutritive and vital processes that are due to the appropriation of oxygen. The lungs, which are the great oxydizers of the blood, are in structure very little different from the skin, the differences between them being more those of position than organization; the mucous membrane of the lungs is an inverted skin while the skin may be regarded as an everted lung.

The third physiological effect of a thermal temperature, namely, the restoration of the skin to its normal sensibility, is illustrated remarkably in the example of the little boy brought up in the state of nudity and in the constant use of the thermæ; *his skin was all face.* In ourselves, from the habitual use of clothing from our earliest infancy to one part of the body and its absence from another, we are enabled to contrast the power of resistance and endurance of the face with the opposite qualities of the skin of the rest of the body. We are accustomed to regard the skin of the covered parts of the body as more sensitive than the skin of the face; but if we look closely at the matter we shall find that the sensitiveness only applies to its weakness. It is more sensitive to pain and suffering; but less sensitive to ordinary healthy and appreciative sensations; while the skin of the face feels more truly and is less easily excited by painful impressions. When I was invited by Mr. Rolland to enter his hot closet, to pass from an atmosphere of dry air of a temperature of 160°, into one of moist air at 170°, I stepped back for an instant with a feeling of scalding; but it was not the weak and sensitive skin of my body that detected the extreme heat, but the more seasoned and appreciative skin of the face and hands. The experiment, simple as it was, convinced me at once, that from constant covering with clothing, the skin becomes weakened as to its nervous influence and nervous sensibility, possesses a low nervous tone and exhibts a first step towards paralysis of power.

The fourth physiological effect of the thermæ is to strengthen the skin as an organ, independently of improving its function. That the function of an organ must be improved by the perfection of the structure of the organ is obvious, but I now wish to draw attention to an improvement in tone of the organ itself. It is well known that some persons bruise more easily than others; and that the skin is sometimes apt to be bruised by a very trivial cause, the extent and depth of color of a bruise being no test of the severity of the injury, but simply indicating the softness and weakness of the skin of the individual. We occasionally meet with a deep black bruise as the result of mere pressure without any blow, and an ecchymosed stain from a pinch or grasp is among the commonest phenomena of civilized, or perhaps I may be permitted to say of *well-dressed* life. Now, ecchymosed stains and the discolorations of bruises disappear very quickly by the use of the thermæ, and the skin acquires so much and so healthy a firmness that they soon cease to be produced by

trivial causes. In the thermæ the skin acquires color, freshness, firmness, and elasticity ; it loses the muddy and faded hues of ill health ; and it loses equally the parched and arid dryness and wrinkled aspect of infirmity and age.

We have thus presented to us as the effects of a thermal temperature applied to the skin : 1. An improvement of organic structure. 2. An improvement of secreting function. 3. An improvement in circulation and respiratory power. 4. An improvement of innervation and sensation.

Now, these are extraordinary and unexpected physiological results; but results that admit of no doubt or question, and they serve to clear the way to the consideration of a still more important series of phenomena, namely: such as belong to the treatment and removal of disease.

Looking at the skin, in relation to the other organs of the animal economy, we recognize it as one of the great emunctories or scavengers of the body; and we may fairly place it by the side of those other great emunctory organs, the liver and the kidneys, and, probably, the lungs. But, taking it in conjunction with the liver and kidneys, and regarding it as one of the three great scavengers of the animal system, we have the following consideration brought before us for reflection. In the climate of Britain, the skin, in many persons, is not brought into exercise for six months of the year ; in many, not for nine months ; in many, as in women and persons of sedentary habits, scarcely once in twelve months.

Now, this being the case, an increased amount of duty is thrown on the liver and kidneys. These latter organs are called upon to perform their own office, as well as that of the skin ; and for a number of years they succeed more or less well. But after a time, say about the mid period of life, the over-worked organs begin to show signs of failure ; we hear complaints of the liver, or of the kidneys; the liver becomes enlarged ; fat accumulates in the abdominal region ; hæmorrhoids are developed, with congestion of the pelvic organs and symptoms of plethora abdominalis are established. After the abdominal emunctory organs, come the heart, the lungs, the brain, and the organs of sense, sight, and hearing,. So that, originating from a mere deficiency of function of one organ in the first instance, a whole series of disorders are engendered, which involve in succession the most important organs of the body.

It is an axiom in medicine that the first step towards the cure of a disease, is the removal of its *cause ;* and if this doctrine be applied in the case that I have just stated, we have only to restore the skin to its healthy tone and function, to bring back to their allegiance the organs whose function has become disordered by its impairment. The thermal treatment, by unlocking the pores of the skin, gives to the liver and kidneys the opportunity of recovering their tone and resuming their healthy function ; and the whole of the emunctories, acting in harmony, gradually lead the way to the restoration of the entire system to health.

But suppose the mischief to have gone further, and that the disorder of function of the emunctory organs has left behind in the

blood a considerable quantity of irritant matter, the product of indigestion and mal-assimilation. These morbid materials are moved hither and thither with the tide of the circulation, they communicate a sadness to the blood, and with the blood to the entire organism; they discolor the skin; they give pains and aches to the nerves; heaviness and distemper to the brain; and they rack the joints with gout and rheumatism. Here is a catalogue of diseases all taking their rise in mal-assimilation, all dependent on the presence of impurity in the blood. How, then, are they to be removed? We resort to the emunctories—the liver, the kidneys, the skin. For the liver and kidneys we prescribe the accustomed remedies; but for the skin directly and the liver and kidneys indirectly; what remedy is there so simple, and yet so powerful, as the thermæ?

It must not be supposed that I advocate the thermæ as capable of superseding other remedies. My present aim is directed to the illustration of the uses of the thermæ, and therefore I recur to it frequently. I would employ the thermæ, not always as a primary means, but often as an adjuvant, more than respectable both in character and power. An increased action of the skin empties from the system a large quantity of water, with the water there pass away saline and effete substances in a state of solution, a fresh addition of water drunk during the perspiratory process also comes away rapidly, until the blood may be said to be washed clean of every impurity; poisons that have crept unbidden into the blood are drained out, as also are the broken and dissolved particles of organic transformations of a morbid type. This operation renders the absorbing powers of the system more than usually active; accumulations of fat are removed; nutritive matters are taken up, and medicines find their way more quickly and more abundantly into the blood, and, therefore, act with greater energy. Herein we have the explanation of an apparent paradox. We reduce fat by the thermæ, because fat is an excess, a redundancy, and a result of defective emunctory power. We fatten and bring into condition those that are lean by the same means, because we render nutrition more active and facilitate the absorption of nutrient material from the digestive system.

During my short experience of the thermæ, I have seen the infant and the aged subjected to its influence, the strong and the infirm, the healthy and the diseased. I have been struck by observing the ease with which the young, and the old especially, glide into its use. If any difficulty arise, it occurs more constantly among the middle aged than at either extreme of life; and more frequently among women than among men. There are reasons for these peculiarities which those accustomed to the thermæ will immediately recognize.

Among my fellow subjects of the thermæ I have seen numerous examples of relief from painful affections dependent on morbid composition of the blood. Several were cured of gout, of rheumatism, of neuralgia. A clergyman and doctor of divinity, who resorted to the thermæ to reduce redundancy of adipose accumulation, suffered habitually during the winter season from catarrh, bronchitis, and neuralgia, and was often laid up for weeks together with these affections. Since he has adopted the use of the thermæ, which he enjoys

excessively, he has diminished in bulk ; he has lost all proneness to catarrh, and bronchitis, and no longer experinces the pangs of neuralgia. Recently I was much interested in seeing a case of eczema of the face treated throughout by the thermal process alone ; the patient lived in the thermæ for several days; he used very high temperatures, and he succeeded completely in curing his disease. It was curious, he remarked, to observe the patches of eruption ; they yielded no perspiration, and looked like so many parched up islets in the midst of the surrounding copiously perspiring skin. At about the same time a medical friend consulted me for prurigo senilis. "You know Mr. Witt ; go and ask him to admit you to his thermæ," was my counsel. The next time I paid a visit to my friend's thermæ there was my elderly patient luxuriating in the fullness of enjoyment. That day he left his prurigo senilis behind him in the calidarium, and I believe he has had no reminder of it since. He went back to his home on the coast, and now offers a seat in his own thermæ to his curious or suffering friends.

How often, since my first acquaintance with the thermæ, have I longed to prescribe it to those who have been suffering from some forms of cutaneous disease. How important it will prove in a large group of diseases which have their origin in defective vitality, and defective nutrition of the skin ; prurigo among these ; acne and its allies of torpid function ; chloasma and its associated discolorations. I have now under treatment two cases of the ancient leprosy, elephantiasis græcorum, that have been much benefitted by the thermæ. Mr. Urquhart has met with a case of chronic psoriasis, which was cured by the thermal treatment alone.

I have hinted at the curative effects of very high temperatures ; and both Mr. Urquhart and Mr. Rolland have mentioned to me important results from this process. It occurred to Mr. Urquhart's mind, that as *fever-heat* was represented by 112°, he should be able, could he create a temperature higher than fever heat, to supersede the stage of fever at once. Thus, taking the beginning of the cold stage which nature seemed to struggle painfully to overcome ; he was enabled by a high thermal temperature to cut it short at once, and to pass over it and the hot stage to that which nature seemed desirous of reaching, namely, the sweating stage. He believes that at a certain temperature he can put a stop to the fermentive process of zymotic diseases ; and, at a higher temperature still, destroy animal poisons. He suggests, moreover, a curious and important inquiry, namely, the influence on the chemical composition of the blood, circulating through the capillary plexuses of the skin, of hot air having a temperature of 160° of Fahrenheit. Not so much its influence on the healthy blood as on the blood of persons in a state of disease.

A member of Mr. Urquhart's family, a child, was accidentally burnt ; the burn was distressingly painful ; various applications had been made without relief ; the child was accustomed to the thermæ and desired to go into it ; it was carried into the thermal chamber and the pain of the burn was immediately assuaged. Mr. Urquhart, himself, received a severe scald; he betook himself to the

thermæ ; there, in a heated atmosphere, he directed upon the injured part a blast of air hotter than the temperature of the apartment ; the pain became lessened ; the process of effusion which results in the production of a blister was arrested ; to use a popular expression, "the heat had drawn out the heat."

In an earlier page I have said that the active function of the skin, by removing all excess of fluids from the blood, by inciting in the blood a desire for fresh fluids, becomes an important agent for nutrition. Let us suppose that the fluids which are removed by the process of perspiration, contain in solution the old and worn out material of the body ; while the fluids with which we supply their place are highly nutritious ; it is clear that we shall nourish the blood, and through the blood we shall nourish the body. I am here supposing a simple physiological process, which, although unseen, is in constant operation in the animal organism. The necessity for nutrition is proportioned to the loss of material ; the waste creates the necessity for supply.

In the retort house of our gas factories, where perspiration is excessive and is continued through the entire day, the men are allowed a certain quantity of oatmeal which is made into thin gruel, and drank largely as often as the waste of fluids occassions thirst. The men are the gainers by the exchange, they give out waste water and used up solids, and they receive in exchange fresh water and nutritious solids. It is needless to say that by this process they get into high condition both of structure and health.

If we have a weakly and ill-nourished child, or a thin and emaciated adult, in whom there is no organic disease, but simply a powerless condition of the nutritive functions, may we not hope by means of the thermæ to bring about a more active and healthy nutrition, and thereby change that which is weak into strength ; that which was skin and bone into flesh and blood and their usual concomitants.

The same argument applies to disease in all its protean forms; we must apply ourselves to the hope of improving nutrition, of draining away that which is bad, and supplying its place with that which is good. It is here that our pharmacopœia will afford us important auxiliaries, and those auxiliaries will be placed on the best footing for developing their most useful properties. Viewing the operation of the thermæ in this way, we are imperceptibly led to the conclusion that every morbid process, of whatever kind, must be relieved by its use, and we ask ourselves, not what disease will be benefitted by the thermæ? but what disease can resist its power ?

Looking at the thermæ in a social and political point of view, we find it is wonderfully adapted for the preservation in health of large bodies of men, combining in itself the respective advantages of air, exercise, and ablution. The Romans were so impressed with its importance that they carried with them the genius of their thermæ wherever they migrated, and they put it in operation wherever they were located even for a short period of time. Thus we discover vestiges of the thermæ in all their temporary encampments as well as in their cities ; and by its means they kept themselves in health, even when hemmed in and surrounded by warlike enemies.

Adopted by our own army there cannot be a doubt that it would very considerably reduce the rate of sickness and death, and add to the efficiency of the men. It is applicable also in all cases where numbers of persons are collected together, as in barracks, prisons, poor-houses, factories, and schools; in large business establishments where a considerable number of young men or young women are assembled; or in places of temporary meeting as in the House of Commons and clubs. It must always be borne in mind that the thermæ not only offers advantages as respects physical health, but it also conduces to moral vigor. Those who have recourse to it would be more likely than others to shun vicious excesses of all kinds, particularly of stimulants, and be disposed to respond in their hearts and lives to the beautiful sentiment of the poet Thomson:—

> "Even from the body's purity, the mind
> Receives a secret sympathetic aid."

But the usefulness of the thermæ has even a wider sphere; the Londoner, or the inhabitant of a large city, would live as healthily immured within his city walls as the rustic amid the fields and meadows of the country. His thermæ would be to him in the place of a country house, of a horse, it would give him air, exercise, freshness, health and life.

I might add very materially to the long list of conditions to which the thermæ might be applied with advantage, but I limit myself to a single one more; it is that of extensive works, employing a large number of men, either in operations in themselves, unsalutary, or in unhealthy localities. The importance of preserving a body of working men in a state of health, and in the best condition for the performance of their duties, must strike every one, and is an object worthy a moderate sacrifice on the part of proprietors or owners. There are many localities in which miasmatic fevers abound, and constantly incapacitate the working force of large operative establishments. I believe that a few pounds expended in thermæ would correct this evil; would put the men into condition to resist the miasmatic force, and to eject the poisonous elements from the blood when they had already found admission into the organism.

In conclusion, I feel that I cannot do better than leave the important questions raised by this communication in the hands of the members of the British Medical Association, from whom, I feel assured, they will receive all the attention and practical consideration which they deserve.—*Brit. Med. Jour. Oct.* 13, 1860.

ART. V.—*On the General Treatment of Patients before and after Surgical Operations:* By F. SYMONDS, F. R. C. S., Surgeon to the Radcliffe Infirmary, Oxford.

IN the *Medical Times and Gazette*, of September 8, I offered a few

observations on the dressing of stumps after amputations. On the present occasion I purpose making some remarks on the general treatment of patients, both before and after operations; especially with a view to prevent, as far as possible, those secondary complications, which so often bring the most promising case to a fatal termination.

This latter subject demands as much attention on the part of surgeons as the former. Quickness of healing and (in amputation of a limb) excellence of stump will depend, in great measure, on operative skill and good dressing; but the patient's life will depend rather on attention to a number of precautions of a more general character. The morbid agencies, against which we have to guard, seem to be two-fold—internal and external. These we will proceed to consider.

(1.) When the question of performing a capital operation arises, it is of the utmost importance to examine carefully for coëxisting internal disease. In the case of primary amputations for injuries, of course this remark does not apply. Whether the patient be healthy or diseased, the nature of his injury may necessitate immediate amputation, and he must take his chance. But in all other cases it becomes our duty to examine our patient's constitution most narrowly, before subjecting him to an operation, which will be sure to tax its powers to a greater or less extent.

With our present aids to diagnosis, it is rare that we are unable to detect mischief in the heart, lungs, or kidneys, or any constitutional taint, such as that of syphilis, struma, etc.; but there is another organ of supreme importance to the animal economy, whose exact condition our present knowledge often fails to furnish us with the means of ascertaining—I mean the liver. While the diagnosis of many of its affections can generally be made with tolerable certainty, the pathological condition, to which, perhaps, it is most liable (and which is as frequently a cause of death after operations as albuminuria, lung-tuberculosis, or adherent pericardium), is often impossible to ascertain during life; I mean that condition of the organ ordinarily known as fatty degeneration. The frequent occurrence of this condition in cases of death after surgical operations, makes us deplore the meagre knowledge we at present possess of its causes, symptoms, and the extent of its amenability to treatment.

The pathology of fatty liver has been investigated with great minuteness by Frerichs, for the translation of whose valuable work on the Liver, the profession is indebted to the New Sydenham Society; but any one who refers to this work in hopes of finding much light thrown on the present obscurity of the diagnosis of that disease, will be disappointed. "The slighter forms of the disease," he observes, "which can scarcely be regarded as of a pathological nature, give rise to no remarkable derangements; in the more advanced grades of the affection, the symptoms are of such a nature that they can only under favorable circumstances be appealed to with confidence." The alterations in size, form, and consistence of the organ—the gastric derangements—the look and feel of the skin, sometimes yellow, greasy, and velvety, sometimes soft, transparent, and satin-like, are often the only accompanying symptoms; but

these are far too variable to be of much diagnostic value by themselves. Hence cases must sometimes occur in which the disease in question will escape detection or even suspicion, until it is discovered at the *post-mortem* examination*. We know, however, that there are certain diseases and certain habits of life with which fatty liver is very apt to be associated, to-wit: wasting diseases, such as tubercle, ulceration of bone with exhausting discharge, the dyscrasiæ of drunkards and syphilitic patients, indolent, luxurious habits, with free living, etc. In cases of this kind, even in the absence of appreciable symptoms, we should always bear in mind the probability of coëxisting liver mischief, and take it into account when we are weighing the chances of a patient's recovery from a capital operation.

While there is still much uncertainty as to the exact functions of the liver, and the mode in which an undue accumulation of fat affects them, the fact that they *are* more or less affected in such cases, is beyond doubt; and if (as seems probable) the liver is not merely a blood-purifier, but also, to some extent, a blood-maker, it possesses functions far too important to admit of any impairment without detriment to a patient who has to undergo an operation of any magnitude.

If, therefore, when contemplating an operation, we have ground, from our knowledge of our patient's constitution and habits, to suspect a fatty condition of his liver, we should at once try to combat it by all the remedies in our power, both medicinal and dietetic. A well-regulated diet, with a very small allowance of fatty or hydrocarbonous food generally, and the exhibition of alkaline medicines, will probably cure the affection, if it be only transient, and relieve it if it be permanent. Now comes the question: Supposing an operation of some magnitude to be advisable, what amount of internal disease is to deter one from its performance? This is a matter to be decided only by an attentive consideration of the various circumstances of each particular case, bearing in mind, as a general rule, that where the local disease, in spite of treatment, is evidently wearing out the patient at a greater pace than the constitutional disease, we shall probably prolong his life by removing the former.

For some time previous to a patient's undergoing an operation, the surgeon will do well to watch the pulse very closely, and become familiar with its variations in the course of the day; otherwise, after the operation, he may find a difficulty in reading it aright. He will

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*Frerichs makes some valuable remarks about the fallacies to which we are liable, in examining the state of the liver after death. He says, that simple inspection is generally insufficient to determine the exact amount of its fatty contents, since a liver may be in a tolerably advanced stage of fatty degeneration without seeming otherwise than normal to the naked eye; and, on the other hand, may be almost wholly free from fat when its appearance would lead one to suppose the contrary (as in the case of a soft, anæmic liver). Again, the rough test of its greasing the blade of the knife, is, in many cases, insufficient. The microscope alone can inform us of its true condition. Consequently, in records of *post-mortem* examinations, any statements made about the presence or absence of fat in the liver must be received with much distrust, unless they are stated to have been verified by microscopic examination. Frerichs also observes that a liver infiltrated with fat is not necessarily one which has undergone fatty degeneration, since the quantity of fat in the liver may vary within wide limits consistently with health. We cannot, therefore, help concluding that many cases of what have been described as fatty livers, may have been merely transient, physiological, and not pathological conditions of the organ, while death was due to some other cause.—"*Frerichs on Diseases of Liver*," Syd Soc. Transl., vol. i, chap. vii.

be liable to overlook some alteration in its frequency, force, or volume, which may be of real significance; for we know that sometimes slight variations in the character of the pulse will give intimation of coming mischief, when no clue to such mischief can be got from the look of the wound or from the patient's general condition. On the other hand, the surgeon will, perhaps, take alarm at some alteration which may mean nothing at all. I well remember a case of amputation in which, from not having observed this precaution, I was misled, and began to form an unfavorable opinion of my patient, until I found, from those better acquainted with the peculiarities of his pulse, that my alarm was groundless.

But we must make sure that our patient is not only sound enough, but strong enough, to bear the operation. In a chronic case under constant observation, it is not so easy to make certain of this point. One is apt, when seeing a patient almost daily, perhaps, for some weeks, to disregard slight indications of failing strength. It has seemed to me a good plan in such cases, when practicable, to send the patient away to his friends for a time. By so doing he has the advantage of change of air; we have the advantage of being more likely, on his return, to form a correct judgment of his fitness to undergo the operation proposed.

2. We come now to the consideration of external morbid agencies, which we know from experience to have so large a share in inducing unfavorable complications after operations. Since these are a class of evils almost wholly in our power to prevent, we shall be more or less culpable if we allow them to exist.

The first, and most pernicious, is impure air. In many hospitals, I believe it is the custom for patients who have undergone capital operations to be placed in separate and well-ventilated wards. The desirability of such isolation is obvious. I would, however, observe that the benefits of isolation will be very imperfectly obtained, perhaps wholly cancelled, unless proper attention is at the same time paid to deodorization. The effluvium arising from a patient's wound may be so powerful as thoroughly to taint the air even of a spacious, airy room. All that ventilation can do is, by establishing a free current of air, to dilute the products of decomposition and carry them away; deodorization destroys these products as fast as they are formed.

I know of no deodorant so instantaneous and powerful in its action as chlorine in some shape or other. In my own practice I always use the "liquor sodæ chlorinatæ" of the London Pharmacopœia. One part of this to twelve parts of distilled water makes a deodorant lotion sufficiently strong for all ordinary purposes. After amputation, by frequently wetting with this lotion the piece of linen thrown over the end of the stump, and the material (whatever it may be) put to catch the discharge, all smell may be prevented. Again, by pouring a little of the said lotion into the bed-pan before it is used, the fæces may be passed and removed from the chamber with their smell completely neutralized. An objection sometimes urged against the use of chlorine, is its own disagreeable odor, the remedy being to some persons as offensive as the evil it is intended

to cure; but the truth is, that the smell of chlorine becomes perceptible only when there is no effluvium to destroy—directly the chlorine comes in contact with any effluvium, it enters into chemical combination with its hydrogen, and loses all smell. If, therefore, the strength of the lotion is judiciously proportioned to the intensity of the smell, the poison, of course, must neutralize the chlorine just as much as the chlorine does the poison. Thus, the use of deodorants will not only save much disgust to the patient, but will at the same time annihilate a cause, which we know to be of itself able to induce an unhealthy condition of the body, and more or less to interfere with recovery. The oil of tar, to which attention has lately been drawn in this Journal (September 8 and 15) by Dr. Skinner, of Liverpool, would seem from that gentleman's testimony to be another deodorant of great efficacy, and at the same time cheap and easy of use.

The next error I would guard against is improper food. The mistake which we are, perhaps, most liable to commit on this score, is to diet our patient according to some preconceived notion, and not according to the real wants of his case. We perhaps hear of some eminent man, who has unusual success after operations, and tells us that in every case he adopts the "high-pressure" system of diet from the very day of the operation; then, without taking the trouble to reason, we connect his dietetic regimen and his high ratio of success as cause and effect, forgetting that many other conditions unknown to us, and possibly to him, may have contributed to his success, and that the "high-pressure" system of diet, so far from being its cause, may possibly have been an accidental necessity, in spite of which success ensued.

In cases where a patient needs a large amount of food and alcoholic drink, we are, I think, rather apt to lose sight of the necessity for the purposes of the economy of a mixed diet—to cram our patient with a quantity of animal food without a due proportion of vegetables. Here I would suggest that, for the purposes of nutrition, good broth, which has generally vegetables boiled in it, is a better article of diet than the much-lauded beef-tea, which is meat juice alone. The odd fancies which patients sometimes show in the matter of diet should not be made too light of, but should lead us to consider carefully whether they are not indications of some error or deficiency in the diet prescribed for them.

There is one more caution which, I think, should always be borne in mind, viz: for a short time before an operation, to cut off all those medicines which (like iodide of potassium for instance) are very slowly eliminated from the system. We must remember that, in the exceptional condition in which a patient is placed after a capital operation, the emunctories of the body will have enough to do in getting rid of its own effete matter, without having the extra labor of eliminating substances foreign to its economy. The less medicine we give a patient before and after an operation, the less chance will there be of our interfering with Nature's process of repair.

I believe it is rather a common practice to give a dose of opium in all cases after an operation of any magnitude. My own experi-

ence leads me to doubt in many cases the necessity, and, therefore, the propriety of such a practice. I have often observed that, when a patient has been long suffering great pain from local disease, the smarting which follows the operation for its removal is hardly felt, if not wholly absorbed, in the sense of relief consequent upon its riddance. The same objection, I think, may be urged against the indiscriminate administration of opium after cases of labor.

At the commencement of this paper I mentioned fatty liver as a disease, whose lurking existence we should closely watch for *before* operations. We must be equally on our guard against its insidious supervention *after* operations, remembering that the circumstances in which a patient is then placed, are often singularly adapted to induce such a condition of the organ. Perhaps for some weeks he has to lie almost motionless on his back, his digestion taxed to the utmost with a large amount of food and alcoholic drink, to compensate for the drain of a suppurating wound. The probable result of all this will be an undue accumulation of fat in the liver, and consequent impairment of its functions to a degree which will certainly retard convalescence, and *may* prove fatal.—*Med. Times and Gaz.*

Art. VI.—*On the Question of Quantities in Toxicology:* By M. Louis Orfila.

When by chemical analysis the expert has determined the presence of poison either in the cadaver or in the matters vomited, he is required to declare whether the quantity of poison found or the quantity swallowed is sufficient to cause death, or produce the symptoms observed. In order to establish the sense in which the expert should reply to this question, we may take a rapid survey of the data upon which he should rely.

1. The whole quantity of a poisonous substance which has been swallowed is not absorbed, save in exceptional cases. A portion, usually the most considerable, is rejected by vomiting, or, after traversing the digestive canal, passes off by stool. When death takes place promptly, a portion may still be found in the canal. The remainder is absorbed, that is it is carried into all the tissues. 2. The portion absorbed is not distributed uniformly through the various parts of the organism. Daily experience shows that, with the same weights, the liver always yields to analysis a much larger proportion of poison than all the other organs. 3. Elimination commences a short time after absorption, and the investigations which have been made up to the present time, show that, as regards certain of these poisons, arsenic for example, it may be completed fifteen or twenty days after ingestion. It is therefore evident that

the amount of poison remaining in the organs, where it has been carried by absorption, continues diminishing from the period of its ingestion; so that if life be sufficiently prolonged, the entire quantity of poison absorbed may have become eliminated prior to death. Thus, a month after the ingestion of an arsenical preparation, the organs will contain no trace of arsenic. Chemical search will not discover it, but yet death has been none the less the result of the disturbance which it has caused. It is obvious that the presence of the poisonous substance in the organism until the last moment is not necessary for the production of death. The blow was struck at an early period, diseased action has become developed under the influence of the poison, and death is the termination of such disease. 4. When the rejected matters are not handed over to the expert, and when the alimentary canal is completely empty, chemical research can only be directed to certain organs or portions of them. It is a rule for the first experts to retain a portion of the matters handed over to them for ulterior research. It is easy to understand, then, especially with the more or less considerable losses rendered unavoidable in so difficult an analysis, that the quantity found constitutes but a very small fraction of that which has been swallowed, or even of that which has been absorbed. 5. Finally, it is highly important to note, that for no poison do we know the quantity sufficient to induce the accidents of poisoning. By observations, whose rarity restrains their significance, we know, in general, the limit beyond which doses should, in general, be regarded as poisons; but this limit is incontestably very superior to the reality. Thus, we know that fifty centigrammes of arsenic will induce poisoning in all cases, save in very rare exceptions; but no one can decide, in a given instance, whether five, ten, twelve, or fifteen centigrammes will not suffice to cause death. The action of poisons is so variable, and we are so little acquainted with the causes which give rise to their variance, that we cannot, without risking to expose ourselves to serious error, determine what is the minimum dose of a poison sufficient, in a particular case, to give rise to death or to the symptoms observed.

From the above data it results: 1. When the vomited matters and the stools have not been submitted to chemical analysis, it is impossible to ascertain, even approximatively, the quantity that has been swallowed; and, consequently, to declare whether the quantity ingested has been sufficient to cause death. The quantity absorbed, moreover, by reason of the unequal dissemination through the various organs, and the elimination which may have taken place, cannot be estimated by the amount found in certain organs or portions of organs. Such amount is but a minute fraction of the portion absorbed, which itself is but a fraction of the quantity swallowed. It may be insufficient to induce death, although the quantity ingested, or even that absorbed, may be more than sufficient. 2. If there have been neither vomiting nor stools, and if the digestive canal contain no poison, the quantity ingested has been all absorbed; and for the above reasons there is no means of judging by the quantity found of the amount which has been swallowed. 3. If the vomits and stools have been analyzed, or if (in their absence) the matters

contained in the canal comprised the whole of the poison swallowed, except the portion absorbed, it is possible to declare approximatively the amount ingested. In such a case it is desired to establish whether the quantity ingested is sufficient to determine death. It is only when the quantity swallowed has been much greater than that which would be really sufficient for this purpose, that the expert can reply affirmatively. Under other circumstances, by reason of our ignorance concerning the conditions which modify the action of poisons, the greatest reserve is peremptory. The reasons for doubt, dependent upon the actual state of science, should be stated ; and this conclusion brought out that, in general, even when the quantity ingested has been really larger than that which is necessary to induce death, we are still not in a condition to affirm that it has induced it.

It is very desirable that this question of quantity should be reduced to exacter proportions, and that it should no longer retain the exaggerated importance which is now attributed to it. The symptoms and the lesions of tissue, combined with the detection of poison in the organs, are the most valuable elements for forming a decision whether poisoning has taken place, while the question of quantity, so far from bringing out the truth, will only conceal it in the great majority of cases. When a poison exists in organs or in matters which should not contain it, its quantity, save in some exceptional cases, cannot be insisted upon as a proof of poisoning. The great bulk of crimes of this kind would escape detection, if such a proof were considered necessary. In order to exhaust this subject of quantity, and of the conclusions to be arrived at by experts respecting it, we may state two particular cases in which dosage is daily referred to. 1. Has the poison which has been detected resulted from the substance having been administered medicinally? An instant's reflection will suffice to explain that, except in the case wherein the poison has been found in the matters of the alimentary canal, the vomit, or the stools, in quantities much larger than the highest therapeutical doses, the consideration of quantity will in no wise elucidate the problem. The portion absorbed, which, moreover, it is impossible to determine, will never be sufficiently considerable to allow of a sure deduction being made. 2. But it may be said, when we have to do with poisons which also exist in the animal economy in a normal state, is it not of service to have recourse to the consideration of quantity, in order to determine whether a poison discovered in the organs does not result rather from this normal combination than from a criminal introduction? When there exists in these organs a much larger quantity of poison than has been found in the normal condition (and thus far experience has taught us very little on this matter), we may be authorized to admit poisoning as probable, supposing that all other objections have been previously refuted. But when the amount discovered is not very considerable (and, judging from the preceding considerations, this will be the usual case, inasmuch as it can be only a portion of what has been absorbed), the embarrassment is just as great, and the question of quantity is of no significance.—*Gazette des Hôpitaux.—Med. Times and Gaz.*

ART. VII.—*On the action of Mercury upon the Liver:* By THOMAS INMAN, M. D., London, Physician to the Liverpool Royal Infirmary.

CIRCUMSTANCES have induced me lately to investigate the action of mercury upon the liver; and as the inquiry has led me to important results, I think it right to communicate them to others.

So far as I can learn, it is an almost universal belief, both amongst doctors and patients, that mercury has a special influence in increasing the secretion of bile; and when this idea is put into definite words, the formulas run thus: all mercurials act on the liver; blue pill stimulates it; a small dose of calomel irritates it; a large dose "emulges" it; while gray powder corrects its secretion. Acting on this belief, mercury is used in every form of hepatic disease. One patient, with too much bile, takes calomel to carry it off; another, with too little, takes blue pill that he may carry off the proper amount. Too big a liver is treated with mercury to reduce its size; and too small a one (as in cirrhosis) is treated with the same drug, that its bulk may be increased; and if the bile goes the wrong way, and reaches the skin or the stomach instead of the bowels, mercury is given to bring it back. To challenge such belief, is certain to draw upon the inquirer the title of visionary theorist; yet the name will be undeserved, for those only are theorists who ignore opposing facts, and they are essentially the practical men who rigidly seek after truth, and refuse credence to insufficient evidence.

Let us, in the first place, examine the grounds for the general belief we have adverted to. They seem to be the following:

1. Universal belief, and the assertions of learned physicians. 2. When a man feels bilious, a dose of blue pill relieves him. 3. Calomel and blue pill purge a man, and under those circumstances an unusual quantity of bile is supposed to be found in his stools. 4. Calomel, in children, produces green stools, and these clearly are vitiated bile. 5. Clayey stools are undoubted evidence of an absence of bile in them. When a man who passes clayey stools takes a dose of blue pill his stools become brown again. 6. Opium produces clayey stools when given alone; but if given with calomel, this effect does not ensue. 7. That calomel is and has been largely used and highly eulogized by physicians in the hepatic diseases common in hot climates.

Ere we state the evidence on the other side, we must dispose of these statements.

1. Universal belief and general assertion is no solid foundation on which to build a theory and establish or disprove a fact. At one time there was not a single human being who did not believe that the sun traveled round the world every day; and there were vast multitudes who considered the fact proved by the assertion of the sacred writers. Now, on the contrary, all who entertain the ancient notions, and assert that the Bible teaches astronomy, are looked upon with feelings akin to pity. Human beings are as liable to err now as ever, and our age is not immaculate.

2. That blue pill relieves biliousness, is no proof of the action of mercurials on the liver: first, because there is no evidence that the

sensation to which that term has been applied, depends in any way upon the bile, the liver, or the increase or decrease of the hepatic secretion; secondly, we deny that blue pill alone gives more comfort under the circumstances than any other purgative; but, granting that it is so, this is not proof that the drug acts beneficially on the liver; thirdly, there is direct evidence, which we shall adduce by and bye, that blue pill, calomel, etc., has not the action it is presumed to have.

3. The third point is one of considerable interest. There can be no doubt that calomel produces purging; and, for the sake of argument, we will assume that more fluid bile is found in the stools; but is that a proof that the calomel acted on the liver? By no means. Calomel appears to have a locally irritating or stimulating effect; for we have it frequently applied to the eye in various diseases, much as we use blackwash to a venereal sore. We may well, therefore, believe that it may irritate the stomach and bowels; but we are at a loss to see how the drug is to work its way backwards through the gall-ducts from the bowels, and so to reach the liver and stimulate it. If the answer to this be—That the drug is absorbed by the portal circulation, and thus reaches the liver, the reply is, by asking, How? seeing that the drug is insoluble, and cannot easily get into the portal circulation at all? The usual theoretic and very flippant answer to this is: That the chloride is converted into the bichloride in the stomach or bowels, and that this, being soluble, may enter the veins. But this reply is manifestly absurd, for if the conversion spoken of should ensue, the amount of calomel would be quite sufficient to poison the patient; and if the effects are dependent on such a change, how absurd and unphilosophical is it not to give the bichloride at once in a definite dose. This is not done, it is said, because corrosive sublimate does not affect the liver as calomel does. What, then, becomes of the conversion theory? and what becomes of the assertion, that the calomel reaches the liver, and irritates it?

But it is asserted, that the motions passed after the use of the mercurial, contain more bile than usual. What is the proof of this? I have sought in vain for analysis of calomel stools; or, indeed, any definite observations on the amount of material excreted. Before we can allow the correctness of this statement, we must know, first, what the liver naturally secretes; secondly, how much of this goes with the chyme into the blood; thirdly, how much passes away as excrement; fourthly, how much bile is formed after calomel has been taken, and how much passes into the blood, and how much into the stools.

We may find that calomel prevents any bile from passing into the blood with the chyme, and diverts it all into the stools; if so, there may be more bile in them, though the liver positively secretes less than usual.

Dr. Scott's experiments distinctly show that calomel, while it purges, does positively diminish the hepatic secretion; and a moment's thought convinces us that it should be so. Increased secretion requires an increase of material, from which the secretion can be formed; for the liver, the supply comes through the portal veins.

These bring blood from the mesenteric capillaries ; and these again during purging are constantly having the amount of blood in them reduced by the secretion from the bowel ; consequently, the supply of blood in the portal vein must be materially diminished by purging, and sound sense prevents us from believing that the liver can answer an increased demand on a deficient supply.

It is clear, then, that purging, even if bilious material should be present, is not proof of increased secretion from the liver. The following consideration seems to demonstrate this.

The amount of bile secreted by a man weighing one hundred and sixty pounds, has been estimated at 66 ounces per day (see Beale's *Archives of Medicine* part iii, page 214), or about four pounds avoirdupois. The amount of feculent matter passed by the same individual, if solid, will be about a pound. Three pounds, therefore, of the bile have been removed, either as water, or as an ingredient in the chyle.

Give to such an one a dose of calomel, and supposing it purges him, he will not pass more than four pounds of feculent matter ; and what is this but the ordinary solid stool diluted. In such a case more bile appears to be present, simply because its watery part has not been removed. But a purgative increases the intestinal mucus; consequently, there will be in every loose stool an unusual quantity of a serous fluid and mucous epithelium, and this will dilute the bile more largely.

Judging from such observations as I have been able to make, a simple calomel purge removes about two pounds of feculent matter; and a purge of jalap, scammony or croton oil, removes about the same under ordinary circumstances.

The necessary inference from this is that, after the use of calomel, and the same remarks apply to blue pill, there is evidence of deficiency of bile, and that the fluid motions do not represent as much solid biliary matter as would a healthy motion diluted with three times its weight in water.

This consideration I do not remember to have seen referred to, yet it must always modify the conclusion we must otherwise draw, if we considered *quantity* in the stools rather than *quality*.

3. The amount of weight to be given to the evidence of calomel, producing green stools in children is infinitely small. The statement indeed, must be considered as utterly worthless to demonstrate the action of mercury on the liver; for my friend Dr. Petrie, of this town, informed me some time ago that he had examined the bodies of many children who had died while taking calomel, and after passing the characteristic green stools. He found on all occasions that the liver and gall-bladder are in a natural condition ; that there was no green color in the upper part of the bowels ; that it was faint at first, and gradually deepened towards the rectum ; and that on scraping off the secretion, it was evidently a production of the mucous membrane of the bowels, and not of the liver at all.

But why, it is asked, does the calomel produce it? We know not; but when we remember that bad food, poor milk, teething, and a variety of other causes, will produce green diarrhœa in infants, we may

fancy that the stools in question are akin to these, and that what will explain the one will equally explain the other.

5. The fifth and sixth statements may be taken together; they are entirely based upon the significance of clayey, pasty, yeasty, or whitish stools; and the effect mercurials have in changing their color. It is assumed that these stools can contain little if any bile; but if we examine this assumption closely, we find that it resolves itself into this, that the motions in question contain none of the *coloring matter* of the bile. If, then, we assert that the stools contain the usual amount, or even an excess of cholesterine and bile-acids, though they do not contain the coloring matter, and there is nothing to disprove this, the value of this evidence is reduced to this, viz., that mercurials promote the secretion of *colored bile*.*

If we examine into this part of the subject closely, we shall find much food for thought. We note—1. That people living upon bread and milk pass motions free from color, and this for so long a period that we must either believe that the liver for them is useless, that milk-food produces a colorless bile, or, at any rate, that a colorless bile may be formed by the liver.

Now, as milk contains a considerable quantity of oil, and as fat bacon is supposed to have something to do with neutralizing bile, without at the same time producing white stools, we must either give up our idea of the effects of fatty food on the color of the stools, or modify it very materially. As milk given to an infant is attended with bright yellow motions, and, when given to an adult, is attended with white ones, may we not fairly surmise that the quality of the bile is not the same in the two; always assuming that the liver acts as a secreting organ, whether people live on milk or other foods? This fact, at any rate, is certain, that if the liver acts at all in a man living on bread and milk, it produces a bile which does not give the stools a brown, green or yellow color. As all experiments show that no internal organ can be completely dispensed with, and health be retained, and as the history of acholia shows that the liver is no exception to this, we must conclude that the liver does act in milk-eating people.

If, then, it be once accepted as a reliable fact, that the liver may secrete a colorless bile, what becomes of the argument which assumes that the color of the stools is an evidence of the amount of bile they contain? And if it be allowed that milk-eating people conserve their health, it cannot be argued that pale stools are necessarily a proof of hepatic disease.

That pale stools generally attend jaundice, there is no doubt. That jaundice is commonly attended with deeply colored urine, is equally

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* If we turn to Carpenter's *Physiology* (third edition, page 455) we find at the latter part of his description of the ingredients of the bile, the following statements: "The proportion of the cholesterine in healthy bile appears to be very small; but in many disordered states this component is present in much larger amount. The coloring matter of the bile is a substance distinct from the preceding: that of the ox and other graminivorous animals appears to be identical, or nearly so, with the chlorophyll of the leaves on which they feed; but that of the human bile seems to possess different properties, and to be derived from the proper constituents of the blood."

For some very interesting statements respecting the coloring matter of the bile, and its apparent independence of the rest of the secretion, see Frerichs *On Disease of the Liver*.—New Sydenham Society's translation, pp. 89–90, 94–5–6 and notes.

certain. Frerichs tells us that, in such urine, bile-solids and bile-acids cannot be found, but bile-color can be. (P. 96, note.)

We may assume, then, that in jaundice it is possible the colorless parts of the bile go into the intestines, while the colored parts pass into the blood, etc.

The assumption that mercurials restore the healthy color of the motions is one open to much doubt. That they seem to do so in some instances I cannot deny. But I assert, 1st. That I have used mercurials without the healthy tinge returning. 2d. That I have used no medicine, and the color has been restored. 3d. That for one case in which "mercury corrects the secretions," there are six in which it does not. Still farther, that as the common direction given by authors, and the practice followed by doctors, is to persevere with the mercury *until* the desired change is effected, there is reason to believe that, when the mercury does really seem to act, the change must be regarded as a *concomitant*, and not a *consequence* of the medicine.

That opium locks up the secretions of the liver, is no better ground for theory—1st. Because opium eaters pass natural stools. 2d. That an overdose of the drug does not produce symptoms resembling acholia. 3d. That in deaths from poisoning by opium, no perceptible change is to be met with in the bile, or in the liver indicating that its functions have been suspended. 4th. That white stools occur when neither milk nor opium has been taken, and where there is no jaundice. 5th. That, at the outside, the fact can only be taken to prove that opium influences the chlorogenic function of the liver, as it is supposed to influence the glycogenic.

Of the influence of calomel on the liver in cases of Asiatic cholera, we forbear to speak, as the facts recorded do not warrant us in saying whether the mercury cured the cholera, or the calomel began to act because the disease for which it was given abated.

7. We cannot deny that calomel has been largely used for liver disease, and highly eulogized by physicians in hot climates; and we readily allow that "distance lends enchantment to the view," and that there is some truth in the proverb, "Omne ignotum pro magnifico."

Nevertheless, we boldly and emphatically deny that the testimony thus given is reliable. We aver that the diagnosis of liver-disease current in the East has been, and still is, a false one; and that the superstructure built upon it has been deadly. Calomel is the bane of Indian medicine, not its handmaid. This statement may seem bold in one who has no individual knowledge, yet it is fully borne out by many friends who have such experience.*

These being the arguments and statements on which the current belief is founded, we must now examine those on the other side, which point to a directly opposite conclusion.

We first turn to the symptoms exhibited by those who come in any way under the influence of mercury, reasonably expecting to find

* Reasons which may readily be divined induce the writer to withhold particulars on this point; and he does so the more readily, as he believes that in the course of time the conclusions which he thus hints at, will be definitely established, provided his correspondents conserve their health and vigor.

that there will be phenomena as characteristic of this metal as colic and wrist-drop are of the action of lead, and necrosis of the jaw is of phosphorus. Those most exposed to mercury are looking-glass makers, mercury-miners, and gilders, and seamen in ships carrying quicksilver; and, in one remarkable case, the whole crew were affected, from crude mercury having escaped from the bags containing it. In all these, the characteristic symptoms produced are salivation and mercurial tremors; and we find no reference whatever to any alteration in the hepatic function. Surely, if mercury had any specific action on the liver, one case, at least, would show an affection of that organ.

It may be alleged that this argument is valueless, because mercury introduced into the body in fumes is not the equivalent to mercury when given by the mouth, as blue pill and calomel. A short consideration, however, shows this argument to be untenable; first, because there is no distinction between the effects of mercury when taken in fumes, when rubbed in through the skin, or when absorbed by the bowels; all alike produce salivation and nervous exhaustion. Second, there is no essential difference between blue pill and mercurial fumes; both consist of the metal in a finely divided state.

We next turn to the experience we acquire of the action of mercury when given in doses to induce salivation. We find that it causes griping, purging, low-spirits, nervous debility, impoverishment of blood, and salivation. We find Dr. Porter and Mr. Pearson describing such symptoms as mania, apoplexy, hæmorrhage "erethism," "sudden death," dysenteric diarrhœa, palpitation and irregular action of the heart, erythema, roseola, ecthyma, and many others, but no observer records anything approaching to excessive biliary secretion, or any specific action of the liver. A specific action on the salivary glands being present in nearly every case, surely, if the drug had a specific action on the liver, its existence could be as readily demonstrated.

From this point we turn to the action of mercury when given in a poisonous dose. We argue, if a small dose of calomel irritates the liver, a large one must irritate it still more; or, if it does not *irritate* it, it must surely overwhelm and destroy it; or if, as routine urges, we believe that a large dose "emulges" the liver without irritating it, we should, at any rate, find a vast amount of bile in the intestines after an overdose of the drug has been administered.

Refer now to Taylor, *On Poisons*, 1st edit. p. 389, where there is a case of death after the use of two grains and a half of calomel daily, for five days. Salivation ensued; and the *post mortem* revealed gums ulcerated; mucous membrane of tongue, mouth and fauces, intensely irritated; left kidney enlarged; right, small: but the account makes no mention either of the liver or of bile.

Turn to Periera. Five persons are quoted as having experimented on dogs, pigs, and horses, without remarkable results; clearly none were referrable to the liver. Dr. Beaumont, putting twelve grains into the stomach of a man, caused "commotion, slight nausea, and the secretion of a white frothy fluid running at the aperture, like fermenting beer from a bottle." Swallowed in small does Pereira says

it "occasionally excites no obvious effects, though more commonly it acts as a purgative;" and that this is pretty close to the truth we infer, because few practitioners of the old school ever give calomel as a purgative without joining to it jalap, or following its use by a senna draught, to "carry off" the bile and physic together.

Periera then quotes Gölis, who states that he has many times seen calomel given for hydrocephalus and croup, produce *enteritis*, which rapidly passed into gangrene. Then follow cases in which calomel had produced intense salivation, mortification and death; and one in which, three drachms being given, "it was followed by one copious evacuation, and that not till after the use of an injection."

In no case is there any evidence whatever of excessive biliary action.

Turning from Periera's account of calomel to his description of the effects of other mercurials, the same broad facts are apparent, viz., that the specific action of the metal is upon the mouth, salivary glands, fauces and intestines; and that it has no such action upon the liver at all.

From the philosophic certainty given by the preceding considerations, we turn to direct experiment, and find in Dr. Beale's *Archives of Medicine*, No. 3, a most important series of observations made upon a dog by Dr. Scott. The first operation was to open the abdomen, and establish a direct communication between the bile-ducts and the abdominal wall, by which means all the hepatic secretion was passed into a receptacle provided for the purpose; and the greatest care was taken to guard against all possible sources of fallacy. The amount of calomel administered in the four experiments was three, six, ten, and twelve grains respectively. The following was the result. The daily average for two days prior to the first dose of calomel was 1960 grains of fluid bile; the daily average for two days after the calomel was 1358. The calomel on this occasion did not purge, but it *reduced the biliary secretion one-third.*

When six grains were given the dog was purged twice within four hours. Prior to the dose the daily average of fluid bile was 1639 grains; after the dose the amount was 518 grains. The calomel had *reduced the biliary secretion nearly two-thirds.* After ascertaining that the reduction in quantity was not due to other causes, a third experiment was tried.

Before giving the third dose of calomel the daily average of bile was 3044 grains. Ten grains of the drug were used; it was uncertain whether it purged the dog, but it reduced the fluid bile to 2720 grains.

On the fourth occasion, twelve grains of calomel were given, and the dog was purged copiously. Prior to the drug being taken, 2658 was the daily average; after it, the secretion only reached 1724. *The bile was diminished one-third.*

The results then were, *that in every case the hepatic secretion was diminished by calomel, and the diminution was most conspicuous when the drug acted as a purgative.* Taking together the two experiments *where no purging ensued, the diminution was one-fifth of the whole:* taking those *where purging was present, the loss of bile amounted very*

nearly to one-half (4297 to 2242)—a conclusion which strict analogy has previously led us to expect.

Against these experiments one objection only can be taken, viz: that Kölliker had made three observations previously, in *one* of which the bile seemed to be increased, while it was diminished in *two*. Giving the full value to this objection, the conclusion we must still come to is, that *the chances are six to one that calomel will diminish the hepatic secretion, and that it will diminish it proportionally to its purgative action.*

With this mass of evidence before us, it is impossible for us to subscribe to the popular belief that calomel increases the secretion of the liver; and, as the action of this drug does not essentially differ from that of other mercurials, we conclude they operate much in the same way. Truth, in this instance, appears to lie in a directly opposite quarter to that in which it is generally supposed to do.

But it will naturally be asked, "Now that you have deposed mercury from the province where it held sway so long, what other province will you assign to it? What *does* mercury do?" Any one can answer the question for himself by taking the drug systematically. We may sum up the experiences thus. Taking calomel and blue pill as the type for other preparation, mercury depresses the nervous system, producing sickliness, faintness, and a tendency to tears; it irritates the stomach and bowels, producing anorexia, flatulence, griping, and purging, with thin, watery and diluted stools, instead of rich and solid ones; it diminishes the red particles of the blood, and reduces greatly all muscular power; it promotes suppuration, commonly gives rise to inflammation of the salivary glands, and ulceration or gangrene in the mouth.

Such is the dark side of the picture; yet there is a bright side too. I am not arguing against the use of the metal, but against its abuse. That mercury is a powerful weapon in the physician's armory, I readily allow; but it is the Congreve rocket of medicine. When properly aimed and true in flight, nothing is equal to it; yet it is sometimes so erratic in its course, and its effects are so different to those it was intended to produce, that it is gradually losing the confidence of those who cultivate philosophic precision.

We may often assist our conclusions respecting one thing by putting it in apposition with another. Calomel, it is said, specially irritates the liver. Do we know any other drug likely to do so? Arsenious acid, so far as we know, irritates *every* organ it comes in contact with. Taylor tells us that, when given in large doses, a much greater amount is found in the liver than in any other part of corresponding bulk; yet no one has ever attributed to this material an effect on the hepatic secretion similar to that which they attribute to mercury. The corollaries to be drawn from this are too obvious to require enunciation.—*British Med. Jour.*, Oct. 20, 1860.

ART. VIII.—*On the Origin of Ferments. New Experiments relative to so-termed Spontaneous Generation:* By M. L. PASTEUR.

AMONG the questions arising during the researches which I have undertaken on the subject of fermentations properly so termed, there is none more worthy of attention than that which relates to the origin of *ferments*. Whence proceed these mysterious agents, so feeble in appearance, and yet in reality so powerful ; which in the minutest quantity, measured by weight, and with insignificant external chemical characters, possess such extraordinary energy? It is in an attempt to solve this problem that I have been led to the study of the so-termed spontaneous generation.

In the communication which I had the honor of submitting to the Academy on the 6th of February last, I mentioned only a single fluid appropriate for the development of infusoria and mucedinea, although I gave a general method applicable to all liquids.

On that occasion I showed, in a manner that has been contested only in appearance—First, that the solid particles conveyed in the atmospheric air were the origin of all the vegetable and animal productions peculiar to the fluid in question. Secondly, that these particles, examined under the microscope, are amorphous, dusty atoms, constantly associated with certain corpuscles, whose form, volume, and structure, show that they are organized after the manner of the ova of infusoria or of the spores of the mucedinea.

I am, at present, in a condition to extend the assertions contained in the communication of the 6th February to two substances, still more alterable than the sugared water mixed with albuminous matters, which had been more particularly the subject of my former experiments. I now speak of milk and urine. The details of the results derived from these two fluids will show, as I hope, the kind of future in store for this department of study.

I introduce about one hundred cubic centimeters of recent urine into a flask capable of containing two hundred and fifty cubic centimeters. The drawn-out neck of the flask communicates with a platinum tube, heated to redness. The liquid is made to boil for two or three minutes, and then allowed to cool. When refilled with air, which has been subjected to a red heat, the flask is hermetically closed.

The flask, under these conditions, may remain for an indefinite time in a stove, at a temperature of 30° C., without its undergoing any alteration. After the lapse of a month or six weeks, I cause a small quantity of amianthus, charged with the atmospheric dust, to fall into the flask, the mode in which this is effected being precisely that described in the *Comptes Rendus*, of the 6th of February. The neck of the flask being then again hermetically closed, the apparatus is replaced in the stove.

In order to be sure that the manipulation to which the flask is submitted, for the introduction of the atmospheric dust, does not itself in any way affect the result of the experiment, I prepare a second flask, similar to the other ; only that, instead of allowing amianthus charged with atmospheric dust to fall into it, I substitute the same

amianthus, previously calcined for some moments before its introduction into the flask.

The following are the constant results of the experiments so made :

The fluid in the flask which has received the amianthus deprived of the atmospheric dust, remains unaltered at the temperature of 30° C., whatever may be the duration of its exposure to this heat, which is so favorable to the putrefaction of urine. On the contrary, at the end of six hours, the urine which has received the atmospheric dust presents organized products—mucedinea or infusoria. Among the latter I have noticed chiefly *bacteria*, very minute *vibriones*, and *monads*, in fact, the same infusoria that I have found in the same urine exposed to the contact of the atmospheric air at a temperature of 30° C. During the following days will be witnessed an abundant deposition of crystals of ammoniaco-magnesian phosphates and of the alkaline lithates. The urine becomes more and more ammoniacal. Its urea disappears under the influence of the true ferment of the urine, a ferment which I have proved to be organized, and whose germ could only have been introduced in the atmospheric dust, as well as that of the infusoria or of the mucedinea.

Milk exhibits still more interesting properties. I have said that, before filling the flask with air which has been subjected to a red heat, and hermetically closing it, I caused the urine to boil for two or three minutes. This duration of the ebullition is sufficient, and everything leads me to believe that even less careful precautions will suffice to deprive of all viability the germs which may have fallen into the urine subsequent to its emission.

This being granted, let us repeat, without any change, the operation above described—now, however, not upon urine, but upon fresh milk ; that is to say, after this fluid has been boiled for two or three minutes, and the flask has been refilled with air heated to redness, let us keep it closed at a temperature of 30°.

After a variable lapse of time—generally of three to ten days—the milk in all the flasks thus prepared will be found coagulated. Under the prevalent views respecting the phenomenon of the coagulation of milk, there is nothing in this circumstance to excite surprise. When milk, it is said, is exposed to contact with the oxygen of the air, the albuminous element is altered, and acts as a ferment. This ferment reäcts upon the sugar of the milk, and transforms it into lactic acid, which then precipitates the casein. This is the cause of the coagulation. In reality, however, things are quite otherwise. For, if one of these flasks in which the milk is coagulated be opened, it is obvious, on the one hand, that the milk is *as alkaline as fresh milk;* and on the other—a circumstance tending to encourage the belief in spontaneous generation—that the milk is filled with infusoria, most frequently with vibrios, as much as one-twentieth millimeter in length. As yet I have not met with any vegetable production under these circumstances.

From these facts we must admit : First, that the phenomenon of the coagulation of milk, as I hope shortly to demonstrate more clearly, is a phenomenon upon which we have had but very imper-

fect notions. Second, that *vibrios* may arise in a liquid of the nature of milk which has undergone ebullition for several minutes at a temperature of 100° C., although this is not the case with respect to urine, nor to a mixture of sugar, water, and albumen. Is it the case, then, that under particular conditions we may have spontaneous generation? We shall soon see how far this conclusion would be erroneous. Let the milk be boiled, not for two, but for three, four, or five minutes, and it will be found that the number of flasks in which it coagulates from the presence of infusoria, diminishes progressively in proportion to the longer duration of the ebullition. And lastly, if the ebullition be carried on at a temperature of 110° to 112°, under the pressure of one and a half atmosphere, the milk will never afford any infusoria. Consequently, as they do arise under the conditions existing in the former experiments, this is evidently due to the circumstance that the fecundity of the germs of the *vibrios* is not entirely destroyed, *even in water*, at a temperature of 100°, kept up for some minutes, and that it is more affected by a longer ebullition at that temperature, and wholly abolished at the temperature of 110° to 112° C.

But what is to be said concerning the phenomenon of the coagulation under those special conditions of ebullition, in which the milk in contact with calcined air never affords any infusoria? One remarkable fact is, that the *milk does not coagulate*. It remains alkaline, and preserves, I would venture to say, entirely all the properties of fresh milk. Then, if into this milk, thus retaining its integrity, the atmospheric dusty particles are introduced, it changes and coagulates, and the microscope shows the existence in it of divers animal and vegetable productions.

It would be very interesting to ascertain whether the fluids belonging to the animal economy, such as milk and urine, contain normally or accidentally, previously to all contact with the common air, the germs of organized productions. This is a question which I hope to resolve in a subsequent communication.

The generally admitted theory of ferments, and that which of late years had received fresh support from the writings or the labors of various chemists, consequently appears to me more and more incongruous with experiment. The ferment is not a dead substance, without determinate specific properties. It is a being, whose germ is derived from the air. It is not an albuminous substance, altered by oxygen. The presence of albuminous matters is an indispensable condition of all fermentation, because the ferment depends upon them for its life. They are indispensable in the light of an aliment to the ferment. The contact of the atmospheric air is, primarily, equally an indispensable condition of fermentation, but it is so in virtue of its being a vehicle of the germs of the ferment.

What is the true nature of these germs? Do they not require oxygen, in order to pass from the state of germs to that of adult ferments, such as are met with in the products undergoing fermentation? I have not yet arrived at any fixed conclusion with respect to these grave questions. I am endeavoring to pursue the inquiry with all the attention it merits; but the really capital difficulty of

these studies consists in the isolated, individual production of the various ferments. I may assert that there are a great many distinct, organized ferments, which excite chemical transformations, varying according to the nature and organization of the ferment. But in most cases the nutriment suitable to some allows of the development of others of them, whence arise the most complicated and the most variable phenomena. If we could only isolate one of these ferments, in order to develop it by itself, the chemical transformation corresponding to it would take place with remarkable precision and simplicity.

I shall, in a short time, give a new instance of this, in describing the organized ferment proper to the fermentation termed "viscous." —*Comptes Rendus, May* 7, 1860, p. 849.—*Quarterly Jour. of Microscopical Science.*

Art. IX.—*Recto-Vesical Lithotomy—Bozeman's Button Suture.* By J. F. Noyes, M. D., Waterville, Me. (Communicated for the Boston Medical and Surgical Journal.)

History shows that this operation (recto-vesical) dates from about the beginning of the present century. M. Sanson, in an inaugural thesis, first described the operation. Of the several methods therein laid down, M. Maisonneuve, in later years, made an important modification. These are all fully described in systematic works on surgery, and call for no special mention from us here.

From the frequent evil results and ill success consequent upon the escape of stercoraceous matter into the bladder, and infiltration of urine preventing the cicatrization and healing of the cut, the operation became obsolete.

The discovery of the "silver wire suture," the wonderful success consequent upon its use in treating vesico-vaginal fistules in the hands of Dr. Sims and others, led naturally to a trial of it in this (the recto-vesical) operation. Accordingly, we find that, in 1859, Dr. S. first applied it in the case of a recto-vesical operation performed by Dr. Bauer, of Brooklyn. The wound healed by the first intention, in eight days, and its employment here was announced as the beginning of a new era in lithotomy. At that time we had our second patient, on whom we were about to operate for stone, and we decided to give it a trial.

The following is a report of the case: A Mr. Jones, of Corinna, Me., aged 39, of a healthy and vigorous constitution for more than three years, had been troubled with more or less pain and distress in the bladder, particularly when urinating. At the time of our first visit he had been confined to the room, under the care of a physician for several months, and was in a very emaciated and feeble state

from protracted suffering, and from a large open abscess under the throat.

Introducing carefully a sound, I detected a stone lying loosely in the bladder. Upon further examination, it was thought best to postpone the proposed operation for at least one month, with the hope that he would then be in a more favorable condition. At the expiration of this time, however, our patient was scarcely any better, and there appeared nothing to be gained by delay.

Oct. 21, 1859, in the presence of a number of medical gentlemen, and with the assistance of Drs. Benson of Newport, and Wilson of Dexter, the patient being fully etherized, and placed in a convenient position on the left side, with the thighs flexed, I proceeded with the operation as follows : Dilating the rectum with an ordinary speculum (not having Sims's at hand, which I very much regretted), the bladder being partly filled with lukewarm water, and a sound introduced and held by an assistant, I then made out with my finger the situation and limits of the prostate gland. With a two-edged scalpel, a cut was made through its central portion and bilaterally enlarged sufficiently to enable me to introduce my index finger, when it was dilated a little. The forceps were now introduced, the stone seized and extracted without much difficulty.

The stone is of an oval form, quite hard, with a rough surface, and measures, in its long diameter, an inch and a half ; in its short diameter, three quarters of an inch. I have not yet had it analyzed, so as to know of what it is composed. Six silver-wire sutures were required to bring together and coaptate the edges of the wound. Upon these I adjusted " Bozeman's button," in the manner I had seen him apply it in the case of a large vesico-vaginal fistula, operated upon by him in the fall of 1858, at the " Hotel Dieu," which united by the first intention, and was cured in eight days.

On the twelfth day after the operation I removed the apparatus, when it was found united by the first intention, save a small place in the centre. I could not be surprised at this slight failure, in view of the very unfavorable state of our patient at the time. A few touches, however, with nitrate of silver, from my colleague, Dr. Benson, under whose care the patient was left during my absence, was all that was necessary, as it closed by granulation in a short time. It was observed that a sliding down of a fold of the rectum over this small opening seemed to guard against the escape of any thing into the bladder while it was healing.

Our patient was obliged to keep his bed for a long time, on account of a large bed-sore on one of his hips, which was very slow in healing. But, at the end of three months, he was weighed, and it was found that he had gained about seventy pounds, making his entire weight two hundred. Both of these patients (the first operated upon by the lateral operation more than three years since) are now in good health.

It may be important to state, in closing this report, that both of them had used, for a number of years, water from wells containing lime.

November 20, 1860.

ART. X.—*On the Alteration of Pitch of Cardiac Murmurs by Conduction through the various Media composing the Thoracic Organs and Walls:* By SYDNEY RINGER, late Physician's Assistant at University College Hospital.

IN a paper published in the Proceedings of the Royal Society,* I have endeavored to show that the pitch of sound is altered by conduction. The nature of the alteration varies with the conducting medium. The following is a summary of the conclusions there arrived at by experiment: That porous substances, such as wood or bone, lower the pitch in proportion to their porosity; all other solids, such as iron and glass, raise the pitch. Fluids raise the pitch. Fluids in motion raise it more than fluids at rest. Solutions in water raise it more than pure water, and in proportion to the strength of the solution. Minute particles suspended in water raise it more than either pure water or solutions. Gases raise the pitch slightly. The heart's substance lowers the pitch. Cellular tissue raises it. All the above altered the pitch in proportion to the amount of the conducting medium listened through.

In the following paper it is intended to explain the alterations in pitch in cardiac murmurs by conduction by the above principles; but as these alterations in pitch have not hitherto been noticed, it is necessary first to state them.

When a murmur, conducted either through the heart's substance or the sternum, is listened to, the pitch is found to be lower than at the point of production. Thus an apex murmur is found to have its pitch lowered when listened to at either the ensiform cartilage or at the base of the heart; whilst a base murmur is found to be lowered in pitch when listened to at the apex or ensiform cartilage. Should there, however, be effusion into the pericardium, the very reverse takes place of what is stated above; the pitch being then raised, instead of lowered, at the different points named. Again, a murmur generated at the base, at either orifice, is found to have its pitch raised at the second cartilage to which the vessel in which the murmur is generated runs; whilst, on the other hand, it is notably lowered at second cartilage on the opposite side. Thus, should it be an aörtic murmur that is being listened to, the pitch is found to be heightened at the second right, and lowered at the second left cartilage. Should it be a pulmonary murmur, the reverse is the case. Any murmur heard through the medium of air-containing lung is found to have its pitch heightened by the conduction. The cause of the lowering of the pitch when heard through the medium of the sternum, or heart's substance, is explained by the property they possess of lowering pitch by conduction, which has been shown to be the case in the paper I have alluded to.

In effusion into the pericardium, it has been said that the pitch is raised, instead of being lowered, as in the above case. This is due to the property fluids have of raising the pitch, and was well illustrated in the following case: A patient suffered from extensive

* *Proceedings of the Royal Society*, Jan. 26, 1860.

effusion into the pericardium ; also from a loud mitral regurgitant murmur. The pitch of this was found to be higher at the base and at the ensiform cartilage than at the apex. As the fluid became absorbed, as ascertained by percussion dullness, so did the distance to which the pitch was raised, beyond that again falling. Thus, when the fluid reached as high as the second rib, the pitch was found to be raised to that point ; but when it fell to the third rib, the pitch was still found to be raised as high up as this ; but, on listening higher still, the pitch fell again. After the fluid was considerably absorbed, the only direction in which the pitch was raised was in passing inwards to the ensiform cartilage (the patient being in the erect posture). On placing the patient in the recumbent posture, and depressing the upper part of the chest, at the same time elevating the lower, thus causing the fluid to gravitate away from the apex and ensiform cartilage, the pitch was found to be lowered in passing to the ensiform cartilage. On restoring the patient to her first position, the pitch again became higher at this point than at the apex.

The elevation of the pitch of a basic murmur at the second cartilage, to which the vessel generating it runs, is also due to the fluid in the vessel. It may be objected that the distance is too short ; and also that, as the blood is in motion, the murmur would be carried, and not conducted, by the fluid. The following experiments, however, show that these objections are not valid :

Into an india rubber tube, thirteen inches long, and three-fourths of an inch diameter, a funnel was inserted. Immediately below this a small opening was made, just large enough to admit the end of a tuning fork. Water was kept constantly running through this, and the stethoscope (covered with a diaphragm) was applied to different parts of the tube. By this method the pitch was found to be most appreciably raised the further from the fork the stethoscope was applied to the tube. The elevation of pitch was easily recognized at a distance of two and a half inches. Next, an aörta was tied to the mouth of a tap, and an artificial murmur produced by causing a constriction of the vessel by a piece of twine tied round it. The pitch of the murmur so produced was decidedly raised the further it was heard along the vessel from the point where the sound was generated. It was easily appreciated at a distance of two and a half inches.

To set the question quite at rest, a tourniquet was placed over a man's femoral artery, immediately below Poupart's ligament, and an artificial murmur thus produced ; this was found to rise in pitch in passing down the course of the vessel. A well marked difference was noticed at a distance of two and a half inches. The intensity of the murmur quickly diminished in passing to the right or left of the vessel, the pitch being at the same time rapidly raised, which was due to the interposition of the integuments ; but this interposition could not be the cause of the rise of the pitch in the course of the vessel, as the murmur could be heard in that direction at a distance of at least six inches, whilst it was completely lost at a distance of two inches to either side of the vessel. Thus the murmur must have been conducted by the blood ; whilst the same thickness

of integuments was over the artery at the lower, as the upper point listened to, for both points were above the place where the sartorius muscle crosses it. Indeed, in the paper alluded to I have shown:—1. Fluids at rest raise the pitch. 2. Fluids in motion still more. 3. Solutions raise it more than water. 4. Fluids holding minute particles in suspension raise it still higher. Now all these conditions are found in the blood.

The reason the pitch is lowered when the murmur is listened to at the second cartilage opposite to that to which the vessel producing the murmur runs, is, that it is conducted through the sternum, which has been shown to lower the pitch.

In passing up to the sternal notch, the pitch of a basic murmur is found to rise. Here, probably two causes act:—First, the vessel which conducts the sound is nearer this point; and, secondly, lung to some extent intervenes, which raises the pitch, gases having this tendency.

It has been stated above that a murmur heard through lung is found to have its pitch raised. This is due to the air it contains. This has been proved elsewhere, but the following experiment also shows it. A patient presented himself with a loud mitral murmur, audible over the entire chest. A point where much lung, and only lung intervened, was chosen, and the stethoscope applied to this point. The patient was directed first to expire deeply, and the pitch ascertained. He was then told to inspire to the utmost, and retain it, whilst the pitch was again ascertained; and under the last condition it was found most appreciably raised. The only altered condition here was an increase in the amount of intervening air.

The following is the diagnostic application of the above facts:—When a murmur is very intense it is audible over the entire heart region, often rendering it difficult to decide whether there is but one murmur audible at the other orifices merely by conduction, or whether two original murmurs exist. The point of greatest intensity will decide one; and, if percussion dullness excludes the possibility of fluid in the pericardium, and the pitch of the less intense murmur heard at the other orifices be higher than that of the most intense, this is indubitable proof of the existence of a second murmur.

In cases where tumors simulate in their percussion dullness, fluid in the pericardium, should a murmur exist, the tumor being solid, would probably lower the pitch; should it be however fluid, the pitch would be raised by conduction through it. Again, it is often difficult to decide whether a basic murmur be aörtic or pulmonary, or both; it being heard with equal intensity at both second cartilages. If aörtic only the pitch will be heightened at the second right cartilage, but lowered at the second left, and *vice versa* in the case of a pulmonary murmur; whilst, should both exist, the pitch will be heightened at both cartilages.

In conclusion, I beg to thank Dr. Wylde, the conductor of the Philharmonic Society, for kindly examining and corroborating many of the experiments devised to elucidate this matter; and also Dr. Hardie, of Leith, who greatly assisted me in conducting the same.—*Edinburgh Medical Journal.*

REVIEWS.

REV. I.—*Essai sur le Traitement des Fistules Vésico-Vaginales par le Procédé Américain, modifié par* M. BOZEMAN ; *par* MATHEUS-ALVES D'ANDRADE, *né à Rio de Janeiro (Brésil), Docteur en Médecine de la Faculté de Rio de Janeiro, Docteur en Chirurgie de la Faculté de Paris, Correspondant étranger de la Société d'Anthropologie.* Pp. 66, quarto. Paris : 1860.

DR. D'ANDRADE, in his introductory remarks, says that in females, urinary fistulæ had, during a long period, been considered beyond the reach of the healing art, with rare exceptions ; but it is not so now. A new operation, introduced into France by Dr. Bozeman, a surgeon of the United States, has, in the hands of that surgeon and those who have followed him, afforded, in the treatment of this infirmity, results which hitherto had not been witnessed.

This elaborate memoir of Dr. D'Andrade was presented August 18, 1860, to the Faculty of Medicine at Paris, for the degree of Doctor in Surgery. The author, in his introductory remarks, says : "We have taken for the subject of our thesis a description of the American operation, as performed at the *Hôtel-Dieu*, by Dr. Bozeman, and since by MM. Follin, Verneuil, and Foucher," describing at length the different stages of this operation, illustrating them with suitable drawings, together with the various instruments employed by Dr. Bozeman.

He divides the subject into three parts. The first comprises a description of the operation and the management of the patient. To this he adds a brief notice of the different modifications of this operation which hitherto have been proposed by American and English surgeons. These, he thinks, are of sufficient importance to be made known, though he says nothing of their respective merits, there being no facts before him to prove the superior advantages claimed by their authors.

In the second part, he details two cases operated upon by M. Verneuil, at the *Hôpital Necker*, and one by M. Foucher, the latter being then under treatment. He then gives a tabular statement of all the other operations performed according to the American method that he has been able to collect, giving, at the same time, the sources of his information : Dr. Bozeman has twenty-nine cases ; Mr. Baker

Brown, twenty-two ; Mr. Pollock, one ; Dr. Brickell, four ; Mr. Wallace, one ; Dr. Schuppert, one ; M. Follin, one ; M. Verneuil, two ; and Mr. Eben Watson, seven.

Finally, the third part gives, in detail, the results furnished by this procedure. In the sixty-eight patients there were eighty-three fistulæ, upon which there were one hundred and ten operations performed, resulting in sixty-three cures ; twenty-three ameliorations ; twenty-two failures, and two deaths.

Out of the sixty-three cures, forty-four were obtained at the first operation. Out of the twenty-two unsuccessful operations, fourteen were performed upon three patients requiring respectively ten, two, and two. This, it will be perceived, greatly lessens the number of unsuccessful operations in proportion to the whole, and when it is known that the first of these cases was thought, from the start, to be incurable, the efficacy of the procedure is placed in a far better light than it might otherwise appear.

Here, it may be stated, that at the time M. D'Andrade prepared his paper he had only seen two numbers (for January and March, 1860), of the *New Orleans Medical and Surgical Journal*, which contain the last reports of Dr. Bozeman's cases. It is true the author has collected from British and French Journals, some additional cases which Dr. B. operated upon while on a visit to Europe ; still there are others equally deserving of a place in these journals, which were passed unnoticed, and of which, consequently, he could have no knowledge. One of these cases was operated upon at the University College Hospital, London, in the service of Prof. Erichsen. According to the statement of this distinguished surgeon, who had charge of the case after the operation, the result was entirely successful, though from some cause a relapse took place four or five days after he removed the suture apparatus. Another case was operated upon in the private practice of Prof. Simpson, who, at that time, took great interest in this operation, and which, as is well known, he has since turned to so good an account. This case, singular to say, was never published, though the result of the operation was entirely successful, as was stated in a letter to Dr. Bozeman from Prof. Simpson, a month or two afterwards. These cases, and another one operated upon after Dr. Bozeman's return home, are published with his other European operations, in the last May No. of this Journal which give him thirty-two (32) cases, instead of twenty-nine (29) as shown in the table of M. D'Andrade.

In addition to these we would add, that Dr. Bozeman, in his remarks upon M. Robert's report of the case treated in the *Hôtel Dieu*, Paris, offers some strictures, in reference to the circumstances attending the final result of his operation. M. D'Andrade enters the result of this case in his table as an amelioration only.

Now this case, as we are led to infer, was regarded as almost hopeless; the opening in the bladder was of enormous dimensions, implicating both ureters, and MM. Robert and Verneuil had both failed in their operations upon it. M. Robert represents the final result of Dr. Bozeman's operation, to the effect that he could inject into the bladder of the patient 300 grammes of milk, without a single drop of it escaping into the vagina, and that the woman could scarcely feel a drop of urine escape upon assuming the erect posture or walking about. Could anything, therefore, be more unreasonable than to offer such a result, in such a case, as being no more than a mere *amelioration?* The author might, with equal propriety, put all cases of fistulæ in the same category, attended with extensive loss of the substance of the bladder and urethra, yet susceptible of closure, with the result of incontinuance of urine, to a greater or lesser extent, according to the extent of injury.

Closure of a fistulous opening, under any circumstances, even when followed by incontinence of urine, is a result that cannot be viewed by an enlightened surgeon in any other light than successful. So should the result of Dr. Bozeman's operation at the *Hôtel Dieu* be regarded, judging from the facts contained in the report of the case.

In conclusion, it may be remarked, that it is the intention of Dr. Bozeman to resume, very soon, the report of his cases in this Journal, making in all, up to this time, I am informed, between fifty and sixty.

Although Dr. D'Andrade's fundamental aim in this essay is to set forth Dr. Bozeman's modification of the operation for vesico-vaginal fistulas, without entering upon its antecedents and historical appreciation, yet, he briefly alludes to the claims of Dr. Marion Sims, the distinguished pioneer in this branch of surgery. He expressly says that Dr. Bozeman's process is a modification of Dr. Sims's—a fact which Dr. Bozeman had long ago freely expressed in his publications on this subject.

Dr. D'Andrade notices Dr. Bozeman's European visit, in 1858, in

connection with his surgical operations, and their happy influences, in both insular and continental Europe. All who have been conversant with foreign medical journals for two years past, must have seen that this noiseless, unheralded visit was a professional triumph and inaugurated an æra in European surgery, in reference to a large and deplorable class of cases, which Dr. D'Andrade characterizes "*comme inaccessibles aux resources de l'art.*" The self-imposed, but unsuccessful, efforts of a few surgeons to undervalue Dr. Bozeman's merits and methods, though now forgotten, were virtually so many testimonials the other way The "*procédé Américain, modifié par M. Bozeman*, now introduced into Europe by his late visit and operations, together with scores of living monuments at home, restored from a condition as deplorable as can be imagined on this side of the grave, are achievements worth living for, laboring for, traveling for.

Happy the physician whose travel in foreign lands carries thither the lights of progressive science ; he whose pathway is marked with acts of benificence, the restoration of the miserable and the mutilated to health and happiness ! Surely Goëthe could not have had in view the enlightened, humane, and sympathizing surgeon, when he propounded the strange question : "Have there not been men so totally forsaken by all feeling of existence, that they have held the life and nature of mortals as a nothing, a painful, short, and tarnished gleam of being ?"

Rev. II.—*Registration Report of South Carolina, for* 1859.

The Sixth Registration Report of South Carolina, for the year ending December 31, 1859, by Robert W. Gibbes, Jr., M. D., Registrar, is an official document of 116 pages, from which the reader will derive much instruction in the vital and mortuary statistics of the Palmetto State. Without attempting the difficult task of analyzing its numerous tables, it is proposed on this occasion to give a few data and general statements from the same.

The able and industrious Registrar, Dr. Gibbes, says :

We observe again, what was remarked last year (and we think this should now be considered as decided), that slaves in our climate are more prolific than whites, but their mortality is higher and they die younger. The same has been observed in Kentucky for the past seven years, except that there the whites are the most prolific.

BIRTHS.—In the whole number of births we find that 10,237 were males, are 9,817 females, or 104.27 of the former to every 100 of the latter. If we take the races separately, we see much the largest male excess in whites, viz : 108.17, while in slaves only 102.77 are born to every 100 females. A similar disproportion of the male excess in the two races has been noticed every year in both South Carolina and Kentucky. The proportion given in 65,792 births, the number returned in the entire population of South Carolina during the past four years, is 104.31—a very small fraction above that indicated in the present returns.

DEATHS.—Only 8,321 deaths are returned, which is 1379 less than the number recorded for the previous year.

It is noticed that the average age at death in whites is a little higher, and in slaves a fraction lower than before. With respect to the proportion of the sexes we find, that during the whole six years there were 5,902 white males, and 5,692 white females, or 104.03 males to every 100 females. In the slave population, however, the proportion was 17,734 males to 17,775 females, or but 99.76 males to 100 females. The proportion of deaths in both races together is 100.80 males to 100 females. This is not different from what might be expected, since the United States Census shows a preponderance of males in whites and of females in slaves.

There were 34,517 births in the warmer, and only 31,278 in the colder season.

The whole number of births of known dates, registered in South Carolina for the past four years, is 65,792, the preponderance of males being 1,586, or 104.31 males to every 100 females. The male excess, however, as shown before, is much higher in whites than in slaves. It is to be again remarked, as was done last year, that January, which has always given the fewest births, has given much the largest male excess, viz : 26.16 per cent., while September, November and December, producing the most births, show the smallest proportion of males. With respect to conception, we notice that the most favorable months are December, March and January.

Plurality Births.—In twin or triplet births, there were 428 children born, or 212 cases, making one plurality birth out of every 94.59 in both races. In whites, however, there was one out of every 78.06, whilst in slaves the proportion was only one to 104.18.

Four cases of *triplets* have occurred during the year, all among slaves, and Edgefield is the banner district in that line, she having produced in May, two males and one female at one birth; in June, three males; and in December, two males and one female.

The remaining triplets were born in Sumter, in August, and were all three females.

The still-born in 1859: total, 403; whites 139; slaves 264.

Deaths in 1859.—There were 7,723 deaths from known causes, of which the largest number, viz: 866, occurred in the month of August. July gave 848, and September 804. January, which is the healthiest, gave but 401, and February 463. This is in accordance with the returns of previous years.

Deaths at Different Ages.—In 827 instances, the ages at death were not stated, leaving 7,494 at known ages. Of these, 1,973 (966 males and 1,007 females), or 26.32 per cent., died under one year; 829 males and 731 females, or 20.81 per cent., between one and five years, etc., etc.

Causes of Deaths.—There were 102 causes enumerated in the returns of 7,107 deaths, the remaining 1,214 of the latter being from "unknown" causes. The chief sources of mortality were *pneumonia*, producing 740 deaths; *typhoid fever*, 655; *dropsy*, 372; *consumption*, 332; *old age*, 314; *whooping cough*, 279; *teething*, 261; *suffocation*, 172; *convulsions*, 171; and *scarlet fever*, 161. The first named disease was, as usual, much more fatal among slaves, especially in the months of February and January and under the age of five years, as well as between twenty and forty years. July produced the largest number of deaths from typhoid fever, which was most fatal between the ages of fifteen and thirty, and more so by a fraction, in the slave population, than in whites. I am inclined to believe, however, that this is owing to mistakes being frequently made in entering negroes as dying from "typhoid fever," instead of *typhoid-pneumonia*, which last disease is much more prevalent with that race, while the former attacks whites in greater numbers. 5.23 per cent. of all the deaths are credited to the indefinite disease, or rather *effect* of many different diseases, "dropsy," a larger proportion being

in slaves than in whites. The fourth cause in order is *consumption*, which was almost doubly fatal to whites, etc., etc. There was no yellow fever in Charleston last year, and we notice that the proportion of deaths from *zymotics* is much smaller than the average, while those from diseases of *uncertain seat*, of the *nervous*, *respiratory*, and *digestive organs*, are greater in number than ever before. Consumption killed 6.85 per cent. in whites, and 3.94 per cent. in slaves, the month of July, and the period between thirty and forty years of age showing the highest mortality, and there being a considerable excess of females in both races. *Croup* destroyed one hundred and fifty children and one negro woman, the latter between thirty and forty years of age. It is almost twice as fatal to whites as to slaves. The largest number of deaths were in the month of November, all but fifteen of the whole being under five years, and only fourteen between five and ten years of age.

Class II, or Diseases of Uncertain Seat, is quite a large one, furnishing a much greater mortality even than usual, and is, of course, found to give the highest proportion in slaves, it being much more difficult to attain an exact diagnosis in their diseases than in those of our own race. The chief causes of death here are "dropsy," "debility," "marasmus," and *scrofula*.

In Class VI, which is the fourth in fatality, the principal causes are *teething*, *worms*, and indefinite "diseases of the bowels," all of which claim the most victims in young negroes. Whites die in larger numbers from *colic*, *dyspepsia*, *enteritis*, *gastritis*, *hepatitis*, *jaundice*, *diseases of the liver*, *peritoneum*, *spleen*, and *stomach*, *etc.* There were two deaths among slaves from *dirt eating*, both females, one of whom was between ten and fifteen years, and the other of unknown age.

Diseases of the nervous system, comprising Class III., are the next in order, giving a mortality of 10.03 per cent., which is considerably higher than in any of the five preceding years. This class has been found more fatal to whites in each one of the past years, although more deaths of slaves are ascribed always to the indefinite "convulsions," the most fatal of all causes under this head, as well as to *trismus nascentium*. *Apoplexy*, *delirium tremens*, *hydrocephalus*, *neuralgia*, *paralysis*, and *disease of the spine*, were all more severe with whites.

The 12th Class, external causes or violence, produced 7.54 per cent.

of all the deaths, which is a little more than the average for six years. As might be expected it is more than doubly fatal to slaves than to whites, the principal figures being from *burns, accidents,* and *suffocation* (smothered, choked, or overlaid). To the credit of "the Institution," be it said, that very few negroes die of *homicide, intemperance, neglect, poison* and *suicide.*

Old Age, which forms the 11th Class, furnished 4.41 per cent. which is a little below the average for six years. In slaves the mortality in 1859 was 4.97, and in whites only 2.75 per cent A very similar difference in the two races is observed every year. As to sex, the females were in the majority in both races.

Dr. Gibbes gives a table of deaths at advanced ages, from which it appears that one white male died, aged 100; one white female, 100; one white female, 102; one white male, 104; seven slave females, 100; eight male slaves, 100; one male slave, 102; one female slave, 110; one male slave, 120 Several of these died of special diseases; one was drowned; and the residue are reported as deaths from old age.

MISCELLANEA.

The Use and Abuse of Tobacco.

[Sir Benjamin Brodie having, on the 27th of August, 1860, addressed the public on a professional subject through *The Times* (newspaper), as will be seen below, No. 2, *The Medical Times and Gazette* (Sept. 8, 1860), has criticised the same, as will be seen by Nos. 1 and 3.]

1. A copy of a letter from Sir B. Brodie to the *Times*, on the Use and Abuse of Tobacco, will be found in another column. Most of our readers will agree with the general conclusion, that the enormous abuse of the narcotic stimulant is injurious to the health of the community. We may admit this, because we can fairly argue, that anything so powerfully poisonous in large doses, must in smaller quantities be still prejudicial—slowly poisonous, it may be. It is, however, a very curious, but still a very certain fact, that when we come, as physicians, to investigate the nature of the injury thus

done to the body by smoking, we find no clear, distinct and tangible facts, no numerous and undoubted instances, such as justify us as medical men in saying, "Oh! here is the consequence of tobacco abuse!" We know well enough how to trace symptoms with unerring certainty up to abuse of spirituous drinks. We can lay our fingers with certainty upon the mischief done by tea, or by over-gorging the stomach with food. An habitual opium-eater has his distinguishing peculiarities; but when we come to seek for the physical symptoms indicating mischief done to the body by abuse of tobacco, we are left without any satisfactory answer. We think Sir B. Brodie's letter proves this position; and we fancy that the experience of our readers will confirm it. The statement of his belief by Sir B. Brodie, "That there are very few who do not suffer harm from it," is probably the belief of most of us; but what we want is a tangible proof of the fact, in the same way as we have tangible proofs of the sufferings resulting from drink or gluttony. We also think Sir B. Brodie has strained very doubtful facts to prove his position as to what will be the effect of the present rage for tobacco on future generations. Surely the extinction of the Red Indian is a matter of course, quite independently of his addiction to fire-water. It is a simple universal historical fact—the savage receding as civilization advances. Then, again, the other instance of the Turk is not a happy one. Surely it must be by very doubtful analogy that his present "lazy and lethargic" state can be connected with tobacco, rather than with polygamy. Besides, we might ask, did the Turk show any want of energy on the Danube, or in Asia Minor, during the Crimean war? And can any one doubt, that if the Turk were once again excited to a religious war pitch, as he was in the days of Solyman, and as he was when he over-ran Eastern Europe in those days when his name was a terror to European nations—can any one doubt that we should equally find in him now the energy he showed in ancient days? The truth is, that in this matter of tobacco there appears to be always an unfortunate tendency to a stretching of facts—a tendency evidently derived from the circumstance of a clear and positive want of facts to prove the case required. We call this tendency unfortunate, because it evidently injures the reasonable cause which it desires to defend, viz: the non-abuse of tobacco. It is clearly useless to attempt to arrest a torrent; the way to deal with it is to reduce its force. This we think may probably be effected by Sir B. Brodie's letter. It may lead many to reflect upon the dangers they incur by over-indulgence in this tobacco-vice; and if he had not stretched his illustrations to meet his case, he would not have left any opening for doubt and cavilling. We would also just remind would-be instructors of the public on medical questions, that they are not to follow Sir B. Brodie's example, or think they are doing so, by writing letters to newspapers. Sir B. Brodie is a very eminent man in a very high position, and his motives are above all suspicion. But if what he does is to be taken as a license by smaller men, a very great abuse will be looked upon as authorized.

2. *The Use and Abuse of Tobacco.*—The following letter by Sir B. Brodie is copied from the *Times:*

"Sir—Having been applied to some time since to join in a petition to the House of Commons that they would appoint a committee to inquire into the effects produced by the prevailing habit of tobacco smoking, I declined to do so; first, because it did not appear to me that such a committee would be very competent to discuss a question of this kind; and, secondly, because, even if they were so, I did not see that it would be possible for parliament to follow up by any act of legislation the conclusions at which they might have arrived. Nevertheless, I am ready to admit that the subject is one of no trifling importance, and well worthy the serious consideration of any one who takes an interest in the present and future well-being of society. From these considerations it is that I now venture to address to you the following observations.

"The empyreumatic oil of tobacco is produced by distillation of that herb at a temperature above that of boiling water. One or two drops of this oil (according to the size of the animal) placed on the tongue will kill a cat in the course of a few minutes. A certain quantity of the oil must be always circulating in the blood of an habitual smoker, and we cannot suppose that the effects of it on the system can be merely negative. Still, I am not prepared to subscribe to the opinion of those who hold that, under all circumstances, and to however moderate an extent it may be practised, the smoking of tobacco is prejudicial. The first effect of it is to soothe and tranquilize the nervous system. It allays the pains of hunger, and relieves the uneasy feelings produced by mental and bodily exhaustion. To the soldier who has passed the night in the trenches before a beleagured town, with only a distant prospect of breakfast when the morning has arrived; to the sailor, contending with the elements in a storm; to the laborer, after a hard day's work; to the traveler in an uncultivated region, with an insufficient supply of food, the use of a cigar or a tobacco pipe may be not only a grateful indulgence, but really beneficial. But the occasional use of it under such circumstances is a very different matter from the habit of constant smoking which prevails in certain classes of society at the present day.

"The effects of this habit are, indeed, various, the difference depending on difference of constitution, and difference in the mode of life otherwise. But, from the best observations which I have been able to make on the subject, I am led to believe that there are very few who do not suffer harm from it, to a greater or less extent. The earliest symptoms are manifested in the derangement of the nervous system. A large proportion of habitual smokers are rendered lazy and listless, indisposed to bodily, and incapable of much mental exertion. Others suffer from depression of spirits, amounting to hypochondriasis, which smoking relieves for a time, though it aggravates the evil afterwards. Occasionally there is a general nervous excitability, which, though very much less in degree, partakes of the nature of the *delirium tremens* of drunkards. I have known many individuals to suffer from severe nervous pains, sometimes in one, sometimes in another part of the body. Almost the worst case of neuralgia that ever came under my observation was that of a gen-

tleman who consulted the late Dr. Bright and myself. The pains were universal, and never absent; but during the night they were especially intense, so as almost wholly to prevent sleep. Neither the patient himself nor his medical attendant had any doubts that the disease was to be attributed to his former habit of smoking, on the discontinuance of which he slowly and gradually recovered. An eminent surgeon, who has a great experience in ophthalmic diseases, believes that, in some instances, he has been able to trace blindness from amaurosis to excess in tobacco smoking; the connection of the two being pretty well established in one case by the fact that, on the practice being left off, the sight of the patient was gradually restored. It would be easy for me to refer to other symptoms indicating deficient power of the nervous system to which smokers are liable; but it is unnecessary for me to do so; and, indeed, there are some which I would rather leave them to imagine for themselves than undertake the description of them myself in writing.

"But the ill effects of tobacco are not confined to the nervous system. In many instances there is a loss of the healthy appetite for food, the imperfect state of the digestion being soon rendered manifest by the loss of flesh and the sallow countenance. It is difficult to say what other diseases may not follow the imperfect assimilation of food continued during so long a period of time. So many causes are in operation in the human body which may tend in a greater or less degree to the production of organic changes in it, that it is only in some instances we can venture to pronounce as to the precise manner in which a disease that proves mortal has originated. From cases, however, which have fallen under my own observation, and from a consideration of all the circumstances, I cannot entertain a doubt that, if we could obtain accurate statistics on the subject, we should find that the value of life in inveterate smokers is considerably below the average. Nor is this opinion in any degree contradicted by the fact that there are individuals who, in spite of the inhalation of tobacco smoke, live to be old, and without any material derangement of the health; analogous exceptions to the general rule being met with in the case of those who have indulged too freely in the use of spirituous and fermented liquors.

"In the early part of the present century, tobacco smoking was almost wholly confined to what are commonly called the lower grades of society. It was only every now and then that any one who wished to be considered as a gentleman was addicted to it. But since the war on the Spanish Peninsula, and the consequent substitution of the cigar for the tobacco-pipe, the case has been entirely altered. The greatest smokers at the present time are to be found, not among those who live by their bodily labor, but among those who are more advantageously situated, who have better opportunities of education, and of whom we have a right to expect that they should constitute the most intelligent and thoughtful members of the community. Nor is the practice confined to grown up men. Boys, even at the best schools, get the habit of smoking, because they think it manly and fashionable to do so; not unfrequently because they have the example set them by their tutors, and partly because

there is no friendly voice to warn them as to the special ill consequences to which it may give rise where the process of growth is not yet completed, and the organs are not yet fully developed.

"The foregoing observations relate to the habit of smoking, as it exists among us at the present time. But a still graver question remains to be considered. What will be the result if its habit be continued by future generations? It is but too true that the sins of the fathers are visited upon their children and their children's children. We may here take warning from the fate of the Red Indians of America. An intelligent American physician gives the following explanation of the gradual extinction of this remarkable people:— One generation of them become addicted to the use of the fire-water. They have a degenerate and comparatively imbecile progeny, who indulge in the same vicious habit with their parents. Their progeny is still more degenerate, and after a very few generations the race ceases altogether. We may also take warning from the history of another nation, who, some few centuries ago, while following the banners of Solyman the Magnificent, were the terror of Christendom, but who, since then, having become more addicted to tobacco smoking than any of the European nations, are now the lazy and lethargic Turks, held in contempt by all civilized communities.

"In thus placing together the consequences of intemperance in the use of alcohol, and that in the use of tobacco, I should be sorry to be misunderstood as regards these two kinds of intemperance to be in an equal degree pernicious and degrading.

"The inveterate tobacco smoker may be stupid and lazy, and the habit to which he is addicted may gradually tend to shorten his life, and deteriorate his offspring," but the dram drinker is quarrelsome, mischievous and often criminal. It is under the influence of gin that the burglar and the murderer become fitted for the task which they have undertaken. The best thing that can be said of the dram drinker is, that it induces disease which carries the poor wretch prematurely to the grave, and rids the world of the nuisance. But unfortunately in this, as in many other cases, what is wanting in quality is made up in quantity. There are checks on one of these evil habits which there are not on the other. The dram drinker, or to use a more general term, the drunkard, is held to be a noxious animal. He is an outcast from all decent society, while there is no such exclusion for the most assiduous smoker.

"The comparison of the effects of tobacco, with those of alcohol leads to the consideration of a much wider question than that which I set out. In all ages of which we have any record, mankind have been in the habit of resorting to the use of certain vegetable productions, not as contributing to nourishment, but on account of their having some peculiar influence as stimulants or sedatives (or in some other way) on the nervous system. Tobacco, alcohol, the Indian hemp, the kava of the South Sea Islanders, the Paraguay tea, coffee, and even tea, belong to this category. A disposition so universal may almost be regarded as an instinct, and there is sufficient reason to believe that, within certain limits, the indulgence of the instinct is useful. But we must not abuse our instincts. This is one of the

most important rules which man, as a responsible being, both for his own sake and that of others, is bound to observe. Even such moderate agents as tea and coffee, taken in excess, are prejudicial. How much more so are tobacco and alcohol, tending as they do, not only to the degradation of the individual, but to that of future generations of our species.

"If tobacco-smokers would limit themselves to the occassional indulgence of their appetite, they would do little harm either to themselves or others; but there is always danger that a sensual habit once begun may be carried to excess, and that danger is never so great as in the case of those who are not compelled by the necessities of their situation to be actively employed. For such persons the prudent course is to abstain from smoking altogether.

"Trusting that you and your readers will excuse me for having occupied so large a space in your columns,

"I am, sir, your obedient servant,

"August 27." "B. C. BRODIE.

3. Sir Benjamin Brodie's letter has led to a renewed discussion in the newspapers on the use and abuse of tobacco. It is really curious to observe how generally the views we expressed in our remarks on that letter have been echoed by the general press. The following passages from the *Saturday Review* afford a fair specimen of the line of argument generally adopted:—

"That smoking can be indulged in so as to injure health, is indisputable; that Nature sometimes gives warnings which show that even moderate smoking is to be avoided, either for a time or permanently, is equally notorious; and no man of sense thinks of neglecting such warnings. But is moderate smoking injurious when the ordinary rules of health are observed, and when no bad effects at the time are perceptible? This is a question of the very greatest interest, and unfortunately Sir Benjamin Brodie does not even suggest an answer to it. We wish some eminent medical men would answer this in plain language, and abstain from troubling us with tales about exceptional fools. We look in vain for any general statement in Sir Benjamin Brodie's letter which can guide us in the matter. He certainly tells us that two drops of the oil of tobacco will kill a cat. But it is evident either that men do not take two drops, or that two drops do not kill them; and, if it is said, that although the poison is not taken in sufficient quantities to kill at once, yet its accumulative force will kill in the long run, we ask how are we to know that? Sir Benjamin Brodie appeals to facts which seem to us exceedingly questionable. He tells us, for instance, that smoking tobacco has greatly increased in recent years among the upper classes in England, and that these classes consume much more tobacco now than they ever did before. We do not feel sure of this. From the first introduction of tobacco down to the middle, and perhaps almost to the close of the last century, pipes were smoked freely and constantly by the great majority of English gentlemen. Sir Benjamin Brodie again appeals to the history of the Turks to prove that a people of habital smokers must necessarily degenerate and become

gradually worn out. This is very unsatisfactory. Other nations, of habitual smokers have not degenerated. The Germans, for example, have smoked as hard as a nation can smoke for two centuries. A German smoker consumes much more and much stronger tobacco in the year than a Turk. But who will venture to say that the Germans have fallen off in physical power? So far as fine figures and healthy frames go, the troops of Prussia may compete with the troops of any nation in the world. If it is true that the Turks have degenerated, how do we know that tobacco is the cause of degeneration in a country where polygamy exists? But have the Turks degenerated in the sense that their bodies are less healthy and powerful than those of their forefathers were? The Turks are physically and morally a race far superior to the Greeks, and, indeed, to every race they rule over. Certainly they do not find it easy to govern a huge empire under circumstances of great difficulty, and make almost as bad a business of it as the Byzantine rulers who preceded them, and who never saw or smoked an ounce of tobacco. But that the Turks have to thank their very mild tobacco for their present political difficulties is by no means apparent * * * * Unfortunately, it is very difficult to collect evidence on these points, for all matters of health are considered to be within the jurisdiction of the doctors, and the doctors are not likely to ascertain what is the truth about smoking. They alone of all people are almost entirely prevented by their position and profession from smoking, and they set themselves against a practice which is not open to them to adopt. If, however, any person holding a position as eminent as that of Sir Benjamin Brodie chose to collect the facts accessible to him, he would be doing a great service to his generation. The chief medical men in the different states of the civilized world, and travelers who have visited ruder tribes, must have acquired a vast fund of experience by this time, if only it could be put together. We must repeat that we have no wish to uphold or advocate smoking, or to maintain an opinion that smoking is innocuous. What we want is some solid reason for thinking that tobacco in moderation is not as harmless to the constitution, with which it seems to agree, as sherry is; and, secondly, we should like to have it established whether the form of tobacco makes an essential difference in its wholesomeness, and whether the cigar is more injurious to health than a pipe."

4. Sir Benjamin Brodie's moderate estimate of the ill effects of tobacco we fancy to be somewhat overcharged. A drop of its essential oil on the tongue of a cat will, he says, destroy life in ten minutes. No doubt; but one hundred drops distributed over three hundred and sixty-five days would hardly have any effect at all on the cat, which has not the vital powers of a child five years old. We dissent also from the applicability of the instances adduced by Sir Benjamin Brodie of the pernicious effects of excesses in tobacco smoking, and which he holds up to us as warnings—namely, the decline of the Red Indians of America and of the Turks. The Red Indians had been smoking for ages before we knew of their very existence; indeed, it was from them we learned the practice; and they might have smoked on to the latest posterity without diminution of their numbers, had not fire-water, gunpowder, and the en-

croachment of cultivation on their hunting grounds prevented it. As to the Turks it is assuredly neither excess of tobacco smoking or of any other vicious indulgence that has changed their relative position to Europeans. They have not declined at all, for they have at present as much courage and more knowledge and intelligence than they had under Solyman the Magnificent. It is not the Turks that have fallen off, but we that have advanced at a pace with an Asiatic race, albeit planted for four centuries in the choicest regions of the globe, cannot keep up.—*Examiner.*

[At a meeting of the National Association for the promotion of social science, the following report from the department of public health was submitted, in which the learned writer displays an animosity against tobacco, worthy of King James I, who says: "If there be any herb in any place most opposite to God's herb of grace," it is tobacco.]

Influence of Tobacco Smoking on Public Health. By SIR CHARLES HASTINGS, M. D., D. C. L. Sir Charles Hastings commenced by observing that it might be considered one of the functions of the association to point out the evil effect on public health of certain active agents in daily use by the community. The one to which he would especially draw attention was tobacco. Tobacco is at present extensively consumed by all classes; it is a very active narcotic agent; its empyreumatic oil acts most deleteriously on the nervous system; and when it is concentrated death results from it. The author then quoted the account of the chemical nature of tobacco, as given by Professor Johnstone, of Durham, "that the chemical constituents of tobacco are three in number: a volatile oil, a volatile alkali, and an empyreumatic oil. The volatile oil has the odor of tobacco and possesses a bitter taste. On the mouth and throat it produces a sensation similar to that caused by tobacco smoke. When applied to the nose it occasions sneezing, and when taken internally it gives rise to giddiness, nausea, and an inclination to vomit. The volatile alkali has the odor of tobacco, an acrid, burning, long-continuing, tobacco taste, and possesses narcotic, and very poisonous qualities. In this latter respect it is scarcely inferior to prussic acid, a single drop being sufficient to kill a dog. Its vapor is so irritating that it is difficult to breathe in a room in which a single drop has been evaporated. A hundred pounds of the dry tobacco leaf yield about seven pounds of nicotin. In smoking a hundred grains of tobacco, therefore, say, a quarter of an ounce, there may be drawn into the mouth two grains or more of one of the most subtle of all known poisons. The empyreumatic oil is acrid and disagreeable to the taste, narcotic and poisonous. One drop applied to the tongue of a cat brought on convulsions and in two minutes occasioned death. The Hottentots are said to kill snakes by putting a drop of it on their tongues. Under its influence the reptiles die as instantaneously as if killed by an electric shock. It appears to act nearly in the same way as prussic acid. Experience proves that a large proportion of those who smoke or chew tobacco, do so under the conviction that it is always innocuous in its effects, and often

beneficial. Now, this is a mistake which the every day observation of medical practitioners can attest. For amongst the patients who consult us from various nervous and stomach complaints, it will be found that tobacco smokers form a large proportion. Indeed, we find, unexpectedly sometimes, on inquiry, that the habit of smoking is the source of very distressing ailments, which immediately or gradually subside on omitting the use of this drug. It is grievous to observe that this habit is prevailing among young people upon whom its effects are most likely to be prejudicial. Strikingly illustrative of this position is the fact, which has been very recently made public, that in the competitive examinations to which young persons are submitted in the military schools in France, the smokers of tobacco occupy the lowest place."

One of the most severe cases of epilepsy, which Sir Charles had ever seen was in a boy of twelve years of age, who had been for two years a tobacco smoker; he recovered only on being prevented from continuing the habit. It could, no doubt, be said, and it was true, that thousands pursue this practice without producing epilepsy; but many of these suffer from nervous and digestive disorders.

It was, then, important that the association should disseminate sound views on the action of tobacco, and should show that this drug cannot be used indiscriminately. An admonition from such a body would come with more force than from the medical profession, whose monitions could only find way among the sick, and those needing medical care, while the opinion of the association would permeate the community at large. Sir Charles Hastings then quoted from the opinion of Sir B. Brodie on the effects of tobacco on the nervous system.

The various institutions now formed and supported for the purpose of diffusing useful knowledge among the laboring classes, ought to be available to assist in this work, if their managers could be made awake to the importance of the question ; but in many instances these societies are not aware of the baneful action of tobacco on the frame. If they were, smoking rooms would not form a part of the establishment, whereby the onward progress of civilization is proposed to be insured. It is a sad reflection that it should be considered necessary to insure the attendance of members at a society, whose professed object is to advocate civilization by diffusing art and science, that there should be the means supplied for indulging in the evil habit of smoking, as in the clubs of the aristocracy. This Association may at any rate raise a warning voice against such erroneous proceedings, which must doubtless tend to enervate our population, and eventually to produce a degenerate race.

Sir Charles Hastings ended his paper with the following conclusions :

That the effects of tobacco-smoking are chiefly dependent upon an empyreumatic volatile oil, and other active principles, whose direct tendency is to act injuriously on the nervous system and digestive organs. That tobacco is extensively consumed by the community, and its use ought to be discouraged. That this Association emphatically records its conviction that societies formed for the purpose of promoting useful knowledge amongst the working classes, should on

no account provide smoking-rooms for the members.—*British Med. Jour.*, Oct. 6, 1860.

GALVANO-CAUSTIC OPERATIONS AND LARYNGOSCOPY.

[*Letters from Vienna:* Edited and translated by Dr. MERCER ADAM. *Edinburg Med. Jour.*, Oct., 1860.]

VIENNA, 18th August, 1860.

Science recognizes no nationality, and owns no fatherland; but it is the intellectual product and the common inheritance of all lands. The very vastness of the world in which it lives and moves constrains its disciples to band themselves together in a common league, and to hold spiritual converse with each other. Whatever of importance may occur at any spot on the surface of the globe should be made to traverse the world with rapidity; for every new thought is the germ of something greater in the future, and the more quickly it is promulgated the more speedily may it be expected to spring up and to yield us a golden fruitage. I have, therefore, great pleasure in now commencing a series of periodical reports on the state of medical science in Vienna, and in Germany generally, and enter upon my task in the confident belief that I shall be able to communicate to my professional brethren in Great Britain much that is truly valuable for them to know.

My readers must not accuse me of self-conceit, if, first of all, I speak of what is going on in Vienna, which, with its numerous and large medical institutions, and its phalanx of celebrated scientific men, offers us rich treasures of knowledge. But I promise, at no distant date, to discuss the medical doings of importance which are taking place elsewhere in Germany.

Two subjects have lately engrossed the attention of practicel men in Vienna—galvano-caustic operations, the surgeons; and laryngoscopy, the physicians. The former was introduced into Vienna by Dr. Zsigmondy, *Primär-wundarzt*, or chief-surgeon, in the *Allgemeine Krankenhaus*. He has been at great expense in the manufacture and improvement of Middeldorpf's ingenious apparatus, which was the first employed in this city; and he has used it very extensively in his practice. He soon convinced the profession of its manifold utility, and its applicability to all sorts of operations; and he has fairly established for it an honorable place among our recognized surgical instruments. This speaks greatly in favor of the apparatus, if, setting aside the charm of novelty which attaches for a time to many inventions, we reflect how very few new instruments are really worthy of being admitted into the surgical armamentarium. Zsigmondy has published the results of his operations with the galvano-caustic apparatus, in a series of articles in the *Wein Medic. Wochenschrift*, and has sent reprints of these papers to most of his friends. It reflects very great credit on Dr. Zsigmondy, that here, in Vienna, where the most trifling surgical matters are immediately taken up and monopolized by eminent professors, he has been able, unaided and single-handed, to bring his system into good repute and extensive popularity in so very short a time.

As regards laryngoscopy, I think that this novelty has wrought more mischief than benefit in Vienna; for, ever since it was first heard of, it has been the occasion of constant squabbles and miserable contentions. First of all, the profession began to quarrel about the priority of the invention, and as to who was entitled to the honor of the discovery. Innumerable articles appeared in the medical press, containing the most contradictory statements, showing how very little the writers really knew about the subject, which were evidently published by men who rushed into print for the sake of appearing as authors. The controversy has lately broken out afresh, and little wonder, for one of these critics has solemnly written that a patient should not be laid on his face if we wish to look down his windpipe!

You, in England, must not be jealous of foreigners claiming all the credit of the discovery, for some share of the merit undoubtedly belongs to you. At the commencement of the discussion on the subject, Dr. Joseph Gruber, of Vienna, reminded the disputants that, in honor, justice and truth, a share of the credit of its invention should be awarded to your distinguished countryman, Mr. Wilde, of Dublin, who, in his admirable work on Diseases of the Ear, had recommended a similar instrument for the purpose of examining the pharyngeal extremity of the Eustachian tube. To be sure, the little mirror was not called a laryngoscope by Mr. Wilde; but still, to quote the words of one of our most celebrated poets, "Wo Begriffe fehlen, stellt zur rechten Zeit das Wort sich ein."

By means of this little instrument we have been enabled to examine carefully the whole of the interior of the larynx, and to watch the mechanism of the complex organ of voice. The instrument may prove very useful both in a physiological and pathological point of view, but, as yet, we have not gained much additional knowledge from its employment. Should anything of importance occur in connection with its use, you may depend on my losing no time in acquainting you with the full particulars. Meanwhile, I would advise those of your readers who may feel an interest in the matter, and who desire to become acquainted with the many minor points connected with it, to consult the files of the *Med. Wochenschrift*, the *Zeitschrift der Gessellschaft der Aerzte*, the *Allgemeine Wiener Med. Zeitung*, and the *Zeitsch. für practische Heilkunde*. *Ma foi!* I promise them they will find more written therein than they have patience to read.

Apropos of professional journals, I must inform you that we are to have a new medical periodical. A Vienna physician, Dr. Markbreiter, has discovered that "a system of rational therapeutics is the sole aim and end of all medical art, and that every individual natural science is only to be considered as auxiliary to the realization of this beautiful and sublime object." He is, therefore, commencing a journal which is intended to adapt this programme faithfully to the requirements of all accomplished practical physicians. It is to be called the *Wiener Medicinal-Halle* (the "Vienna Medical Hall"), and is to appear in weekly numbers as well as in monthly parts. The first specimen number has just been issued. It might have had a happier name than that which has been given to it; for "Halls,"

or emporiums are intended for the reception of more material products than are likely to be contained in its pages. People fancy the whole affair has been got up to attract notoriety. We shall see.

The well-known *Zeitschrift der K. K. Gesellschaft der Aerzte* (the "Journal of the Imperial Society of Physicians") is also about to undergo a metamorphosis. After the 1st January, 1861, it will be issued in weekly numbers, as well as in monthly parts, and the editorship will then pass into new hands. In fact, it will be conducted by several committees (composed of members of the Society), which have been appointed to take charge of all the various departments of medical science, and to publish periodical reports upon their specialties in the pages of the Journal. So, in future, according to this novel plan, we may expect to be instructed about tumors by the Tumor Committee, about fractures by the Fracture Committee, and so on. Singular to say, the Society, in arranging their programme of these special departments, have entirely omitted the science of Otiatrics; so that the readers of the Journal will have no one to give them any information about diseases of the organ of hearing. Were I disposed to be malicious and ill-natured, I might comment very severely on this unwarrantable neglect of so important a subject as aural surgery; but perhaps the Society may yet think better of the matter, and repair the omission. "Better late than never."

Dr. Lunda, a young military surgeon, has lately published a paper in the *Med. Wochenschrift*, which has attracted considerable notice, detailing the wonderfully successful results which have been obtained by him in the treatment of *Blennorrhœa oculi*, or purulent ophthalmia, by the application of the essence of sabine to the affected organ. Our oculists will assuredly be stimulated to make further experiments with this new remedy; and I hope that they will be able to confirm Lunda's favorable report.

At present, profound quiet reigns in all our scientific societies; for, as this is holiday season, there are no meetings held or business transacted. So soon as the period of activity begins, you may expect to have reports from me concerning all that is worthy of record.

Most of our professors are off on their annual vacation tours. Before they left town we had the election of a new Dean of Faculty, in which office Professor Kurzak succeeded Professor Rokitansky. The Dean is chosen annually; and usually, long before the day of election, it is not difficult to guess who will be chosen to the office.

Here, for the present, I conclude; and I trust very shortly to be able to send you another and a longer letter.

EXAMPLES OF LONGEVITY IN THE COLORED RACE, IN 1860, ALL EXCEPT ONE BEING IN THE SOUTHERN UNITED STATES.

Cornelia Leslie, a negress. Mr. Morena, a U. S. census-taker for 1860, for Florida, reports that the above-named negress is aged 125 years. She was born in the State of Georgia, at a place called Silver Bluff; has a distinct recollection of the war of the Revolution, and remembers the siege of Savannah, in 1778, when that city

was taken by the British. The woman, although so far advanced in years, is remarkably healthy and strong, and walks half a mile every Sunday to attend church. She is the slave of her own son, who is a free negro.

Boubacar Labarre, born in Africa, died in New Orleans, aged 115.

Lizzy Gray. Old Lizzy Gray died on the farm of D E. T. Mims, Edgefield, S. C., at the advanced age of 127 years. Her physician, in an obituary notice which appears in the *Edgefield Advertiser*, says that "she was imported from Africa during the Revolution, after having borne four children in that country. During the Revolution she was a prisoner on board a British ship. She was educated in her youth under the influence of Mahommedan tenets, and although she united herself many years ago to the Methodist Church, she ever said that Christ 'built He first church in Mecca, and He grave was da.'"

Gov. Blacksnake, the "old Indian," died at his residence on the Alleghany Reservation, eight miles from East Randolph, Cattaragus county, N. Y., December 26, at the advanced age of 123 years. He was, probably, before his death, the oldest Indian living. He was in the French war previous to the Revolution; also in the Revolutionary war, and sided with the Americans. He was a great aid to Washington, acting in the capacity of a runner and bearer of dispatches. His family have now in their possession a silver medal that was presented by Gen. Washington, and on which the "old Governor" put more value than on all else he had.

Milly Lamar. In the list of interments recorded by the sexton for the last week, was that of a centenarian, a negress, Milly Lamar, who had reached the advanced age of 145 years. This negress had been the mother of thirteen children, three of whom were borne before the Revolutionary war. She was owned, at the time of her death, by G. B. Lamar, of Augusta, and remembered distinctly when the forest trees grew luxuriantly where that city of sixteen thousand inhabitants now stands. Remaining a widow ten years after the death of her husband, she married again, and the other ten children were born to her. The youngest of these is living in this city, and belongs to Mr. James Ray, and is now sixty-three years old. Old Milly was blind for sixteen years before her death, and there is scarcely any doubt but that she was really as old as represented.—*Macon Tel.*

George, a negro of Virginia, dies, aged 120.

A female slave of F. Hurtell, of Mobile, dies (in Oct.), aged 110.

PROVISIONAL TABLEAU OF YELLOW FEVER FOR 1860.

Pernambuco—Yellow fever prevails in the spring; U. S. Consul Stapp dies of this disease; great drought.

Curaçoa—Yellow fever prevalent.

Belize (Honduras)—Prevalent among the unacclimated.

British West Indies—Yellow fever begins to prevail towards the close of summer.

Havana, and Porto Rico—In the former, in June, 699 cases, with only 82 deaths, were reported.

Quarantine, June 23, proclaimed in Louisiana, against vessels from Havana, and on July 14, against all vessels from the following ports, also: Matanzas, Trinidad, Cardenas and St. Iago, all in the Island of Cuba; Kingston, Port Royal and Montego Bay, on the Island of Jamaica; Jacmel and Port-au-Prince, on the Island of St. Domingo; the Islands of St. Thomas, Martinique and Guadaloupe; Campeachy, in Yucatan; Belize, in Honduras; Vera Cruz, Alvarado, Tampico and Tuspan, in Mexico; San Juan de Nicaragua, Chagres, Aspinwall and Porto Bello, in Central America; Maricaibo, in Venezuela; Laguayra, in the Island of Trinidad; Rio Janeiro, Para and Cayenne, in South America; and Ruatan Island.

New Orleans—Fatal cases of yellow fever in May, 3; first two weeks of June, 7; five weeks ending with August, 11; September, 5.

Charleston—Fatal cases of yellow fever: August, 2; Sept., 8.

Mobile—First two weeks of October: Four or five fatal cases.

Lisbon (Portugal).—A custom-house officer in Lisbon, who was attacked on the 22d of July, died on the 27th. Other cases followed. Active hygienic measures were rigorously enforced, with the view of preventing the spread of the epidemic. (*Gazeta Med. de Lisboa*, Sept. 1, 1860. *Un. Méd.*, Sept. 27.

PRACTICAL MEN.

Those were practical men who resisted the theory of Mr. Arkwright's machine, under pretence of throwing the poor out of employment; those were practical men, who, being wigmakers, petitioned George III to cut off his hair and wear a peruke, in order to set the fashion. Imagine the contemptuous scorn with which the honest wigmakers must have regarded a theorist opposed to wigs * * * The public only reward in science that which is addressed to their wants. The application of science to useful purposes may thus be left to the public for reward: not so the *discovery* of the theories on which the application is founded.—(*England.* Bulwer.)

REPTILIAN LEATHER.

"At a late sitting of the French Academy of Sciences, Dr. Jules Cloquet produced a pair of boots made of the tanned skin of a boa constrictor. The material is remarkably strong and supple; the scales have preserved their natural imbrication and color after the process of tanning, and the inside of the skin displays the marks of the scales in alternate reliefs and depressions. Dr. Cloquet, on this occasion observed that it would be desirable to make further attempts to introduce the skins of the inferior vertebrata into trade, seeing that, as to thickness and durability they decidedly offer greater advantages than those of the superior classes. He concluded by stating that he intended to give one of his specimens to the Museum of Natural History; the other to the Cabinet of the Zoological Garden of Acclimatization.

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MARCH, 1861.

NEW MEDICAL JOURNALS.

The Baltimore Journal of Medicine: Edited by Edward Warren, M. D., Professor of Materia Medica, in the University of Maryland. Bi-monthly. January, 1861.

The London Medical Review: Monthly. London: M. Baillière. New York: Baillière Brothers.

BOOKS AND PAMPHLETS RECEIVED.

Annual Report of the Board of Regents of the Smithsonian Institution, for the year 1859. Pp. 460, 8vo. Washington: 1860. From Hon. Sam'l S. Cox, M. C.

On Diseases Peculiar to Women, including Displacements of the Uterus: By Hugh L. Hodge, M. D., Professor of Obstetrics and Diseases of Women and Children in the University of Pennsylvania. With Original Illustrations. Pp. 469, 8vo. Philadelphia: Blanchard & Lea. 1860. From Mr. T. L. White, Bookseller, 106 Canal street, N. O.

On Diabetes, and its Successful Treatment: By John M. Camplin, M. D., F. L. S. From the second London edition. Pp. 87, 12mo. New York: S. S. & W. Wood. 1861. From Mr. T. L. White, Bookseller, 106 Canal street, N. O.

On Diphtheria: By Edward Headlam Greenhow, M. D., Fellow of the Royal College of Physicians, Physician to the Western General Dispensary, and Lecturer on Public Health at St. Thomas's Hospital. Pp. 160, 8vo. New York: Baillière Brothers. 1861.

The New American Cyclopædia; a Popular Dictionary of General Knowledge: Edited by George Ripley and Charles A. Dana. Volume X. Jerusalem—Macferrin. Pp. 788, 8vo; double columns. New York: Appleton & Co. London: Little Britain. MDCCCLX. From Mr. W. C. Morrell, agent, (successor to Mr. S. Coleman,) N. O.

An Epitome of Surgery: By J. Beadnell Gill, M. D., author of an Epitome of Botany, late House Surgeon, etc., etc., at the London Hospital. Pp. 94, 32mo. London: H. Baillière. New York: Baillière Brothers. From Messrs. J. C. Morgan & Co., Booksellers, N. O.

Compendium of Human Histology: By C. Morell, Professor Agrégé à la Faculté de Médecine de Strasbourg; illustrated by 28 plates. Translated and edited by W. H. Van Buren, M. D., Professor of General and Descriptive Anatomy in the University of New York, etc., etc. Pp. 207, 8vo. New York: Baillière Brothers. 1861. From Messrs. J. C. Morgan & Co., Booksellers, N. O.

The Pocket Anatomist: for the Use of Students: By M. H. Hilles, formerly Lecturer on Anatomy and Physiology at the Westminster Hospital School of Medicine, etc. Pp. 263, 24mo. Philadelphia: Lindsay & Blakiston. 1860. From Messrs. J. C. Morgan & Co., Booksellers, N. O.

Communications of the Rhode Island Medical Society, for 1860. Pp. 65 to 83.

A Lecture: By M. L. Linton, M. D., Professor of the Theory and Practice of Medicine. St. Louis: 1860. Pp. 24. From the Author.

The Retrospect of Practical Medicine and Surgery, being a Half-Yearly Journal: Edited by W. Braithwaite, M. D., Lecturer on Obstetric Medicine at the Leeds School of Medicine, etc., and J. Braithwaite M. B. Part XLII: January, 1861. Uniform American Edition. New York: W. A. Townsend & Co. Pp. 345, 8vo.

A Practical Treatise on Phthisis Pulmonalis: embracing its Pathology, Causes, Symptoms, and Treatment: By L. M. Lawson, M. D., Professor of Clinical Medicine in the University of Louisiana, Visiting Physician to the New Orleans Charity Hospital, etc. Pp. 557, 8vo. Cincinnati: Rickey, Mallory & Co. New York: S. S. & W. Wood. 1861. From Mr. T. L. White, Bookseller, 106 Canal st., N. O.

The New American Cyclopædia; a Dictionary of General Knowledge: Edited by George Ripley and Charles A. Dana. Volume XI. Macgillivray—Moxa. Pp. 788; Index, vii; royal 8vo; double columns. New York: D. Appleton & Co. London: 16 Little Britain. MDCCCLXI. From Mr. W. C. Morrell, Bookseller, 131 Canal street, N. O.

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treated with cooling draughts and revulsives; died next morning about fourteen hours after admission.

Dissection, ten minutes after death:

Body universally warm; skin and subconjunctival tissue yellow; the veins of the extremities, distended with blood, which flowed rapidly after venesection. The fingers strongly contracted; the muscles natural; the abdomen prominent; blood running from the mouth; the lower parts of the body, as well as the superior, free from cadaveric infiltration or injection; the weight of the body estimated at more than two hundred pounds.

The *adipose tissue* developed in a most extraordinary degree, being on the chest about one inch deep; on the abdomen and thighs two inches; in the omenta, in the mesentery and over the kidneys, in many places from one to two inches; much of the large intestine surrounded with fat as were the mesenteric glands and blood vessels. These adipose accumulations were firm, of a pale golden color, free from serosity, and were estimated at fifteen pounds, independently of peripheral deposits.

Head.—Opacity of the arachnoid; moderate vascularity, and with turgescence of the pia mater increasing towards the base of the brain, and in the upper portion of the spinal marrow; serosity, both within and without the ventricles, about six ounces.

Chest.—The mucous membrane of the air-passages of a dull, red color, loaded with blood. The lungs completely distended, filling the chest, crepitant upon their exterior portions, with extensive central hæmorrhagic infiltration with solidified blood, which cut in smooth slices, appearing impermeable to air; the bronchial tubes contained bloody froth; the apex of the right lung adherent, by white, bloodless tissue; the diaphragm and mediastinum loaded with fat; liquor pericardii yellow; the right ventricle of the heart enlarged moderately; the great aörta unchanged in color, somewhat thickened, was four times larger than usual; its serous coat loaded with about one dozen of bony plates nearly as large as the nail of the little finger, extending from the origin of the aörta to the summit of its great arch.

Abdomen.—Mouth and œsophagus full of blood; the stomach blanched, small; contained about four ounces of black vomit, without a tinge of blood; the mucous coat, free from arborization, was thick, much folded or wrinkled, displaying, after disintegrating the inner surface, very minute points or dots of blood, widening towards

THE

NEW ORLEANS

MEDICAL AND SURGICAL JOURNAL.

MARCH, 1861.

ORIGINAL COMMUNICATIONS.

ART I.—*Contributions to the Pathological Anatomy and Natural History of Yellow Fever:* By BENNET DOWLER, M. D.

NUMBER THREE.

"In medicine the observation and recording of phenomena has been held to be an easy and trifling task, which any tyro was competent to do. Hence half the error and the uncertainty of medicine. Inaccurate—that is erroneous and incomplete observation—has been the cause that, till within a few years, the fevers of cold countries have been so absolutely uncomprehended, and that fevers of hot countries are still shrouded in obscurity. The most valuable addition any one could at present make to our knowledge of tropical fevers, would be a simple record of all the cases in an epidemic. These cases should be observed with the keen tact of a Chomel, and recorded with the fidelity of a Louis. We want no explanation or word of comment added to them; we want merely cases. Then, when the numbers are sufficient, we should certainly begin to put order into this chaos. And let not any one, who may have the opportunities, be deterred from the task, by that fallacious, and, we beg to say, most reprehensible argument, with which some people may favor him, viz: that his cases will be tedious, heavy, and unread. Unread they will be certainly, by some of the profession, who consider their routine practice as great an effort as their intellect will bear; but read and analyzed we will venture to say they will be, by those who think no labor too great, if they can fix safely the foundations of Medicine, and for whom, if *accurately* reported, no cases can be too long, no observations too minute. Only before the task is commenced, let the observer feel that his powers are equal to it; let him bear in mind the example of Louis, who recorded most carefully, for a long time, that he might train himself to his duty, and then, throwing his probationary cases aside as too uncertain for use, began to make those remarkable series of observations, which have linked his name forever, with the greatest improvement in modern medicine, the employment of a correct method of studying his science."—*British and Foreign Medico-Chirurgical Review.*

XX.

J. B., born in Germany, aged forty-four, a butcher, resident two weeks, sick five days; was admitted into the hospital Nov. 4; he walked up several long flights of stairs, at the same time throwing up blood and black vomit; senses apparently unaffected; was

the muscular coat; the mucous tissue of the duodenum thin, rough, or mammillated, and infiltrated with a fine, powder-like substance, black as charcoal, not removable by washing or slight friction, but imbedded in the tissue. These small specks, resembling those sometimes seen upon the surface of the apple, being distinct and very numerous, gave the tissue a black or gray appearance, according to their concentrated or isolated location; the jejunum contained bloody black vomit, the upper third of the ileum a gray chylous paste—the residue, thick, black vomit; the large intestine (the cæcum, colon and rectum) contracted to the size of the thumb, being scarcely pervious to the scissors, contained nothing but a quantity of dry, inodorous, friable, black crumbs, balls or scybala of variable size; the intestine blanched, bloodless, thick, firm, elastic, and scarcely moist within, without gaseous distention, being cord-like, except where fæcal lumps gave a knotted configuration; the submucous tissue of the small intestine injected; mesenteric glands deeply imbedded in adipose tissue, natural; the urinary bladder, which contained about six ounces of urine, had several button-shaped, ecchymosed spots, or rather clots in its submucous tissue; the mucous coat of the urethra of a dark red; the spleen somewhat diminished in cohesion; the liver straw-colored anæmic, being rather indurated; the gall-bladder hypertrophied from the infiltration of its coats, by a semi-transparent, white, gelatinoid substance, which thickened the walls of the sack to about half an inch; this œdematous sack, which resembled a dropsical or fermenting oyster, contained about an ounce of fluid, like the albumen of the hen's egg, together with twenty biliary calculi, of a dark hue of various shapes, being brittle, crumbling under firm pressure by the hand, without staining, breaking like aloes, with a glossy fracture on being desiccated, being insoluble and sinking in water; several of these concretions weighed eight grains each; their structure appeared to be homogeneous, without nuclei and stratification or smooth worn facets.

The intestinal canal emitted no fæcal or other offensive odor. The blood effused in the dissection was natural in appearance, and coagulated normally.

XXI.

A. H., German peddler, aged forty-three, resident two years, sick four days, but has been walking about until to-day (Sept. 13), complaining of little except an oppression of his stomach, though with-

out vomiting ; senses normal. In the evening, hæmorrhages from his nose and from between his toes took place, without any wounds or abrasions. An enema, non-medicated drinks, and cupping of the abdomen, were ordered. On the following day, his understanding being confused, his physician directed the nape and abdomen to be cupped, and thirty ounces of blood to be taken from the arm.* Non-medicated drinks directed.

The next morning, at six o'clock, the patient died.

Dissection, five hours after death : *Body* stout, free from emaciation ; skin and eyes yellow ; limbs and neck rigid ; abdomen convex, emitting a putrefactive odor.

Head.—Arachnoid opaque, pia mater vascular—both tenacious ; serosity, about three ounces in the arachnoidal sack, and in the ventricles ; the choroid plexus injected, and loaded with several fatty, flattened tumors, half an inch long and about the sixth of an inch broad ; the substance of the brain natural.

Neck.—Two ecchymosed spots as large as the nail in the mucous tissue of the œsophagus.

Chest.—Right lung universally adherent to the costal pleura by bloodless bands ; the pulmonary parenchyma loaded with blood, and augmented in weight ; much dark blood collected in the cavities of the chest, coagulating strongly.

Abdomen.—Stomach, which was large, contained about one pound of bloody serosity ; the mucous tissues were deeply colored with black, longitudinal stripes or bands, drawn from the cardia to the pylorus, as if charred with a red-hot iron, being puffy, brittle, elevated, dark red on the margins ; the stripes wide as the finger, being ragged and sloughing ; at the pylorus, these stripes were converged into an uniform, black, shreddy, spongy tissue, half an inch thick, gangrenous, leaving the serous and even the muscular coat unchanged. About three-fourths of the mucous coat of the stomach appeared gangrenous, the residue swollen or thickened and reddish from punctiform injection, but without arborizations. In the neighborhood of the pyloris, duodenum, and bile ducts, the sub-serous and areolar tissue was infiltrated with yellow gelatinoid matter ; the

* At this period of an epidemic a reliable observer informed me, that a man entered the hospital, whose case was pronounced yellow fever, by a Visiting Physician, who at once prescribed venesection until fainting should take place. Nothing, however, was done for the relief of the patient, who, after a good night's rest, felt quite well in the morning, when he asked for and obtained his discharge from the hospital—a fact showing that a skillful diagnostician may be sometimes mistaken.

Peyerian patches were slightly developed in the lower portion of the ileum; the cæcal mucous tissue of a purplish red color, which reappeared in the rectum; the colon loaded with well-digested, but ash-colored stools. The liver somewhat yellow, enlarged, and, perhaps diminished in cohesion; bile green; kidneys engorged; other organs natural.

The absence of serious gastric symptoms in this case—the intensity of the gastric lesions rivaling the morbid appearances from acute poisonings with the most corrosive agents, should teach great caution, especially in medico-legal cases, in pronouncing on the characteristics of gastritis, from mere symptoms.

This patient, who had taken no medicine but simple beverages, and who complained of no gastric symptoms or vomiting, had, nevertheless, a gangrenous stomach. On the other hand, individuals die of yellow fever having had violent gastric pains and vomiting, whose stomachs are found to be blanched and of natural consistence.

XXII.

* * * A muscular man, of medium size, aged about twenty-five, died of yellow fever on the night of the 27th of October.

Autopsy, about ten hours after death.

Body, cold, rigid; abdomen, concave; fat, scanty and yellow; muscles, natural; skin and eyes, yellow.

Head.—Serosity, two ounces; arachnoid, thickened, milky; pia mater, loaded with gelatinous infiltration.

Chest.—Pericardium much thickened, nearly every where strongly adherent to the heart, without redness, or hyperæmia. Heart, healthy. Lungs, distended, firmly adherent to the costal pleuræ by thick infiltrated tissues or false membranes, separable from the interior of the chest and diaphragm only by dissection; much of the pulmonary substance being firm, heavy, nearly incompressible (hepatized), and non-crepitant; the right lung, from its apex to its base, loaded with innumerable tubercles, from the size of a pea to that of an almond, some hard, others soft, like yellow lard. There were five or six excavations, varying from the size of a hazel nut to a hen's egg, some being filled with grumous blood. On washing out these cavities, they were found to be lined with crusty or cheesy scabs. The left lung also had some tuberculous deposits. The mucous membranes of the air passages were of a dark red color, and congested.

Abdomen.—Stomach small, contained black vomit, its mucous membrane slightly softened. Bowels contained a gray paste, and were contracted in their calibre. The large intestine contained a little blood, the mucous membrane being dotted with reddish elevated crusts, from the size of a grain of flaxseed to that of a water-melon seed, which, on being removed with the nail, left excavations, the interspaces being pale and non-vascular. The spleen, enlarged about four times, adhered in many places to contiguous organs; its capsule, variegated with whitish, greenish and bluish colors, was two or three lines thick, and of a cartilaginous consistence; the consistence of the parenchyma of this organ was broken up into a black pulp. The lymphatic ganglia hypertrophied, some being hard, others softened, and some, especially in the neck, infiltrated with pus. Liver large, pale, inclining to brown; coats diminished in adhesion; its substance brittle, with central softening; its gall-bladder thickened, contained a few drops of molasses-like liquid.

Other organs, natural.

XXIII.

A. R., born in Spain, aged forty-two, a fisherman, resident in Louisiana twelve years; admitted Sept. 5th, and died delirious the same night.

Dissection sixteen hours after death.

Body stout and muscular; skin, eyes, and fat yellow.

Head. (Opened last)—The dura mater, much loaded with blood, with its arachnoidal lining, extensively adherent to the cerebral envelopes; the cerebral falx firmly adherent to the hemispheres, and loaded with gelatanoid exudation; the arachnoid milky, thickened, and tenacious, its cerebral, subserous tissue, on the convexities of the hemispheres, infiltrated with reddish lymph; the pia mater, little else than a net work of arteries and veins—the latter being much enlarged and turgid. The vessels of the ventricles, choroid, etc., being in the same state, serosity two ounces; substance of the brain natural.

Chest.—Lungs distended by engorgement, and extensively adherent by red tissues; heart filled with yellow polypi; mucous membranes red.

Abdomen.—Redness of the mucous coat of the stomach, near the cardia, with injection in the submucous tissue; moderate injection of the upper part of the small intestine; liver somewhat enlarged, of

pale chocolate color, with central brittleness; bile dark and thick; other organs natural.

XXIV.

E. F., a widow, born in Germany, aged twenty-four, resident one year, sick six days, died October 27th.

Dissection about ten hours after death.

Body, of small size, nearly cold; skin, eyes, and fat, yellow; no emaciation; sordes on the teeth; abdomen concave, with numerous white striæ like cicatrices on the hypogastric region; elongation of the nipple.

Head.—Pia mater vascular; its vessels large and turgescent.

Chest.—Lungs expanded, filling the chest; crepitant; liquor pericardii, about two ounces, being yellow.

Abdomen.—The great omentum had a gummy exudation on its surface; was roseate; the mesentary injected, its glands, red and enlarged; stomach contained about a pound of black vomit; about two-thirds of its mucous tissue, more or less softened, portions being pulpy or attenuated, leaving dirty, white, ragged patches; the muscular and serous coats pale; bowels empty and collapsed, portions being contracted; liver of a pale, mahogany color; its substance brittle; its large vessels distended with blood; its coats apparently diminished in adhesion to the parenchyma; bile, molasses-like in color and consistence; right ovanum infiltrated with blood; other organs natural.

XXV.

* * * born in England; agsd 20; last from London; resident eight months; ship clerk; recently cured of an intermittent, but for some weeks affected with chancres; was taken with frontal and spinal pain and fever without chills, on the 16th of July: these symptoms have persisted until the present, July 21st: senses regular, except at night when delirium takes place; does not appear mentally dejected, although he says that he "fears he is in for it;" tongue, broad, reddish, dry in the middle, with yellowish fur on the sides; but in an hour, after much vomiting, it became moist; for two days has been throwing up without effort, straining, nausea, or pain, a liquid which resembles a strong infusion of coffee, with sediment like coffee grounds; thirsty; abdomen, particularly in the region of the liver, exquisitely tender to the touch; pulse small, quick, wiry, varying from 110 to 120; subsultus; skin yellow, hot, dotted with mosquito

petechiæ on all exposed parts ; eyes yellow, and minutely injected ; respiration without pain or cough ; percussion gives a dull sound from the right lung ; chancres on the prepuce, with hard, raised, and warty margins, having central excavations. Treatment : cupping and poulticing of the abdomen ; seidlitz powders, which he vomited immediately.

The following day : insensible, comatose ; respiration stertorous ; muscular trembles ; moans ; cannot vomit, but black vomit matter dribbles from the angles of his mouth ; eyes half closed ; pulse nearly extinct in his instep, but distinct, rapid, and hard in the wrist. Died tranquilly at 3, P. M.

Dissection seventeen hours after death.

Body, moderately fat and muscular ; skin, eyes, and fat, yellow ; muscles natural ; blood dark and fluid.

Head.—Serosity, about two ounces, being faintly yellow ; subarachnoid yellow, serous infiltration ; pia mater vascular ; the arachnoid increased in tenacity.

Chest.—Mucous tissues red ; lungs loaded with blood (congested) and augmented in weight.

Mouth, coated with black vomit matter.

Abdomen.—Stomach contained a thick, and deeply colored black vomit ; the mucous tissue at the cardia faintly colored with dark red, being softened ; the residue of this tissue, thick, tough, and lead-colored ; the jejunum contained about one pound of black vomit matter as dark as lamp-black, and like honey in consistence, which, on dilution, displayed no bilious or bloody tinge, scarcely coloring water, in which it subsided rapidly ; in the large intestine, a little semi-fluid fæces of a dull yellow color, devoid of fæcal smell ; spleen tenacious ; liver of a yellowish mustard color ; in the gall-bladder, yellow bile. Other organs natural.

XXVI.

J. R., born in Maryland, aged twenty-five, stone cutter ; has traveled much in the South for two or three years ; had jaundice last year ; drinks moderately ; was taken July 6th, with chills, fever, pains in the flesh, cæcum and loins, without vertigo or headache ; much vomiting of dark yellow bile. During the whole time of his illness, six days, the pains in the cæcum, ascending arch of the colon, and right lumbar region have been intense.

Treatment—Sponging with nit. mur. acid; cataplasms to the abdomen.

July 12, noon.—Heat of the skin natural, its color intensely yellow, inclining to dark, being moist; eyes injected, ecchymosed, yellow; white objects appear yellow; thirst; no vomiting to-day, though oppressed at the stomach; stools thin and muddy; urine, a yellowish red; tongue, respiration, pulse, intellect, regular; full inspirations and pressure increase the acute pain at the origin and along the tract of the ascending colon; copious nasal hæmorrhage.

13th, died. The body, large and without emaciation, was observed for one hour after death; the skin was very hot, and was constantly growing hotter to the touch, being very yellow, without petechiæ, stripes or spots; moderate convexity of the abdomen, being most prominent over the caput coli; muscles, contractile, natural and large; fat yellow.

Dissection, seventeen hours after death.

Neck, distended with gas; skin of the head greenish; bloody foam issuing from the mouth; skin yellow, and marbled with purplish spots; muscles firm; veins loaded with dark blood; both thick and fluid; black clots in the femoral veins.

Head.—Yellow gelatinoid matter in the frontal sinus; injection of the veins of the pia mater in dependent parts, elevated portions being bloodless; the membranes firm.

Chest.—Mucous membranes reddish, especially in the dependent parts.

Abdomen.—Mucous coat of the stomach thinned at the cardia, generally tinted with yellow; six inches of the lower end of the ileum contracted—its mucous tissue red, vascular, injected, thickened, firm: these appearances were found in portions of the jejunum. The sub-serous coat of the cæcum, and much of the sub-peritoneal tissue, from the psoas magnus to the groin, were red, injected, vascular or gangrenous: these changes involved the abdominal muscles and integuments, at the groin of the right side. The right kidney engorged, tumid, indurated, enlarged about three times; the ureter red, injected, and infiltrated with sanguineous and yellow gelatinoid matter, giving it the appearance of a bloody knotted cord as large as the finger. The left kidney engorged and somewhat enlarged. The cæcal mucous coat thin, green, soft. The ascending colon had, in all its coats, thickening and injection, in many places

quite to the rectum. The large intestine had red patches. The small intestine contained about two pounds of liquid, like molasses and soot mixed. The large intestine contained some masses like gray paste and blood. The spleen dark, soft, gaseous, crepitating, being enlarged about three times. The bladder contained a teaspoonful of bloody pus, was contracted to the size of a hen's egg, its substance apparently wasted. The liver, enlarged about three times, was diminished in cohesion, and of a pale yellow; membranes but slightly adherent, and bloodless; the gall-bladder contained yellow, greenish bile.

XXVII.

L. F., born in France, last from Havana, resident three years; now a woodcutter, formerly a sailor; sick one week with fever, headache, spinal and muscular pains, which were always most severe at night; says that in 1841, three years ago, he had an attack of yellow fever; senses natural; is quiet; skin cool, and of a darkish golden hue; eyes yellow; moderately emaciated; slight headache; respiration easy; pulse regular and soft; tongue natural; abdomen supple; right hypochondrium painful under pressure. For the next two days his symptoms varied but little; on the third day, copious nasal hæmorrhage, black and bloody vomitings, and similar defecations took place, and persisted until his death, on the next day. His treatment during the last four days consisted in cupping, nitro-muriatic baths, five grains of blue mass, sponging, and gummed water.*

Dissection two hours after death.

Body.—Hot; muscles natural; blood dark, but coagulates firmly; the skin, eyes, omenta, mesentery, pancreas, portions of the kidneys, urinary bladder, tendons, fasciæ periosteum, the adipose, serous, mucous and fibrous membranes, generally very yellow, intensely so in the great tendons, cartilages and faciæ.

Head.—Arachnoid and pia mater thickened, opaque, tenacious, much infiltrated on the convexity of the hemispheres, with gelatinoid exudations, variegated with yellow and gray; serosity about one ounce; dura mater, yellow; brain of good consistence.

Chest.—Lungs discolored in many places with melanoid matter.

Abdomen.—Stomach of good size, rugous within; all its coats yellow; from eight to twelve ounces of black vomit, both fluid and

* Some physicians regarded this case as jaundice; some gastro-duodenitis; others as yellow fever; with the latter I concurred.

flakey; the lower third of the ileum had several isolated, elliptical, pustular patches; in its mucous membrane the large intestine, beginning in the cæcum, was more or less dotted with irregular pustular patches, having numerous fungoid granulations, nearly as soft as brain. The bowels much collapsed, contained little except small portions of blood and black vomit; the liver of good size and consistence, but rather slightly adherent to its coats, was variegated with gray and cork colors; gall-bladder distended with thick, dark bile, which flowed freely upon pressure into the duodenum; kidneys yellow; other organs natural, except extensive yellow tintings.

XXVIII.

J. G., born in Maryland, aged twenty-four, resident ten, and sick seven days, was examined in the last stage of his disease, when I requested, as soon as he should die, that his body should be placed, or propped, so as to rest wholly upon one side, which was attended to at 3, A. M., October 24; the night was cold and frosty.

Autopsy.—Six hours after death the corpse, resting on the right side, was warm in central parts; limbs cold and rigid; muscular; adipose tissue moderately developed, being yellow, as were the eyes and the elevated portion of the skin; a bloody foam in the mouth; the skin of the lower half of the body purplish; the color beginning with a longitudinal horizontal line, like a water level, increased in intensity masking the yellowness progressively downward, being in strong contrast with that of the upper side. Longitudinal incisions along the lower side, discharged blood freely, but similar incisions on the other side, did not discharge a drop. The omenta and bowels, in low situations, were finely injected, while, in elevated points they were blanched.

Head.—Subarachnoid roseate tints; vascularity of the pia mater; gelatinoid infiltration of the membranes upon the convexity of the hemispheres; serosity about one quarter of a pound.

Chest.—Liquor pericardii yellow and effervescing with carbonate of soda; the muscular tissue of the heart softened moderately; its cavities distended with yellow polypi and clots of blood; its large veins gorged with fluid and clotted blood, somewhat dark at first, but on exposure to the air soon becoming scarlet red; lungs collapsed; in one lung a bone was found as large as a chestnut; mucous membranes of the air passages red; the trachea contained a bloody foam.

Abdomen.—Stomach of moderate size; contained dark fluid and clotted blood, about four ounces; its serous coat yellow; its mucous coat along the lesser curvature more or less pink colored, with red mammillation, near the pylorus. The duodenum had gray mammillation and abrasions of its epithelium.

The bowels, above the valve of the cæcum, contained much blood, which varied from a deep claret to a black vomit color, and which, in sundry places, appeared to have dyed the mucous tissue; all the coats of natural consistence. The large intestine contained large pebble-like indurations of gray colored fæces coated with mucus; the rectum was impacted with hard fæcal masses; the spleen enlarged four times, and adherent to the parietal peritoneum; liver, pancreas, diaphragm and omentum were abnormally adherent by firm bloodless connections. The bladder contained about half a pound of urine; its submucous coat infiltrated and thickened by a yellow gelatinous deposit; liver variegated with yellow and brown; its subserous tissue diminished in adhesion to the parenchyma; its central portions somewhat brittle; the gall bladder contained about half an ounce of thick, black bile; other organs natural.

XXIX.

A. M., a german, cooper, aged thirty, resident five weeks, sick four days, was treated with a foot bath and a blister. On the same day his intelligence began to fail, and in a few hours he fell into a profound coma, with stertorous respiration, and died next morning at 8, A. M.

Dissection three hours after death; body stout, well proportioned muscular, free from emaciation, having considerable adipose tissue; skin and eyes yellow; muscles natural and highly contractile.

Head.—An incision of the scalp discharged a quarter of a pound of blood, dura mater yellow, vascular, chiefly arterial; arachnoid opaque; its sub-tissue infiltrated with albuminous serosity; its sack contained from two to three ounces of serum; pia mater injected, its vessels enlarged; sinuses loaded with blood.

Chest.—Right lung, more especially at its base, loaded with blood; its parenchyma and pleura red, increased in weight, discharging blood freely from incisions: the mucous membrane of this side red.

Abdomen.—The stomach small; contained a gray liquid; its coats thick, apparently from contraction; the jejunum contained thick, black vomit, with some chylous matter; the lower portion of the

ileum had several red, injected, circular patches in its mucous coat; the colon, from the cæcum to the rectum, contracted to a cord, scarcely larger than the finger, being in some places smaller; the rectum was firmly contracted in like manner, and but little larger; the urinary bladder strongly contracted, roundish, the size of a hen's egg, empty; the prostate had several ulcerated sinuses filled with pus; its body, and these cells, were of a dark red color; an incomplete but firm stricture of the urethra was found; the mesenteric glands enlarged, with redness and injection of their external coats; the spleen enlarged three times, brittle, engorged with fluid blood; the liver nutmeg-colored, brittle; its large vessels engorged with fluid blood; the gall-bladder contracted to the size of the little finger, contained a few drops of dark green liquid.

About half an hour after removing the organs of the chest, at least three pounds of blood coagulated firmly in that cavity, on both sides of the spine; these masses were broken into five or six pieces, and put on the table, where they remained without flattening, being firm, elastic, discharging some serosity.

In about an hour after having completed the dissection, an arm, including the shoulder, was amputated, when it was found that percussion or blows on the flexors caused the forearm to rise to the perpendicular repeatedly. An inferior extremity, which had been amputated at the hip an hour or more, possessed contractility, though slight as compared with the arm.

Art. II.—*On Chorea:* By J. M. Owens. M. D.

Bennet Dowler, M. D. *Dear Doctor:* In my note book I find the notes of a case of chorea which came under my observation in December last, and inasmuch as it had become a very obstinate case, and a source of very great annoyance to me, and distress to the family, I submit a brief report of the case, for your investigation, to be disposed of as you see proper, not that I expect to give the medical world, through your valuable journal, any new theory on the pathology or treatment of chorea sancti viti, but to cause, if pos-

sible, some of the profession of experience and ability, to give some practical observations, in regard to this peculiar nervous disorder, which has for ages engaged the minds of the most profound medical teachers. But to the case :

Lucinda C., aged nine years, nervo-sanguine temperament, light hair, blue eyes, and precocious intellect, was attacked some time in October, 1859, with acute rheumatism. When first called to see little Lucinda, on the 1st of December, she had gone through the whole course of treatment for rheumatism. I found her in a state bordering on tetanus, with that peculiar woebegone expression of countenance, so characteristic of chorea. Every muscle of her limbs and body in commotion, unable to articulate when spoken to, or to sit up in bed without assistance; pulse, 120, thirty of which were produced from excitement, on account of my presence ; for, in half an hour, when she became a little familiar, her pulse was down to 90.

The choreäc symptoms seem to have come on in a rapid and almost sudden manner. She had entirely lost the power of directing her movements properly. The motions of her limbs, body, and head were exaggerated and ungovernable, in attempting to take hold of anything offered her ; her arm appeared to be violently jerked, as it were, but always beyond the object of her search, as if impelled by some power completely beyond her control. When spoken to she would appear to laugh involuntarily, with this contortion of limbs and body, that pitiful and peculiar expression of countenance which manifested themselves in this way. There was considerable difficulty of deglutition. The dysphagia being, as I suppose, due mainly to a want of full controlling power of the tongue and pharyngeal muscles ; articulation very imperfect, when spoken to, and attempting to reply, she could only utter a few scarcely intelligible words in a whisper : when asked to put out her tongue it was protruded with that peculiar sudden thrust so characteristic of chorea, the whole organ being forcibly and rapidly protruded from the mouth, and retracted in an equally sudden manner. What is interesting in the case of little Lucinda, is the occurrence of chorea as a sequence of rheumatism, which also affords a good example of heart-disease—a disease which we are told by medical writers and teachers is clearly dependant on the rheumatic attack, from which Lucinda was still suffering ; and to add to her suffering from rheumatic inflam-

mation of the hip, knee, and ankle of one side. The inflammation had been transposed to the citadel of life; for, on applying a double stethoscope over the præcordial region, there was a distinct and very harsh friction sound, a clear case of pericarditis *mirabile dictu*, thought I—arthritic rheumatism, pericarditis, and chorea sancti viti, each contending for the ascendancy, and all committing their ravages on this tender little female, causing her to writhe like a crushed worm. A single glance at Lucinda was sufficient to create a feeling of deep sympathy in the bosom of the most obdurate and careless After considering the case in its various phases, so far as my feeble ability and limited experience would enable me, I thought that to cure the heart disease and rheumatism would put a stop to her chorea. Viewing the case in this light I, *in limine*, put her under treatment for pericarditis.

She took magn. cit. for an obstinate constipation, and mercury sufficient to produce slight ptyalism; after which the following mixture was given, and continued for several days:

℞ Liquor Potassæ, fʒiss.
Iodide Potassæ, ʒiss.
Tinct. Hyoscyami, fʒiiss.
Infusion Buchu, fʒviii.

M. S. A. Tablespoonful three times per day, with an occasional saline aperient, to keep the bowels in a soluble state.

Whether the remedies employed were such as might have been suggested by age, experience, and a thorough knowledge of pathology and therapeutics, I leave for older heads than mine to decide. Suffice it to say, that in eight or ten days Lucinda's cardiac affection had entirely disappeared; she could move the leg, every joint of which had been in a high state of inflammation, without pain; there was no tenderness on pressure any where to be found. I examined with great care, and could detect no abnormal sound in the heart; went over every inch of the spine minutely, but could find no tenderness there; spleen and liver natural size. What a pity I failed to detect some abnormal condition of poor liver; for it is a notorious fact that our patients' livers (when I say ours I mean the profession's) are frequently charged with lesions, ailments, or disease, if you please; when, in truth, the poor liver is not guilty of any abnormal action whatever, but is faithfully performing its functions of secreting bile

and separating impurities from the invigorating, life-giving fluid, just as God intended it should do. I found nothing wrong with my little patient's liver. Her rheumatism was cured; her heart was performing its function with minute correctness: in fact there was nothing the matter save that involuntary twitching and jerking of limbs and body—a veritable and obstinate St. Vitus dance, the worst case of chorea that I have seen, and I have seen many cases treated by Professor Jones, in that noble institution, the Charity Hospital of your city.

I was sadly disappointed to see the choreäc symptoms continue, after every visible trace of the rheumatic disorder and pericarditis had entirely disappeared; for I had confidently hoped that if I could but put a stop to these there would be nothing more of her chorea; but I was doomed to disappointment, for it did not only continue, but if possible increased in violence.

After scanning the field of medicinal agents, recommended by the various authors, I gave her mineral tonics, quinine, carbonate of iron, wine, barks and a liberal diet—all to no effect. This tonic treatment was continued with the addition of the cold shower bath, without the slightest benefit resulting to my little patient. Thus she continued until about the 1st of February. I had exhausted my vocabulary of tonic remedies all to no purpose; at least, they had failed most signally in producing any cessation of the choreäc symptoms. She looked hearty; she was hearty; she appeared healthy; and really she was not sick: nothing, in fact, ailed her but a most obstinate chorea. She finally took what I suppose she should have taken so soon as her rheumatism and pericarditis disappeared, to wit: the sixteenth of a grain of strychnia three times per day: in one week she was sitting up and and able to walk about the house. With the continuance of the strychnia she improved rapidly. In two months Lucinda was walking a mile to school, with a gait like hygeia, looking the very embodiment of health and happiness.

HAMBURG, ARKANSAS, Nov. 19, 1860.

Art. III.—*Medical Intelligence.* (From the London Correspondent of *The New Orleans Medical and Surgical Journal.)*

Your September number has not yet reached my hand: why I know not. I regret this, as my ignorance of the latest professional news from America, necessarily prevents me from "playing into the hands" of your contributors, as I should always wish to do. However, I will imagine that the same adverse winds, and strong seas, that delayed our young prince's return to the arms of his august mother, have deprived me of my budget from the other side the Atlantic. May it arrive, ere long, safe and sound, as he did, and as full of news! But time flies and I must delay my letter no longer, or the printer will be sadly complaining of dilatory conduct on the part of your London correspondent.

The weather in England continues anything but favorable for pedestrian locomotion—rain above, mud, London mud, below, putting to the test the best of American mackintosh and over shoes. Its effects upon the mortality of the metropolis, and surrounding districts, especially from diseases of the chest and throat, are terribly marked. The proportion of death from phthisis, pneumonia, bronchitis, diphtheria, etc., have increased during the last week to nearly half as many again, as the average of three weeks preceding. Such vast quantities of rain have fallen since the summer, that the country, especially in the valley of the Thames, has almost, since the beginning of September, been more or less flooded, as in the depth of winter. This, of course, has its effect upon the health of surrounding districts, and many an aged person, who might yet have resisted the attacks of an honest frosty winter, has succumbed beneath this prolonged season of fog and rain. Meanwhile, Christmas approaches, and yet in early morning, for several consecutive days, the thermometer has stood at little below 50° of Fahrenheit—this threatens still more rain. What will become of the merry of Christmas that was wont to glad every Englishman's heart, with its snowy fields and nipping frost without, blazing logs and warm hearts within? What, indeed! I fear that the out-door pleasure of thousands will be sadly marred for this year, as umbrellas and waterproofs are but sorry appendages to Christmas festivity. Of course this inclement weather has told upon our hospitals; but while it has served to fill their wards with sick men and women, it has produced little out of the ordinary run of chest and throat affections—little

worthy of transmission to the pages of the "*Medical and Surgical Journal* of New Orleans."

I had much pleasure in reading, a few days since, a small pamphlet from the pen of your talented countryman, Nathan Bozeman, M. D., upon the treatment of varicose dilatation of veins by the "button suture"—by the by, I perceive that it is reprinted from your July number. There can be no doubt, that the means here advocated, have been rewarded, by very considerable success, but not with more strongly marked success, I think, than has been that procedure, which, under the direction of Mr. Skey, I have on many occasions employed, while house-surgeon at St. Bartholomew's Hospital, namely, the potential cautery, in the form of "*Vienna paste.*" I cannot call to mind the exact number of cases which I have watched carefully from first to last, but they certainly amount to some dozens. For the information of some of your readers, who may possibly not be aware of the composition, or mode of application of this remedy, I subjoin the following brief description; "*Vienna paste,*" consists of quick lime, 3-5ths; of potassa fusa, 2-5ths; carefully rubbed together into a paste of convenient consistence, with a little spirit of wine at the moment of application.

The patient is prepared for the operation, in almost all the cases, by a good nourishing diet, and the exhibition of bark, quinine, or other tonics, a varicose condition of veins, being in all cases, the result of debility, and the application of the eschartic is proceeded with in the following manner:

The patient is allowed to walk about for some time, until the veins are fully displayed in their dilated condition, and the most prominent parts of them touched with the point of a pen, as a guide to their locality when in the recumbent position. The number of points to be exposed to the paste, may vary from two or three to fifteen, or in some rare cases, even more—never, however, encroaching upon each other nearer than by two or three inches. The patient now lies down; a number of pieces of adhesive plaster are cut to about a square inch in size, and perforated by a small circular opening of about the bigness of a pea; several of these are placed one above the other, and finally fitted upon the marked point of the vein, with the perforated aperture corresponding with the ink spot, so as to form a chamber for the eschartic, confining its action to the part to be destroyed; these having been carefully applied, the

chambers are filled with the freshly mixed paste, and each covered by a small strip of plaster, closing them up and precluding the possibility of the destructive compound falling about and damaging surrounding parts. These are allowed to remain in position for thirty or forty minutes, and upon their removal the site of each will be marked by a circular, greyish black eschar, of about the size of, or rather larger than a gold dollar, and even at this period all trace of the veins is lost.

The pain is little more than nominal, certainly nothing to compare with that experienced during the operation of passing a wire beneath the vein. The patient remains in bed, and in a few days the eschars separate, leaving a number of simple ulcers to be treated as such. I have never known but one case of even partial failure, and there it had been our endeavor to test how small the chambers might be made, and how short a time the paste might be allowed to remain in contact with the skin; a second operation completed the cure.

It is most important that through the entire course of these cases, the tonic and nourishing treatment should be persevered in to its utmost extent; if through any fear of inflammation, of phlebitis, or of any other of those evils so largely dilated upon by our forefathers, in the treatment of veins, the surgeon attempt any form of depletion, or even relax the rigor of his tonic-regimen, so surely will those ulcers take upon them a phagedenic action, and a tedious and troublesome case will be the result. Let the surgeon who employs "Vienna paste" for the cure of varicose veins, remember that, in no cases, more than in the after treatment of the ulcers formed by its application, is debility the friend of disease! strength its antagonist!

I remember, some years ago, a tolerably good joke, connected with the remedy of which I have been speaking. A well known, and eminent surgeon, who shall be nameless, entering a ward in one of our largest hospitals, with a crowd of students in his wake, and happening to pass the bed in which lay a patient to whom one of his colleagues had, two or three days previously, applied the Vienna paste, and seeing the leg exposed by the dresser, who was in attendance upon the man, called his pupils around the bed, and indulged them with an elaborate clinique, upon an exceedingly rare form of *venereal ulcer*, of which, he assured them, the case before them was

a well marked instance! The dresser was too good a diplomatist to undeceive the great man!

I have now a case to record which, from its many peculiarities, will, I doubt not, prove attractive to your readers: Edward Noyes, aged forty-seven years, presented himself at St. Bartholomew's hospital, in the early part of September last, with a tumor apparently about the size of an orange, situated in the right hypochondrium. He had observed it only a few weeks before admission, when it was increasing rapidly; no pain, no inconvenience whatever accompanied it. The patient was a healthy, tolerably well nourished man; his appetite excellent; his bowels properly open; urine, perhaps, a little high colored, but healthy, in good quantity, and free from albumen or sugar; in fact, he was, in every respect, in good health. The tumor presented the sensation, under the hand, of a slightly lobulated cyst, and from this fact, from its position, and from all absence of constitutional disturbance, Dr. Farre, under whose care he was, diagnosed the case to be one of hydatid cyst of the liver. A proposition to tap the tumor was made to the patient, but he refused to submit to the operation, and left the hospital after three weeks sojourn beneath its roof. On August 31st he again presented himself and was admitted into "Mark" ward, under the care of Dr. Farre. The tumor had, by this time, enlarged to an enormous extent, and upon percussion, proved to have taken an oblique course downwards, and to the left, till it had almost reached Poupart's ligament; at the back, dullness existed up to the spine; no bowel lay between it and the abdominal wall, so that the whole of its anterior surface could be readily examined by the hand; this still presented a slightly lobulated character, and distinct fluctuation was easily detected throughout its entire extent. In a fortnight after admission, the cyst was tapped, and ten pints of a slightly bloody, albuminous fluid evacuated, in which no echinococci were found. The sac, which entirely collapsed, was injected with a solution of iodine.

It refilled, and at the end of another fortnight, was again tapped, and injected. After this second occasion, when seven pints of fluid were drawn off, the tumor, which had up to this period caused no pain beyond a slight occasional aching, became sensitive, and tender to the touch; and in place of its former contents, a thin, dirty pus exuded from the wound in the abdominal wall; the cyst had

become an abscess. Constitutional symptoms now began to show themselves ; pus was said to have been found in the fæces, and the patient gradually sank and died, December 6th. At the post-mortem examination, the liver was found healthy in structure, and of normal size ; the large and small intestines healthy, no opening being found between them and the cyst ; the bladder entirely free from disease ; the left kidney healthy in structure, but containing a stone of about the size of a small filbert ; the right kidney was the seat of disease ; it was dilated into a huge cyst, the wall averaging about half an inch in thickness, and reaching from its natural position to the left brim of the pelvis. All kidney structure, excepting in a few spots, and upon careful examination, was lost. In the course of the ureter, and about one inch from its origin, was impacted a calculus of about the same size as that which existed in the left kidney, doubtless the cause of the disease. The lobulated sensation conveyed to the finger through the abdominal walls, was attributable to the outline of the extremely dilated pelvis of the kidney ; a patch of adhesion between the cyst and the abdominal wall, showed where the puncture had been made, and at the same time served to prove that no fluid could have escaped into the abdominal cavity.

It is a remarkable point in this case, that although the patient must, for many weeks or months, have been deprived of all action on the part of the right kidney, yet he never, in the slightest degree, suffered from any affection of the urinary apparatus. During the actual presence of a calculus of considerable dimensions, impacted in the course of the ureter, a state of things usually accompanied by the most distressing symptoms, he was alike a stranger to pain in that canal, to irritability of the bladder, to painful micturition, and to suppression of urine. Blood was never found in his water ! Looking then at the negative character, of all the symptoms, it cannot be wondered that a physician of experience should make a faulty diagnosis ; in the first place as to the character of its contents, and in the second, as to the organ in which it originated ; the only evidence, indeed, in favor of the true diagnosis, or I may almost say, the only evidence which did not directly tend to blind the physician as to its true origin, was the fact that dullness on percussion existed *completely* round to the spinal column itself, on the right side, which would not have been the case had the healthy kidney lain between the point of percussion and the healthy organ. It must be a matter

of regret that the fluid drawn off at the first operation was not tested for uric acid; however, even if the kidney had been diagnosed as the seat of disease, it would have needed a far sight, indeed, to have decided that such disease was dilatation of the organ itself and not hydatid cyst, looking at the entire absence of all constitutional disturbance, up to the period of the second injection of iodine. The calculi have not been analyzed; they are hard, smooth, and of a dark slate color. I need hardly say that so remarkable a case has excited considerable interest at St. Bartholomew's Hospital.

I shall now endeavor to describe to you a new instrument to be used in the operation of lithotomy, and the operation itself of which it forms a necessarry adjunct. Mr. Wood, a surgeon at Guy's Hospital, has just extracted a stone from the bladder, by the aid of a new staff of his invention. This staff, as first introduced into the bladder, exhibits no peculiarity; it is of an ordinary curve, with the groove along the mesial line of its convexity; however, when in position, it is capable of splitting at the line of groove, and by a simple mechanical arrangement at the handle, of opening laterally along the whole of its curve, to the point of the instrument—thus stretching laterally the membranous and prostatic portions of the urethra. In a later period of the operation, which I will describe presently, and while yet expanded laterally, it is capable of again splitting horizontally, and expanding in an upward and downward direction, after the manner of the common lithotrite, only in this case it is a sort of double, or bifid lithotrite, or, perhaps, a four bladed speculum, may better suggest the instrument to the mind's eye. The operation, which, by the by, has for its object, the division only of the membranous portion of the urethra, the prostatic, being enlarged by dilatation, is performed thus: the staff is introduced into the bladder, the first incision made, as in the old operation, and the groove in the staff, found by the fore-finger of the left hand; the blades of the instrument are now expanded by the assistant, who has held it in position, stretching the membranous portion of the urethra laterally. In this condition a touch of the knife opens the urethra, and finishes the cutting part of the proceeding. The whole of the last portions of the canal are now forcibly upon the stretch laterally; this, however, not admitting the passage of the finger, of forceps into the bladder, the second action, of which the staff is capable, is employed, *i. e.*, expansion of its blades vertically

after the manner of the lithotrite, thus drawing the prostate, and adjacent portions of the urethra upwards towards the pubes, and downwards in the direction of the rectum, and forming a square aperture, through which the stone was, in the operation performed the other day, by Mr. Wood, readily extracted. In this case, the first in which the new instrument has been employed, although the inventor has tested it many times upon the dead subject, the calculus proved very small.

It may be doubted whether a stone of any magnitude could be removed through the prostatic portion of the urethra dilated by this instrument. Again, there is an old defect, to which all these splitting and expanding instruments are liable, namely, that of including between their blades, portions of mucous membrane, when closed for the purpose of withdrawal. However, in this, its virgin operation, it acted well, and from the ingenuity of its construction, is certainly not unworthy of attention.

Mr. William Adams, surgeon to the Royal Orthopædic Hospital, etc., has lately published an interesting work, of small size, upon the "reparative process in human tendons after subcutaneous division for the cure of deformities, with an account of the appearances presented in fifteen post-mortem examinations in the human subject." It is in these human post-mortem examinations, that lies the chief value of Mr. Adams's work. We have numerous series of experiments upon the tendons of other animals, recorded as far back as the year 1767, when John Hunter divided the Achillis tendons of dogs, the ass, and deer subcutaneously, for the purpose of investigating the nature of the reparative process, and preparations of the tendons of these animals, in different stages of repair, were placed by him in his great museum, now contained in the Royal College of Surgeons of England.

The author also publishes in this work, observations on a number of experiments performed by him upon sixteen rabbits, in the year 1855, but as I cannot but think that his investigations, with regard to the human subject, are much more to the point, I shall confine my notice to the portion of his book referring to them. I will, therefore, abridge, as far as possible, the results of several of these autopsies, all of which, with one or two exceptions, were performed by Mr. Adams himself.

Case 1.—Age four weeks; tendo achillis and tendon of tibialis

anticus divided subcutaneously for talipes varus ; death from bronchitis ; post-mortem examination four days after the operation : *Tendo Achillis.*—The divided extremities, still connected by the cellular sheath of the tendon in a tubular form, were three quarters of an inch apart, square, and unaltered in appearance of texture. The sheath, little injured by the operation, was highly vascular, a little increased in thickness, and slightly succulent in appearance from infiltration into its cellular meshes. There was but one streak of coagulum within it, corresponding with the point at which it had been wounded, and this so insignificant in its proportions, as to make it quite evident that in this instance, extravasated blood could play no part in the reproduction of tendon.

Case 2.—Age eight months ; tendo achillis and tendon of tibialis anticus divided for talipes varus ; death, cause not mentioned ; post-mortem examination eleven days after operation. *Tendo Achillis.*—The divided ends were seven-eighths of an inch apart, abrupt and square as in Case 1, but directly connected by a solid bond of union, equal in diameter to that of the divided tendon, but of softer consistence, and of blood-red color, partly from vascularity, partly from blood-staining. Upon section, this new connective tissue presented a somewhat gelatinous appearance. Under the microscope, it was seen to consist of nucleated blastematous material, in which after the addition of acetic acid, numerous small oval and rounded nuclei were apparent. No linear arrangement of nuclei could be traced—no fibrillation, but after being "teased out" with needles, or compressed with glass, it still retained a torn, membranous character.

Case 3.—Age three weeks ; tendo achillis, etc., divided ; acute pneumonia, three days ; death ; post-mortem examination sixteen days after operation. *Tendo Achillis.*—Cut extremities rather more than half an inch apart, but connected by a tough bond of new material, equal in size to the tendon it served to connect, and of a ruddy, blood-stained color. Its external surface was not as smooth as that of the old tendon, and being infiltrated to some extent, by surrounding fat and cellular tissue, required careful dissection. Mr. Adams here remarks, "In all my examinations, up to three years after division, I have found it impossible to dissect the surface of new tendon as clearly as we can the old tendon, so as to have a smooth glistening surface, though this is no difficulty in the general definition of the new portion of tendon." Under the microscope,

with the fourth power, where it was unmixed with surrounding cellular tissue, fat, etc., the new material appeared chiefly made up of granular nebulous matter. There was a slight attempt at dove tailing between the new and the old tendon.

Case 4.—Age seven weeks ; the tibialis anticus and posticus, and flexor longus of right foot ; tendo-achillis of left divided ; acute pneumonia ; death ; post mortem six weeks after operation. *Tendo Achillis.*—Separation a quarter of an inch, connected by a tough bond of new material ; ruddy, vascular, and from its translucent appearance, readily distinguishable from the opaque, white extremities of the old tendon. The dove-tailing between new and old material, strongly marked. Under the microscope it exhibited a delicate fibrillated appearance, but splitting into fibres only where portions of the old tendon were included. Acetic acid displayed abundant nuclei, which partook of a parallel linear arrangement, so that a perfecting of the new connecting tissue, towards the characters of well formed tendon, was clearly traceable.

In Case 5 when the post-mortem was performed, three months after the operation, the new material was found differing from the old tendon only inasmuch as at the seat of division its surface was not so smooth and glistening, nor could a loose cellular sheath be demonstrated. The new material was also slightly more vascular. Microscopically examined, careful observation was necessary to distinguish old from new tendon.

One more case will, I think, be sufficient to complete a useful series of illustrations to this subject.

The patient, a girl of nine years old, suffered amputation of the leg, one year and a half after several tendons had been divided. At first it appeared upon examination, that no traces of the tendon having been divided, but upon closer observation it was found, that for about two and a quarter inches of its length, it did not present as smooth, glistening a surface as in the normal condition. With the exception of the partial adhesion of its sheath, the tendo achillis presented its natural external appearance.

It appears from a summary of these and other cases in the next few chapters, that Mr. Adams is of opinion that, in the subcutaneous division of tendons, the sheath usually remains uninjured, as a bond of union between the two cut extremities; that a clot or extravasation of blood, if any exist, retards the process of repair, and in no way

assists it, as was believed by many, especially French and German authorities—that inflammatory exudation is equally a cause of complication and delay, and that the true source of reproduction lies in the sheath. This becomes first vascular and swollen, and exudation of blastematous material is infiltrated through its meshes. This blastema, under the microscope, exhibits the development of innumerable small oval nuclei, which appear to become gradually elongated, and upon the addition of acetic acid to assume in cases advancing towards recovery, a parallel linear arrangement.

It may still be doubted whether fibres are formed in this way, "but," says the author, "I am inclined to believe in the development of fibres by this process, after carefully examining numerous specimens, both in my experiments upon rabbits, and in specimens from the human being." Mr. Adams does not believe in the linear cicatrix theory, whose supporters consider the newly formed connective tissue, merely as a temporary material, to shrink, and to be gradually absorbed, until the extremities of the divided tendon are once more brought in contact; but he believes that the new tendon remains during life as a permanent tissue, and is an integral portion of the new tendon.

While upon the subject of lithotomy, I intended to have included the following, however it escaped my memory at the time, and must take its place below:

Mr. T. Gutteridge, of Birmingham, a man of considerable professional experience, has lately sent a small brochure to the principal medical societies, and to many of his professional brethren, in London and elsewhere, intended as a warning against a certain "ischiatic illusion," as he terms it, in sounding the bladder for stone. There can be no doubt that the author is a man of extensive observation, nor should his warning be altogether ignored, coming as it does, from one, who has performed the operation of lithotomy some one hundred and thirty times with great success; the mortality in his practice having been very small. It appears that in the course of his practice, upon three occasions, he, and trustworthy assistants, have thoroughly assured themselves of the presence of a large and rough stone in the bladder; he has cut and found none. According to his own statement he has discovered the cause of these accidents —a cause which he imagines will explain like failures, which, doubtless, have occurred in the hands of the greatest, and most expert

surgeons of the world, and he puts it forth in the shape of a "Proposition and Aphorism," which I subjoin in his own words—his pamphlet being merely a history of the manner in which he came to miscalculate the presence of stone, and how he discovered the cause of a mistake, the knowledge of which, if sound, must be equally useful to himself and the profession at large. He says: "In searching the human bladder with a metallic sound or staff, in order to discover stone preparatory to the operation of lithotomy, it will be found that if the instrument be brought to the ischiatic ring, on either the right or the left side, and kept pressed there, it will procure a sensation like that caused by touching a large and rough stone. Such sensation being found there, distrust it as a proof of the existence of stone in the bladder; for this is a spot where the spurious sense of stone may be produced; and confounded with, or mistaken for the genuine. Beware, then, evermore, of the ischiatic illusion." In each of the three cases where Mr. Gutteridge has "cut for stone, and found none," the patients have suffered severly from all the recognized symptoms of calculus in the bladder, they have recovered rapidly after the operation, and have been entirely relieved by it, from all vesical irritation. I have not yet had an opportunity of searching for the "ischiatic illusion," but it may certainly prove a subject worthy of investigation.

One more case before I close my packet, as post time approaches: A man, thirty-five years of age, large and muscular, fell from a cart and dislocated his radius and ulna, backwards—the latter bone being, at the same time, thrown considerably inwards. The arm was somewhat bent and fixed. It was obviously not an ordinary case of dislocation backwards. Four months had elapsed between the date of his accident and that on which he presented himself at St. Bartholomew's Hospital. Mr. Skey determined to attempt the reduction of the bones, and with that view made extension by means of compound pulleys—the man being brought under the influence of chloroform. The attempt was attended by the laceration of the fibrous adhesions about the dislocated bones, and their partial reduction towards the articular end of the humerus. A second effort was made six days afterwards, the power being tested by the dynamometer, and employed to the extent of 3½ cwt. This also failed to restore the bones to their normal surface, although the angle of the elbow was somewhat improved. At the end of a fortnight the man was

again brought into the operating theatre, and Mr. Skey stated, that he had three modes of procedure to propose: 1st. To ascertain by a subcutaneous division of the triceps muscle, whether he could not flex the arm to such an extent, as greatly to improve the value of the limb, taking the chance of some degree of permanent mobility. 2d. By exposing the bones, and, if possible, to lever them into place; and 3d. To excise their extremities, bending the joint to a right angle, and encouraging union by anchylosis. The first of these plans was that carried into effect. The tendon of the triceps was divided by subcutaneous section, and the joint previously almost immovable, bent without great effort, to a right angle. The object of the operation was thus attained without much difficulty. The joint regained great mobility, but its movements proclaimed a fracture of the inner condyle of the humerus, extending some way into the articulation. The arm was now flexed to a right angle, and fixed upon a suitable splint, and the case gives every promise of a useful limb.

LONDON, DEC. 12, 1860.

ART IV.—*Lithotomy; Recovery:* By G. W. NEWMAN, M. D., of Coffeeville, Mississippi. Reported by W. W. Hart, M. D., of Carrollton, Mississippi.

IN April last I received a note from my friend, Dr. G. W. Newman, of Coffeeville, Mississippi, inviting me to be present, and assist in an operation for stone in the bladder. On the morning of the 24th, the day appointed, I arrived in Coffeeville, and found the doctor and patient all ready for the operation.

The patient, R. M. B., a lad of nineteen years, a native of South Carolina, has resided for the last twelve years in Mississippi, following no particular occupation; very intemperate in his habits, and of strumous diathesis. For three years of his life he was affected with coxalgia in one hip, which resulted in permanent stiffening and shortening of the limb.

For five years previous to the operation, he had been laboring

under symptoms of stone in the bladder, suffering greatly at times, from spasmodic contraction of the viscus after voiding the urine.

Operation.—There were present, beside Dr. Newman and myself, Drs. Buchler, Means and Gorin. Several soundings were made, and the stone readily detected, which seemed to be of large size.

All the preliminaries having been arranged, the patient was stripped, placed upon the table, and confined in the usual way. Having but a short time previously voided his urine, the bladder was injected with tepid water. He was then placed fully under the influence of chloroform by Dr. Buchler, I myself holding the staff. Newman, proceeded to perform the lateral operation.

The stone was soon reached, the staff withdrawn, the forceps introduced, and the stone seized, and just here the only difficulty attending the operation presented itself; the forceps grasping it by its largest diameter, made it necessary to make three other slight cuts before it could be extracted.

The loss of blood during the operation was very slight, and of no consequence at all afterwards.

The stone weighed nearly two ounces, had a smooth surface, of a flattened ovoidal shape, measuring two and one-eighth inches in its longer, and one and three-fourth inches in its shorter diameter; one inch in thickness.

The patient did well until the twentieth day, when he undertook to sit up in bed and write a letter, very much against the advice of his physician and friends. In a few hours he was attacked by symptoms of a decided pneumonic character, which continued with him for about four weeks.

The urine continued to flow through the wound until the fever had entirely abated, after which it passed through the natural channel. It was not until the lapse of about eight weeks, that he was discharged well.

Art. V.—*Sedative properties of Ergot.*

Richmond, Louisiana, Jan. 1st. 1861.

Editors New Orleans Medical and Surgical Journal—Sirs: I desire, through your Journal, to call the attention of the profession to the

sedative properties of ergot, in relation to its efficacy in controling certain uterine conditions. So far as my knowledge of medical books extends, I believe the above remedy is recommended only as a stimulant to the uterus, producing violent contractions of that organ when given in large doses. The importance of the remedy in midwifery, on account of such physiological action, having made it one of the most prominent of medicinal substances. I know, toclaim for it at this period of its history, the above additional property, will be to procure criticism from some of the brethren; but I cannot forbear publishing the fact, as its virtues when thus employed are invaluable both to physician and patient. I have tested its sedative powers in treating premature labors, threatened abortions, and uterine hæmorrhage, and it is peculiarly applicable in labor cases at term when the pains are "*inefficient*," as described by Churchill, annoying the woman and detaining and vexing the accoucheur; and although I have often found the os uteri sufficiently dilated to admit two fingers, yet the dilatation seemed not to increase—the pains continuing feeble and frequent. But as soon as the subduction of the pains by the ergot was effected, and repose thereby given to the patient, natural and effective labor, at a longer or shorter interval succeeded. The accoucheur is often kept in suspense and anxiety twenty-four hours, or longer, in consequence of these *feeble* and *frequent* pains; and if he arrest them with general sedatives or narcotics, the secretions are usually suspended, rendering after-medication necessary. The action of the ergot as a sedative being concentrative on the uterus, and local, it does not derange the general system.

The beneficial effects of the sedative properties of this remedy are very remarkable in cases of threatened abortion, and in premature labor. The following *case* of premature labor will fully establish its potency: In May, 1856, Mrs. D., æt. forty-two, sent for me in haste to attend her while lying-in; she had been *enciente* between seven and eight months; the os uteri was dilated an inch and a half in diameter, probably; the pains recurred at intervals of twenty or thirty minutes generally; the fœtus could be touched through the membranes (they had not been ruptured) with the finger. She had been in labor about three hours when I arrived. I gave her one dose of the infusion of ergot, which was repeated in twenty minutes—the first having failed to arrest the pains. Soon after taking the second dose the *pains* subsided, and she slept the remainder of the night.

She arose in the morning in usual health, and superintended the affairs of her household. Precisely one month from that time I was called again to see her—her condition being so similar to the one just described, as to need no other elucidation. The same treatment was adopted as before, with similar success. Two weeks from the latter period, I visited her again, when she was speedily delivered of a healthy child. I used the ergot again, but without effect, the patient having arrived at term, and labor being fully established. I may add that I used it only experimentally.

Having been successful in arresting abortion and many premature labors with ergot alone, I would confidently advise its use in every case when contractions of the womb should be controlled.

As an adjunct in the treatment of uterine hæmorrhage, it is pre-eminently valuable. I do not know whether it would arrest such a state uncombined, but I am apprehensive it would, as *repose* is the desideratum to be obtained in its treatment. I usually prescribe sulphate of bebeerine with it. The infusion is made thus :

Ergotæ, gr. v. Aquæ Bullientis ℥ss. M.

As soon as it becomes sufficiently cool, I administer it in doses of one teaspoonful every twenty minutes, if necessary, but I have not found it *necessary* to prescribe more than two doses in any case.

Yours respectfully,

James L. Davis, M. D.

Art. VI.—*Operation for Diffused Traumatic Aneurism :* By J. Hunter, M. D., Bossier Point, Louisiana.

Lewis, a servant of my friend Dr. Skannal, as he was running up to stick a beef, fell, and received a wound from a butcher's knife, which he was carrying in his coat pocket, thereby severing the popliteal artery.

The knife passed into the left, and just below the tendon of the semi-membronosus. Wound in the right leg. The hæmorrhage was very profuse. Dr. Skannal (whose locks have whitened and whose eyesight is dimmed by service in the profession), by firm com-

presses and bandages stopped the blood, and sent a messenger for me. It was impossible for me to see the case under five days, as I was absent at the time, being on Red River, some thirty miles from home, attending in an epidemic (dysentery), which I propose to notice in your Journal some day in future.

I found, on removing the bandages and compresses (which had not been touched from the time of dressing), a large diffused aneurism. The tumor extended from the centre of the gastrocnemius to about four inches above the popliteal space. It encircled the entire limb, and could be seen to pulsate distinctly at the distance of several paces. On close examination, it was found to pulsate synchronously with the beat of the heart, accompanied with purring or *bruit*, which is characteristic of such tumors. Distinct fluctuation throughout the entire mass. The impulse was greater than I thought could exist. Lewis is about twenty-five years old, six feet high, and well proportioned, sound, health excellent. There was no hæmorrhage from the wound. We found it closed by coagula, and a fibrinous mass, the edges gaping, and I feared very much it would burst open before we could prepare to ligate the vessel. The wound had been enlarged, and a slight effort made to ligate the vessel when wounded! We decided to ligate the femoral artery, believing this could be the only safe plan.

"These tumors, if left to themselves, never undergo spontaneous cure; but they either increase in size until the integument covering them sloughs and ruptures, or the external wound, which has been temporarily plugged by coagulum, gives way; or else they inflame and suppurate, pointing at last like an abscess, and, when bursting, giving rise to a sudden gush of blood, which may at once, or by its rapid recurrence, prove fatal. In some cases, a subcutaneous breach is made in the coagulated and plastic boundary, and the blood becoming infiltrated into the cellular tissue of the limb or parts, gives rise to syncope, gangrene and death."

The operation was performed in Scarpa's triangle, cutting through the common integument, superficial fascia, exposing the inner edge of the sartorious muscle, which was very broad; it was turned a little to one side, and the vessel exposed, having avoided the saphena vein and its branches. I had a slender aneurism needle, which was accidentally broken, though the pressure in endeavoring to pass it was very slight. I immediately bent a silver probe which had an

eye, and passed it as a substitute, which answered a first rate purpose. On tying the vessel, the pulsation in the tumor entirely ceased. The wounds were dressed, and the limb gently bandaged with a soft cotton roller. The patient expressed himself as comfortable. The temperature of the limb was carefully watched, but it lowered but little. The weather was pleasant, and I supposed that perhaps the circumflex ilii and profunda arteries, during the six days previous to the operation, had enlarged sufficient to accommodate the limb with heat.

The ligature came away in the usual time, and the patient progressed without a minute's pain to perfect health. The wound in the ham opened and discharged for a few days a watery puruloid fluid, which was doubtless dissolved blood and pus.

The treatment of this case has some interesting features connected with it ; and since its management varies from very high authority, I beg leave to call attention to the same. I find, on reference to Professor Erichsen's justly celebrated work on surgery (a work which it is not necessary for me to enter my feeble tribute of praise, for it is on the table of almost every surgeon in America, and speaks for itself), the following language, p. 160 : "The principal reason in favor of cutting down directly upon the wounded part of the injured vessel, is that the ligature of the main trunk only stops the direct supply of blood to the limb, but does not interfere with the anastomoseing circulation, which finds its way readily into the portion of the vessel which is below the ligature." I insist that if on pressing firmly the main trunk above the wound, the hæmorrhage ceases, or the pulsation, as in this case, stops, its ligation will be ample. As a general rule, it is better to enlarge the original wound and ligate ; but what surgeon of experience has not met with cases in which it has been more safe to tie the trunk in a different position from the original wound ? "Thus, though bright arterial blood may no longer jet from the upper part of the wound, blood which has become of a dark color in consequence of the changes to which it is subjected in its passage through the vascular net-work of the limb, will continue to well out from the lower aperture in the artery, entailing the necessity of further operative procedure to restrain its flow." We well know that there is no artery of any size but what has large veins in its course ; and does not this dark blood, of which the Professor is so apprehensive, most often come from veins which

almost invariably can be confined by a light roller and proper elevation of the limb, together with styptics?

"However deep, inflamed, and sloughy the wound; however ill-conditioned and infiltrated with pus or blood, the neighboring parts may be, there is no safety to the patient unless the vessel be cut down upon, and tied at the part injured."

This is certainly dangerous surgery to go out for the direction of the young and inexperienced operator, for we know that all young men at first refer to their books for directions in important cases. But we have more faith in the common sense of mankind than to think that they could be so misdirected as to follow the above instructions in all cases which would often terminate in disappointment and death.

He does not permit an exception, whether the vessel be diseased by the presence of unhealthy fluids, inflammatory action, or even a gangrenous condition.

Again, and lastly, I will quote his directions for treatment of traumatic aneurism: "The treatment of these cases must be conducted on precisely the same plan as that of an injured artery communicating with an external wound. The only difference being that in the case of diffused traumatic aneurism, the aperture in the artery opens an extravasation of blood instead of upon the surface. We must especially be upon our guard, not to be led away by the term aneurism that has been applied to these cases, and not to treat such a condition, resulting from a wound, by the means that we employ with success in the management of that disease. In a pathological aneurism, the blood is contained in a sac, which, as will hereafter be shown, is essential for the occurrence of those changes that are necessary for the cure of the disease. In the diffused traumatic aneurism there is no sac properly speaking; and hence, those changes to which a sack is necessary, cannot occur. I doubt whether there is a case on record in which the Hunterian operation for aneurism, applied to the conditions now considered, has not terminated in danger or death to the patient, and in disappointment to the surgeon."

He then directs that this pulsating aneurismal tumor shall be laid open with a knife, the vessel *hunted up* and tied. I would simply mention, this case as reported, has been entirely successful, and the

principles which directed the operation, are not only correct in theory but in practice.

In diffused traumatic aneurism the difficulty of ligation would be increased very much by the discoloration, adhesions, presence of active hæmorrhage, etc.; and besides, we would generally find a diseased vessel unprepared to go through the necessary steps of cohesion, occlusion and inflammation requisite for perfect success, and avoidance of secondary hæmorrhage. It is often the case that the danger from enlarging the original wound, would be much greater than that arising from a small wound in a convenient and safe place for deligation of the vessel. As to the difficulties from hæmorrhage, from anastomoses, etc., which he presents, can always be avoided, when you know that pulsation ceases in the tumor by pressure on the trunk, where you intend tying it before your knife is used. No surgeon should, by an "*ipse dixit*" of this kind, deny that it is always necessary for a man to be governed by reason and common sense, in the use of his knife. Of course I intend no disrespect to the celebrated writer mentioned, but differ from him materially in opinion, in the treatment of diffused, traumatic aneurism.

Art. VII.—*Two Cases of Snake Bite.* Reported by A. V. Warr, M. D., Rossville, Tennessee.

Dr. Dowler: I should never have troubled you with an article, but for the queries of Dr. Young, of Mississippi, viz: are tobacco and alcohol known by professional experience to be antidotes for the poison of serpents; and if so, their probable *modus operandi?* I will give you two cases which came under my own observation.

Case 1st. In 1856 my father had a negro woman bitten on the leg, just over the course of the ant. tibial artery, by a copper-headed snake. (This occurred before I read medicine.) The pain and swelling were considerable, and as it was eight miles to the nearest doctor, he gave her whisky freely and poulticed the leg with cockle burs. After becoming intoxicated she got well, and on the next day went

to work as usual. In order to show that this snake is poisonous, I will say, that I had a dog bitten by one of the same kind this spring, and it died.

Case 2d. On the 24th of August, 1860, while taking up fodder, a negro of my father's was bitten on the foot, near the little toe, by a cotton-mouth snake. Pain intense; swelling considerable. I saw him in an hour after he was bitten, and at once gave him a gill of whisky, and applied a tobacco cataplasm to the bite. This occurred at 8, P. M.; 8½ o'clock, no better; pain extending up the leg; gave another gill of whisky. 9 o'clock, worse; pain getting higher; corded the leg above the pain; removed the tobacco and applied a poultice of cockle burs; gave one-half gill of whisky. 9½, slight symptoms of intoxication; pain not quite so severe, and no extension. 10, no symptoms of intoxication; pain returning; gave a gill of whisky and removed the bur poultice. 11, much better; "fully drunk," and but little pain. I should have stated that between 10 and 11 he vomited freely. Considering the boy safe, I retired. Some time after I retired my father covered the foot and leg with swamp mud; which I should have said he did in the first case.

Aug. 21st, 8 o'clock, A. M. No pain, no swelling, and no unpleasant effects from so much whisky. On the 26th he went to work.

Prof. Smith, of the University of Pennsylvania, recommended the free use of whisky in 1857–8. Dr. H. Green, an eminent doctor of Arkansas, also recommends it highly, with aqua ammonia externally.

I believe that to the whisky, alone, the two cases above owe their cure. I have no experience with tobacco internally, nor any theory as to the *modus operandi* of whisky.

ART. VIII.—*Iron Wood in Consumption: With Comments.*

THOULA, HOLMES CO., MISS., Nov. 29, 1860.

B. DOWLER, M. D.—*Dear Sir:* As I consider it the duty of every one, especially the medical gentlemen, to contribute all in their power, consistent with propriety, to the relief of suffering humanity, and being also well satisfied that there are numbers of remedies un-

known and untried both in the vegetable and mineral kingdom, which are applicable to many, if not all of the so-called incurable diseases, I would respectfully submit some information presented to me, for your consideration, as also that of the numerous members of our profession who are readers of your valuable journal, uncertain whether I offer anything new or even valuable; but I will give my sources of information and author, and leave you and the reader to judge for yourselves.

In conversation with an intelligent and respectable gentleman from Canada, not long since, he asked me if I was familiar with the iron wood. I told him I was not, and referring to my U. S. Dispensatory for 1851, I could find no mention of it. He then proceeded to tell me he had been given up by an eminent physician in Canada, to die of consumption, and that he had cured himself entirely by the use of this article. My informer certainly was a hale, hearty, fine looking man. At the same time he gave me the details of several cases of phthisis pulmonalis, some of which were given over to die by the first physicians of Toronto, in the public hospital and elsewhere. He said that he had been cured entirely by the use of this article. Another thing which satisfied me more fully that he had had phthisis, was the fact that a few days before, while in the act of making some violent exertion, the patient coughed up a gritty piece of substance, resembling coral somewhat in its character, from his lungs, which must have been the peculiar deposit which we sometimes find in the cicatrix of a tubercle which had healed.

I have never used the remedy, but I consider it well worthy the attention of medical gentlemen. Mr. Beaumont (my informant) tells me the prescription originated with an old physician in the English army, who transmitted it to his servant, from whom Mr. B. obtained it; the remedy was a secret with the servant for a long time.

Mr. B. says there are two species of the iron-wood; the male, which has a blue heart, and is of a sweetish, then bitter taste; and the female, which has a white heart and little or no taste. Of the former, he takes ℥iij of the chips of the heart, rasped up very fine; puts them in a quart of water, and boils them down to a pint. Dose: two wineglasses full four times a day, with one grain of sulphate of zinc dissolved in each dose; at the same time, for oxygenating the blood, as he says, he uses the infusion of burdock root, according to U. S. P., twice a day. This treatment must be persisted in until

two or three quarts are taken, before any visible effects are produced, but if persisted in, he says it will certainly effect a cure, if there is enough left of lung or lungs to breathe through.

If you consider this worthy a place in your journal, please publish it with such comments as you may think proper.

Respectfully,

J. STEVENS, M. D.

"COMMENTS."

In all the important affairs of life, especially in such as relate to the cure of diseases, whenever the evidence which should guide human conduct is neither of a demonstrative character nor the result of personal observation and experience, it becomes necessary to examine the nature and validity of the testimony which claims acceptance, and promises to contribute to our well-being. An incompetent witness, however honest, should be set aside at once, or, at least, his testimony should not be received as conclusive; if his testimony be intrinsically improbable, being contrary to general experience, while, at the same, it may flatter his superior sagacity, promote his self interest, or contribute to his love of fame, it becomes the more necessary to scrutinize his claims to unqualified belief. An individual might be a competent witness in a case of murder by a gunshot wound, whose testimony as to the analysis of a poison, which had caused death, would be worthless. An astronomer might determine with precision when the next eclipse of the sun shall occur, without being able to diagnosticate by percussion, auscultation, or other means, the positive existence of tubercular consumption, bronchitis, pneumonia, pleuro-pneumonia, hepatization, etc. It is probable that a small number of consumptives recover with and without treatment; nay, in spite of bad treatment. Hitherto, all of the vaunted specifics for fully developed consumption have proved illusory. He who announces his ability to cure should be able to diagnosticate consumption. As skill in diagnosis is at once the most difficult and fundamental part of medical science, it would be like "looking for the living among the dead," to look for it among non-professional persons without medical education. The consumption-curers, like the cancer curers, by confounding different diseases, assuming them to be identical, are, though culpably ignorant, often able, without intentional falsehood, to count numerous recoveries,

even though their modes of treatment may have been evil and evil only. The doctor who gave a salt herring to an Englishman, who recovered from the fever, tried it on a Frenchman, who died, whereupon he concluded that herrings cured the English but killed the French, in fevers. In New Orleans, not many years ago, it was by no means uncommon to meet with non-professional persons, even in the higher walks of society, as well as among ignorant nurses and mulatresses, who pretended to cure yellow fever without losing one patient in a hundred more or less. The history, mystery and moral obliquity of these fabulous statements belong to the historian of the occult sciences.

Whatever may be thought of the iron-wood* cure of consumption, it cannot rival the mythical cures vouched for by some of the most eminent of the medical faculty. For example, the learned Dr. Beddoes (born, 1760; died, 1808) maintained that consumption, being caused by the inhalation of too much oxygen could only be cured by breathing an air deficient in this gas, wherefore this Oxford professor had his consumptive patients stabled among cows in order that the aroma of cow fæces might be inhaled by the sick. A medical acquaintance of mine, acting upon his theory, had the patient's bed arranged in a stall, between the cows on the same level, in order that the cow's breath might be inhaled as a medicine, as well as the fæcal odor.†

The distinguished Dr. Rush, who treated consumption by repeated bloodlettings, says prophetically: "Who knows but that, at the foot of the Alleghany mountains there blooms a flower, that is an infallible cure for the epilepsy? Perhaps on the Monongahela or the Potomac, there may grow a root that shall supply, by its tonic powers, the invigorating effects of the savage or military life, in the *cure of consumptions*."—*Med. Inquiries*, i. 264. At all events, the iron-wood, and consequently its roots, abound on the Monongahela river—a locality within Rush's vaticination.

That the iron-wood cure of consumption does not correspond with

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* Iron-wood, according to my recollection of it, is hard, heavy, sinking in water, seldom growing higher than twenty or thirty feet, being slender. Its botanical name is *ostrya virginica* or *carpinus*.

† Some people use internally, for medicinal purposes, the fæces of hogs and sheep—one an honorable magistrate, and (with one exception to be mentioned) a decent man, informed me that he washed his mouth daily with his own urine, to prevent scurvy of his gums! This, according to him, is an effectual remedy. Fresh cow fæces are sometimes used externally, for boils, etc.

the theory of Beddoes, is plain enough, because, according to him, oxygen causes the disease, while burdock accompanies the iron wood with the view of increasing the oxygen. Furthermore, as each dose of the compound contains the sulphate of zinc, it is not easy to determine which of these three agents is paramount. The latter, in small doses, is generally considered as tonic, astringent and alterative, and very useful in chronic diarrhœa, dysentery, and bronchitis, accompanied with copious expectorations, not to name other affections in which its medicinal virtues have been celebrated by pharmacologists.

Coïnciding with the view expressed by the writer of the preceding article as to the probability that many valuable remedies for the cure of diseases remain, as yet unknown, and that medical observers should make the utmost exertion to discover new remedies, nevertheless, the inexorable history of the past shows but too plainly, that with rare exceptions, the new remedies are not so good as the old, or, are wholly worthless.

In regard to pulmonary consumption, the recent progress of science in diagnosis, hygiene, and prevention, has not been correspondingly great in the therapeutics of this malady, notwithstanding the illusory eulogies lavished upon the curative powers of cod liver oil, the hypophosphites, and similar novelties.

M. Forget recently alluded to therapeutical novelties in the following just and witty language: "Every one knows that out of a hundred therapeutical novelties, there is, perhaps, not even one which is *viable*. If you wish a proof of this, look at the sacrifice of new remedies that are periodically made by the Reporter on them at the Academy. We are daily told, 'that when a new remedy appears, the first duty of the Practitioner is to believe in it; that he has no right to doubt the intelligence or the good faith of the inventor; that the first thing to do is to try it,' etc., etc. Now, this is all flagrant absurdity, not to say hypocrisy. Such false principles have been introduced by people who have an interest in being on good terms with everybody, and who find their account in parading new remedies. The truth is the very reverse of this. We ought to wait for the proof before exposing ourselves to new deceptions. There are always plenty of persons ready enough to try the new thing. The wise man will abstain before incurring a danger. Your embarrassment will be great enough if you fall into the snare. New reme-

dies rise up in such quick succession, that you will scarcely have done with one before another turns up. If you find a good one, soon you will be offered a better, and you will end your days hunting after remedies, having all your life played the part of a dupe, and leaving behind you the remembrance of a superficial and versatile practitioner, without having any settled convictions. The practitioner, therefore, is not obliged to experiment with new remedies. The rule has been invented by *intrigants*, for the purpose of getting themselves spoken of."

B. Dowler.

ART. IX.—*Cotton as an Under-Dress:* By W. D. Johnson, M. D.

Dr. Dowler: You frequently ask for practical suggestions and facts from your contributors. In accordance with that request, I proceed to give you some facts in relation to the beneficial effects of wearing cotton next the skin in winter, as being most conducive to health, comfort and economy.

In the fall of 1847, Major Simeon Oliver, our present Senator from this county, informed me he had several years before discarded woolen undershirts and drawers, and had worn the common Osnaburg for that purpose. The Major being a very sensible man, and having tested the two kinds of goods, I resolved to try the thing myself. After wearing the Osnaburg for two or three winters, I was fully satisfied that it was altogether superior to any silk or wolen underclothes I had ever worn. I began to suggest the thing to my friends, who, one after another, adopted the plan, until now very many of my patrons wear no wool next the skin, having not only abandoned the woolen shirts and drawers, but the socks also. As a consequence of this, I think colds, coughs and pneumonia are less frequent and malignant than heretofore.

The Osnaburg is rough at first, but we soon become accustomed to it, and become rather fond of it than otherwise. I will not attempt to give any theoretic views in regard to the *modus operandi* of the action of the Osnaburg on the skin, or the reason why it

imparts more warmth than the wool; but will ask all who are desirous to enjoy health and comfort at a cheap rate, to try it, more particularly those who have to resort to flesh-brushes and frictions to preserve health.

ART. X.—*Contributions to the Pathological Anatomy and Natural History of Cholera:* By BENNET DOWLER, M. D.

NUMBER TWO.*

VI.

Jan. 11, 1849, 10 A. M. Air of dead-house 51°. C. N., born in Ireland, aged twenty-two, was yesterday admitted into the hospital in the collapsed stage of cholera, having been sick thirty-six hours, with vomiting, purging, cramps, and algidity; was treated with brandy, sinapisms, etc. Died in three hours after admission.

The body, freely exposed for fifteen hours in the dead-house, the minimum temperature having been 37°, was rigid; the muscular and adipose tissues well developed and natural; the skin of a dusky blue color; the corneæ glossy and dry; dark ecchymoses in the subconjunctival tissue, with sanguineous discoloration of the lower portions of the corneæ and the sclerotic coats, which was most intense towards the canthi, but faded towards the central segments.

Brain.—Serosity moderate, perhaps diminished; venous vascularity of the pia mater.

Spinal Cord.—Natural throughout; serosity abundant.

Frontal sinus, salivary and lymphatic glands, fauces, tongue, pharynx, natural; the mucous membrane of the œsophagus striped with white, having longitudinal patches from which the epithelium had been removed.

Chest.—Trachea, bronchial glands, and lungs, natural; the vessels of the latter contained a considerable quantity of black adhesive

* In several preceding volumes of this Journal, three series of observations on the pathological anatomy of cholera have been published, the special histories of which are not designated by numerals except in one paper. My post mortem examinations, in this malady, commenced with epidemic of 1833.

blood ; the pleuræ unnaturally dry, or rather adherent to the touch, as if thinly coated with a mucilage like that of gum arabic ; pericardial serosity natural. Both sides of the heart were much distended with dark blood clots, more especially the right, and both ventricles contained fibrinous concretions of a grayish color ; the large veins greatly distended with soft, adhesvie, black clots ; the cavas nearly an inch in diameter.

Abdomen.—Peritoneum gluey to the touch ; the liver marbled with whitish spots and streaks ; the predominant color purplish ; the gall-bladder contained from two to three ounces of bile, of a natural color, consistence and taste ; bile ducts pervious ; the duodenum natural, but stained with bile ; the stomach and bowels contained a great quantity of milky liquid, somewhat tinged with bile, wholly free from fæces and fæcal odor, giving an acid reäction, tested by litmus ; pyloric third of the mucous tissue of the stomach, rugous ; the residue pale, softened, and near the cardia, pulpy ; vivid injection of the lower third of the small intestine variegated with elliptical patches of peyerian glands, which were prominent and granular, and brittle in texture—one being two inches long and the third of an inch wide ; the mesenteric glands hypertrophied and vascular ; the solitary glands of the large intestine somewhat enlarged ; the kidneys a little engorged ; the urinary bladder contracted, and moistened with a few drops of urine, which gave an acid reäction ; the nervous plexuses, lymphatic glands, pancreas, spleen, natural.

Note.—Although it is foreign to the purpose contemplated in these anatomical histories to accompany them with commentaries, explanations or applications, yet I may be allowed to call the attention of pathological anatomists to a very curious phenomenon in the eyes of cholera cadavera, of which, however, the above case is not a complete example, namely, a sub-conjunctival but extremely minute punctiform sanguineous infiltration or discoloration, neither like ecchymoses nor arborizations, but quite delicate and symmetrical, having an elliptical or crescentic figure, occupying the lower segment of the cornea, and a part of the sclerotica, its convexity being downward towards the malar bone, an appearance which, though inconstant, is nevertheless characteristic of or peculiar to cholera ; at least, I have met with it only in choleraïc cadavera. It is apt to escape observation, being usually covered from view by the lower eyelid. In the epidemic of 1848–9, I observed it in four choleraïc

cadavera in one day. (See vol. xv. of this Journal: *Researches into the Natural History of Cholera.*)

VII.

1849, Jan. 15, 1½, P. M. J. H., born in Ireland; aged forty; resident nine days; was admitted to-day in the collapsed stage of cholera. A hot vapor spirit-bath was administered in my presence, for about fifteen minutes; room 78°; cold sweat poured off his face; he complained of stricture and pain of the chest. About ten minutes after the bath his temperature was as follows: tongue, 89°; bend of the arm, 89°; axilla, 94½°; palm, 90°; calves of the legs, 90°; aphonic, cramps, vomiting, and purging; intense thirst; skin much corrugated and of a bluish leaden color; tongue tumid, moist, and clean; great pain in the left lung, at the heart; percussion natural; respiration imperfect, 36; pulse filiform, irregular, 120; face leaden hue; features sharp; eyes half closed, surrounded by a dark circle, sunken, a little injected; copious viscous sweat; scanty urine. He says that the choleraic symptoms began thirty-one hours since; diarrhœa for twenty-four hours; cramps, etc., for seven hours; at which time he dates his disease; mind clear.

Treatment: Blister on the chest; sinapisms to the extremities; brandy, bi-carb. sod., morphia, mint water. Died at night. Dissection fifteen hours after death: body universally rigid; skin slightly discolored from cadaveric injection in dependent parts; eyes injected; muscles and fat natural; abdomen without distention; rectum, 89°; center of the thigh, 81½°; of the calf, 77°; of the room, 74°.

Brain.—The meningeal vascularity chiefly venous; tenacity and opacity of the arachnoid considerably increased; serosity in the arachnoidal sack and ventricles, about two ounces.

Spinal Cord.—The cord and its envelopes natural, except slight injection—probably cadaveric.

Mouth.—Substance of the tongue natural; its papillæ at its base red and enlarged; the pharynx roseate; one of the amagdylæ hypertrophied and injected.

Chest.—Larynx natural; lungs moderately congested; firm adhesions to the diaphragm and costal pleuræ, with some injection; heart natural, but contained fibrinous concretions, with much blood on the right side; venous trunks dilated with blood.

Abdomen.—Gullet, in its lower half, striated, with black petechial

infiltration of the sub-mucous tissue ; omenta attenuated ; the stomach contained a turbid, yellow liquid—half of its mucous tissue next cardia softened moderately ; the gall duct open ; bile in the gall bladder; liver, solar plexus, kidneys, pancreas, lymphatic ganglia, urinary bladder natural ; the latter contained about twelve ounces of urine, or a liquid more colorless than urine, having a branny sediment ; the duodenum dyed with bile ; spleen wilted or collapsed to one-fourth of the usual size, being bloodless ; the jejunum and ileum contained a dense adherent mucosity—in some places bloody, in others dark or white, in others natural fæces. The large intestine contained about four pounds of liquid—the larger portion of which was turbid and thin, with considerable bloody mucosity. From the valve of the cæcum throughout the transverse arch of the colon, the submucous tissue was infiltrated with blood, and thickened, being of an intensely darkish red color ; portions of the submucous tissue of the rectum injected ; the solitary glands of the large and small intestine much enlarged and reddened ; several patches of intense vascularity and injection of a dark red color in the ileum—a patch of agminated glands in the latter, slightly developed without redness, which extended four or five inches in the same tissue. Much blood in the venous centres, which was dark and thick.

The pain of which he complained was probably owing to the hyperæmia of the large intestine, which lies near the heart, and the epigastrium, in a part of its course.

VIII.

C. S., born in England ; aged twenty-nine ; resident eight weeks. Although this patient had diarrhœa on the two preceding days, he was not taken until to-day, Jan. 16, at 2, A. M., with cholera in its violent form, attended with vomiting, cramp, coldness, cyanosis, pulselessness, thirst, and suppression of urine. Mind normal. Treated with carb. ammon., camph., paregoric, phos. calc., chlor. sod., doses every thirty minutes. He died ten minutes past one, P. M., nine hours from the first violent symptoms. The following is the temperature taken precisely at the end of every five minutes, with two thermometers, which were not changed during twenty-four double observations, with two exceptions, namely, during the first six double observations, and an interval of five or six minutes during the removal of the body to the dead house. Dead house, 74°.

Bend of the arm, 91°; axilla, 98°; bend, —92°; ax., 98°; popliteal, 96°; ax., 98°; pop., 97°; ax., 98°; bend, 89°; ax., 97¾°; rectum, 101°; ax., 97¾°.

	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg	Deg.	Deg.	Deg.	Deg.
Axil...	97½	97	97	97	96½	96½	96	95¼	96	96	96	96	95½	95½	95¼	95
Rect...	101	101	101	102	102	102	101½	101½	102	102	102½	102½	102¼	103	103	103¼

For an hour after death the spontaneous contraction of the muscles was violent augmenting for half an hour. The contractions were the most active on the right side, twitching the limbs and abdominal muscles, flexing the fingers with great force, so that it was difficult to straighten one of them. The contractions soon began on the left side, causing motions of the arm, fingers, etc. Convulsed, tremulous actions, and rapid twitchings subsequently prevailed at once, on both sides of the body. At the end of an hour there was a visible decline, the motions being chiefly confined to the fingers.

In an hour and a half the rigor mortis set in, first in the neck, and soon after, almost simultaneously in other parts of the body; this, of course, arrested all spontaneous motions exteriorly. An arm was repeatedly extended to overcome the rigor mortis; the biceps was then percussed; the forearm rose nearly perpendicularly; a second blow exhausted the contractility; after which the rigor mortis returned. About twenty minutes after death the under jaw was drawn down forcibly; the mouth open; soon after a tremulous motion took place in the jaw, attended with slight elevations and depressions, causing an oscillation like those of a chill. The pupils dilated at death; the eyes continued natural until the close of the dissection. At forty minutes after death, the thermometer having been introduced into the rectum, it was observed that an expulsive power was exercised on the instrument, not sufficient, however, to expel it. The instrument oscillated horizontally from side to side, forty-eight times per minute for nearly two hours after death; the vibrations were as distinct, after the entire body became rigid, as before. This peristaltic vibration of the thermometer prevailed after the abdominal muscles became rigid.

As soon as the limbs and trunk became rigid the adipose tissue and some of the muscles became non-elastic or doughy, pitting on pressure as in anasarca.

[On another occasion, a man who had died of cholera, from three

to five minutes after death, suddenly closed his left fist so firmly that I could not open it without difficulty ; soon after, he contracted the right hand violently, as he had previously done the other. It is probable that for some hours before his death, he could not have contracted his fingers more strongly by a voluntary effort.]

Body stout and well developed ; muscular and adipose tissues and eyes natural in color ; conea transparent ; external veins collapsed, except the left jugular, which was distended ; the cyanosis of the skin had faded, though for two hours it was still distinct, but very delicate ; there was no apparent positional injection. At death (and probably before) and for three hours after, that is, as long as observed, the balls or inner ends of the thumbs and fingers, opposite the nails, were forcibly depressed or indented in the centre, forming a regular concavity, about the fourth of an inch deep in the centre, as if the tissues and skin were adherent to the bone ; this cup-like form, when partially obliterated by lateral pressure, soon resumed its original concavity. The skin of the hands became less wrinkled in the cadaver than they had been at death.

Dissection two hours after death : brain, spinal cord, solar plexus, and the entire sympathic system natural. Exterior to the spinal theca considerable vascularity, turgidity and discoloration existed.

The lungs and air passages natural ; the former collapsed, not filling the one-eighth of the cavities ; the right side of the heart and cavas, enormously distended with black blood; coronary veins turgid; a twig being opened towards the apex, which was elevated, bled in about five minutes, nearly two ounces; the pericardium contained a few drops of clear and ropy liquid, like albumen, giving a slightly acid reäction.

The omenta, and all parts of the bowels, had their blood vessels, chiefly the veins, beautifully distended, as if by a living force, at elevated, as well as at depressed points ; the gullet and intestines natural, except one large, and several small elliptical patches of the agminated glands in the lower end of the ileum, which were pale and granular ; a few hypertrophied solitary glands of a similar hue were noticed ; the most vivid injection and uniform, deep red color, prevailed in the lower part of the small intestine for one or two feet. The cardiac half of the mucous tissue of the stomach was infiltrated with blood, having a somewhat punctiform appearance, extending deeply, but without change of consistence, the tissue peeling in

strips. The digestive tube contained about three or four pints of a white fluid, more like milk than rice-water, together with dense mucosity of a faint but not fæcal smell, without a trace of fæces or bile; some portions of this liquid gave a slight reddening to litmus, but in other parts of the canal none; nitric acid caused it to coagulate like albumen. The liver natural; the bile, which amounted to about two ounces, was liquid, of a dark yellow, and flowed freely into the duodenum by moderate pressure. The urinary bladder, which was contracted, contained a few drops of milky liquid, like that in the bowels, having acid reäction; the kidneys and pancreas natural; the mesenteric glands hypertrophied about eight or ten times; a few were red and injected; the spleen natural, except a wilting or collapsion like the lungs, its texture being supple, bloodless, about one-sixth of the normal size.

The pleuræ and peritoneum, coated with a slight glutinous or adhesive exudation. The blood, of which about two pounds flowed from the great vessels of the cavities, was black, thick and viscous.

ART. XI.—*Natural History; Seta Equinæ or Hair-worm in the Katydid.*

THE *Seta Equina*, or, as it is commonly called, the hair-worm, is generally found in stagnant water, measuring from four to six inches; its color is of a pale brown, with dark extremities. "It is said to be common in the intestines of the Laplanders, producing the colica lapponica, the griping of which is said to be extremely severe."

A few mornings previous to the penning of this article, the author, while sitting in his gallery, had his attention attracted to a little puppy that was playing with a large "katydid" by the side of his chair; and after many endeavors to destroy the insect, the dog left it lying apparently dead on the floor. In a few minutes there appeared projecting from the orifice of the anus a blackish looking worm, that proved to be, on close inspection, a *seta equina* of about four inches and a half in length; and, on opening the insect's belly, another was found coiled up of nearly the same length. The above

fact may not be of any practical importance, but in theory it is something to be considered. L. H., *a Student.*

Mobile, Alabama.

Of the entozoä of the katydid or platyphyllum concavum and even of the natural history of the latter little is known. Mr. Harris, in his work on the Insects of Massachusetts, says: "Of this insect, I have met with no scientific description, except my own in the *Encyclopædia Americana* (viii, 42), published in 1831." He asks, "can this be the *locusta perspicullata* of Fabricius?" The katydid, says Mr. Harris, "measures from the head to the end of the wing-covers one and a half inches, the body one inch.

This orthopteran, which abounds in Western Virginia, chants its rough notes in the nocturnal hours in the woods and gardens. It makes an almost articulate sound, pronouncing its own name, *Ka-ty-did! Ka-ty-did!*

Art. XII.—*Report of Stone's Infirmary, for the Year ending August 31st*, 1860: By T. G. Richardson, M. D., Attending Physician and Surgeon.

The Institution formerly known as Maison de Santé, but now called after its distinguished founder, Stone's Infirmary, was established in the year 1839 by Warren Stone, M. D. in connection with William E. Kennedy, M. D. The principal object had in view by these gentlemen, was to provide their patients, and more especially those who were not possessed of a home and its attendant comforts in the city, with suitable nursing and such other conveniences as are to be had only in a private hospital; and at the same time, by having the cases immediately under their supervision and control, to facilitate their acquaintance with the same, to watch the effect of remedies, and to provide against those sudden changes which frequently occur after serious surgical operations.

The Infirmary is not, therefore, a *charitable institution* in the ordinary restricted use of that term, nor is it the intention of

those interested in its management, by offering inducements of an economical nature, to divert patients from the hands of other physicians, either in the city or country. The terms of the house sufficiently demonstrate the truth of this assertion. But although the establishment is not a public eleemosynary, it furnishes a vast deal of gratuitous service in the way of professional advice to the numerous sick poor who daily apply at the office as out-patients ; for it is an established rule of the house never to refuse professional services on the score of poverty of the applicant. And in this connection, the writer takes the liberty of saying, that the charity thus dispensed by his benevolent colleague, Dr. Stone, incalculable in amount and unostentatious in its bestowal, is of itself sufficient to elevate its author to that high rank among philanthropists, which his well-known abilities have long since commanded in the profession which he adorns.

Such being the objects for which the Infirmary was established, and the principles upon which it has ever been and is still conducted, it will be readily understood that the majority of its in-door patients come from the large section of country tributary to New Orleans, and are, for the most part, directed thither by their attending physicians. It is, indeed, upon practitioners in the country, who oftentimes labor under great disadvantages in the treatment of cases requiring surgical operations or frequent and close attention, the institution must ever largely rely.

The following is the first attempt ever made to present an annual report of the cases treated in the house, and although it is in many respects defective, the hope is indulged that some into whose hands it may fall, may find it to contain matter worthy of their perusal. Hereafter, so long at least as the institution is under its present management, it is the intention of the writer to issue yearly reports more extended and analytical in their character, and thus, perhaps, to contribute a few facts to the common stock of medical and surgical knowledge.

The number of admissions for the year was :

	Males.	Females.	Total.
White patients	239	25	264
Negroes	283	145	428
Total...			692

The following list embraces only the patients proper and such cases as were distinctly classsifiable :

Abscess of shoulder	1	Deformity of thigh fr'm fracture	1
" forearm	1	Delirium tremens	13
" intra-pelvic	1	Diarrhœa, acute	31
" maxillary antrum	1	" chronic	9
" neck	1	Diabetes	1
" tibia	1	Dislocation of humerus	1
" lumbar	1	Dropsy, abdominal	1
" perineal	1	" general	4
" inguinal	3	Dysentery, acute	6
" popliteal	1	" chronic	5
Adenitis, chronic	1	Dysmenorrhœa	1
Albuminuria	5	Dyspepsia	14
Amaurosis	1	Eczema	3
Aneurism of thoracic aörta	1	Epilepsy	4
" abdominal "	1	Epistaxis	1
" ilio-femoral	1	Erysipelas	1
" femoral	1	Fever, intermittent	53
Ankle joint, chronic infl. of	2	" remittent	18
" " sprain of	1	" typhoid	8
Brain, congestion of	1	Fistula in ano	17
Bronchitis, chronic	5	" vesico-vaginal	3
Burns	2	" urethro-vaginal	2
Calculus of bladder	5	Foreign body in trachea	1
Cancer, epithelial, of face	1	Fracture of femur, simple	2
" " lip	2	" fibula	1
" encephaloid, of arm	1	" humerus	1
" scirrhus, of breast	3	" leg, simple	2
" " uterus	6	" " compound	1
Caries of ankle joint	1	" " double	1
" femur	2	Gangrene of leg	1
" tarsus	3	Gastritis	2
" ulna	1	Gonorrhœa	14
Catarrh	5	" chronic	2
Cephalalgia	1	Heart, valvular disease of	3
Cholera morbus	1	" hypertrophy of	1
Colica pictonum	5	Hæmorrhoids, internal	3
Colic	2	Hepatitis, chronic	5
Concussion	1	Hernia, inguinal	5
Conjunctivitis, chronic	3	" umbilical	1
" purulent	1	Herpes zoster	1
" scrofulous	1	" preputialis	1
" traumatic	1	Hip-joint, chronic infl. of	4
Constipation	1	Hydrocele	2
Contusions	1	Hydrothorax	1
Cystitis, chronic	2	Hypochondriasis	4
Deformity of face from burn	1	Hysteria	2
" abdomen "	1	Hysterical paralysis	1
" hand "	2	" peritonitis	1

Intemperance	8	Prostatitis	2
Intestinal obstruction	1	Rheumatism, acute	5
Iritis	1	" chronic	4
Knee-joint, scrofulous infl. of	2	Rheu., with valvular disease	2
" sprain of	2	Rheumatism, muscular	4
Lithia renalis	1	Roseola	9
Leucorrhœa	1	Rubeola	13
Maxilla, inferior, infl. of	1	Spermatorrhœa	4
Metritis, chronic	1	Spinal irritation	1
Morbus coxarius	1	Stricture of urethra	13
Necrosis of femur	3	" with perineal fistula	5
" frontal bone	1	" of neck of uterus	1
" lower jaw	3	Syphilis, primary	26
Nephritic irritation	1	" constitutional	24
Neuralgia of head	1	Tabes mesentrica	1
Occlusion of vagina	1	Talipes varus	1
Old age	3	Tetanus, traumatic	3
Onanism	2	Tonsillitis	3
Opthalmia tarsi	1	Tonsils, hypertrophy of	2
Orchitis	6	Tumor, adipose	4
Paralysis, hemiplegic	2	" keloid	2
" of bladder	1	" fibro-cartilaginous	1
Parotiditis	4	" painful, of breast	1
Periostitis	1	Ulcer of leg	10
Perineum, laceration of	2	" neck	2
Peritonitis	2	Urethritis	2
Phlebitis	2	Urticaria	1
Phthisis pulmonalis	29	Uterus, anteversion of	1
Phthisis pul. with meningitis	2	Varicocele	1
Phymosis	1	Varicose veins of leg	1
Pleuritis	1	Wounds, contused	9
Pneumonia	8	" incised	2
Polypus of uterus	1	" punctured	4
" anus	1	" lacerated	2
Pregnancy	7	" gunshot	3
Prolapsus of uterus	1	Wrist, sprain of	1
" vagina	3		

CALCULUS OF THE BLADDER.

Of the five cases of stone in the bladder admitted into the house during the year, the following memoranda were made. The patients were all white males.

Case 1.—W. E., æt. 56, from Attala county, Mississippi, admitted November 5. Patient laboring under great irritability of bladder of twenty-five years' standing; general health, in consequence, very much broken. Owing to the great sensitiveness of the urethra, the sound could not be introduced without the use of chloroform. Stone detected with some difficulty, in consequence of

violent contraction of bladder. Patient declined an operation, and left the infirmary the third day after his admission.

Case 2.—T. N. E., æt. 20, resident of Pike county, Mississippi, admitted November 21; has had symptoms of calculus for ten years; constitution originally feeble, and evidently tainted with scrofula; general health very indifferent; skin pale and sallow; countenance puffy; hands and feet cold; appetite weak and capricious; nervous system very irritable. The stone was readily detected upon the first sounding. Under the use of bark and iron conjoined, with porter and good diet, the general condition was somewhat improved, but the sufferings of the patient counteracting, in a great measure, the benefits usually derived from the employment of such means, it was concluded to remove the stone as early as possible. The lateral operation was accordingly performed by Dr. Stone, Nov. 26. The case did well for a few days, when a change occurred, manifesting itself first by a profuse flow of urine, and followed by a rapid decline in the vital powers, and a complete loss of all mental resolution or energy. The use of stimulants, tonics, nutritious drinks, etc., etc., were resorted to, but without avail, death occurring on the seventh day.

Case 3.—J. R. H., æt. 21, from Simpson county, Mississippi, admitted Dec. 15; general health very good; has had symptoms of stone for four years; stone discovered upon the first sounding; but the patient declined an operation, and left the house the following day.

Case 4.—M. W. S., æt. 5, from Hinds county, Miss., admitted March 5; general health tolerably good; has had symptoms of stone for more than two years. Diagnosis clearly established upon the first introduction of the sound, and the lateral operation performed by Dr. Richardson on the fourth day after admission. The wound being disposed to bleed, was plugged with sponge, which was allowed to remain for twenty-four hours. The parts healed slowly, the urine continuing to pass the unnatural opening until the seventh day. Patient was removed from the Infirmary March 22, the wound not entirely cicatrized, but letters received some weeks afterwards, stated that the parts soon became firmly consolidated, and the general health fully reëstablished.

Case 5.—T. D., æt. 23, born and raised in Iberville Parish, La., admitted March 11. Twelve months previously, patient had applied

to Dr. Stone who detected the presence of a stone, and placed him upon a course of treatment for the restoration of his general health which was very much enfeebled. The treatment prescribed not having the desired effect, the patient went to the hot springs in Arkansas, where he remained several months without deriving any benefit. Under these circumstances it was determined to remove the stone, which was a source of great irritation and consequent suffering, as soon as possible. The lateral operation was performed by Dr. Stone, March 26, and in less than two weeks, the patient left the Infirmary entirely relieved, and his general health rapidly improving.

CYSTITIS : TREATMENT OF, BY INJECTION OF NITRATE OF SILVER.

Of the two cases of cystitis enumerated in the catalogue, one was sub-acute in its character and the other chronic. The former presented nothing unusual in its history, and readily yielded to gentle antiphlogistic treatment, and the free use of diluents ; but the latter was rather a singular case, and is worthy of a more extended notice, not only on account of its history previously to the admission of the patient into the Infirmary, but particularly on account of the rapid and permanent cure effected by injections of nitrate of silver into the bladder.

History.—D. C., of Montgomery county, Alabama, æt. 22, a young man of good habits and vigorous constitution, on the 2d of August, 1859, leaped headforemost, with the intention of diving from a bank ten feet high, into a pool of water which he supposed to be sufficiently deep, but which was afterwards found to have a depth of only four feet. His head struck the bottom of the pool, which was composed of hard blue clay, and such was the violence of the concussion, that but for the immediate assistance of his friends, he would certainly have been drowned. Upon being taken from the water, he was found to be completely paralyzed throughout his entire body below the head, but complained of great pain, which he referred to the shoulders and arms. A physician was called, who attempted to bleed him from the arm, but succeeded in getting only about four ounces of blood ; a blister was also ordered to the back of the neck, and the pain relieved by the administration of opiates. On the second day, the bowels were opened by means of a cathartic ; but it was not until the *third* day that the condition of

the bladder was attended to, when the accumulated urine was, for the first time, drawn off by means of a catheter, which was subsequently introduced *once* a day for ten days. At the expiration of this time the bladder would no longer retain its contents, and the urine dribbled away as fast as it was secreted. He was now able to move his fingers and toes, and along with the return of muscular power, sensation likewise slowly manifested itself. At the end of the second month he could stand alone, and walk with crutches, and four weeks subsequently could ride a little on horseback, but the incontinence of urine continued.

Entered the Infirmary May 6, 1860, nine months after the accident, at which time he had entirely recovered from the paralysis ; and with the exception of a torbid state of the bowels, his general health was excellent, but the incontinence was as bad as ever. Upon examining his urine, collected by means of a gum-elastic bag which he was in the habit of using, I found a large admixture of mucus and phosphatic deposits, and was informed that clots of blood were sometimes observed to pass the urethra. The introduction of a catheter showed that there was no retention of urine, of which, as is well known, incontinence is often only a symptom. The case was, therefore, clearly one of chronic inflammation of the mucous coat of the bladder, induced in all probability by the over distension of the organ immediately after the accident.

Treatment.—Being satisfied in regard to the nature of the case, I determined to use nitrate of silver by injection, but upon the suggestion of Professor Stone, concluded to make trial, of dilute chloride of soda, which he stated had often succeeded in his hands in milder cases. For this purpose, a drachm of Labaraque's solution to an ounce of water was employed ; the bladder, which was found to be so much contracted as to hold only about two fluid ounces, having been previously washed out with tepid water. The solution of soda was allowed to remain in the organ about three minutes, and produced but little uneasiness. The injection was repeated on the third day, but as no benefit seemed to be produced, the nitrate of silver was substituted in its stead. The injection was made, as before, by means of a catheter and syringe, and the strength first employed, three grains to two ounces of water. No inconvenience was experienced, and at the end of forty-eight hours the operation was repeated with five grains of the salt to two ounces of water.

On the fifth day there was evidently some improvement, and on the sixth, the strength of the solution was increased to ten grains to the ounce of water. This produced some pain for twenty or thirty minutes, but the improvement at the end of twenty-four hours was remarkable. The injection was repeated every alternate day, and in less than two weeks from the time when it was begun, the patient could retain his water for eight or nine hours without difficulty, and the mucus and phosphate deposits had entirely disappeared. It should be mentioned, however, that, as adjuvant to the local treatment, a drink of bitartrate of potash was employed for the first two or three days, but subsequently dilute nitric acid, in doses of ten drops, three times a day, was given in its stead.

FOREIGN BODY IN THE WINDPIPE.

This was an interesting case. The patient, was a negro boy, 18 months old, from the interior of Mississippi. All the history that could be obtained was, that three weeks previously, while the child was playing alone upon the floor, he was suddenly taken with a violent fit of coughing, followed by a rattling in the respiration. The mother, who was in the room at the time, was not aware that the child had anything in its hands, and stated that there was nothing within its reach, so far as she could discover, that could be thrust into the mouth. The spasmodic cough recurred every hour or two for the first few days, but subsequently, the intervals became much longer, and sometimes half a day would elapse without a return, although in this respect, there was a good deal of irregularity Under these circumstances, the case was brought to the Infirmary. Upon examination, we found the respiration somewhat difficult and noisy, and upon applying the ear to the chest, a loud mucous râle was heard throughout both lungs. The cough was still spasmodic in its character, but did not recur oftener than two or three times in the twenty-four hours. There was no fever, and the general condition of the child was excellent.

Notwithstanding the imperfect history of the case, it seemed more than probable that the cause of the difficulty was a foreign body in the air passages, but of the character of the substance, no opinion could be formed. An operation was accordingly advised, and on the 8th of March, the trachea was opened by Dr. Richardson. A violent fit of coughing followed immediately upon the division of the trachea,

and although a good deal of mucus was expelled, no foreign substance could be discovered. All the ordinary means of loosening the substance and causing its expulsion, such as probing the trachea with long delicate forceps, suspending the child by the heels and slapping it upon the chest, etc., were resorted to, but without avail. The patient was then put to bed with a piece of gauze over the wound, and directions given to the mother to examine carefully the mucus expelled from the trachea, and also, to preserve the dejections from the bowels, which were also inspected. During the succeding night, the child had a single coughing fit and rested well. The expectorations and alvine evacuations were examined the next morning, but nothing was discovered. Throughout the day the respiration became much easier, and from that time there was no recurrence of the cough or other untoward symptoms. The wound healed in the course of a week or ten days, and the child was sent home entirely well.

That a foreign body was present in the air passages, the history of the case, both before and after the operation, clearly proves, but of what it consisted, no reasonable conjecture can be offered.

TUMORS.

Fatty Tumors.—The four cases of fatty tumor admitted into the house, presented nothing of special interest. The subjects were all male negroes, and the tumors were situated as follows : One upon the back of the neck ; one upon the front of the neck ; one upon the breast ; and one upon the back. The largest one did not exceed the size of a large orange. They were all removed with the knife, and the patients made speedy recoveries.

Keloid Tumors.—Of the two cases mentioned under this head, one occured in a negro woman, and the other in a negro man. In the former, the tumor was single and situated upon the mammary gland, involving only the skin, and as it appeared to be increasing in size very slowly, if at all, was the seat of no pain, and had no disposition to ulcerate, it was not deemed advisable to disturb it.

The other case was a remarkable one in consequence of the great number of tumors present, and also from the circumstance that some of them, instead of presenting the usually flattened form, were spheroidal and prominent, and some of them even pendulous. The number counted was over *eighty*, but as the very small ones were

not included in the estimate, the whole number did not fall short of a hundred. They existed for the most part upon the trunk of the body, but quite a number were also observed upon the extremities. The largest did not exceed the size of a billiard ball, and were situated upon the shoulders and back of the neck. Some of them had been in existence for several years, but the large majority had made their appearance within two or three years previously. They were not the seat of any pain, had no disposition to ulcerate, and were troublesome only on account of their mechanical inconvenience.

As excision is the only remedy known to be of any avail in this class of affections, nothing was done in the case but the removal of two or three of the largest tumors about the neck, where they pressed injuriously upon the ear and lower jaw. The operation was performed by Dr. Stone, and as soon as the wounds were in a fair way to heal, the patient was sent home.

Fibrous Tumor of Upper Jaw.—This case occurred in a negro woman about thirty-five years of age, and involved nearly the whole of the left superior maxilliary bone. The operation of excision was performed by Dr. Stone, and upon the removal of the alveolar border and palate process of the bone, the tumor was found to extend up into the antrum and press injuriously upon the orbital plate. Upon scooping it out, however, the latter portion of the bone was found to be healthy, although much thinned in consequence of the pressure. The woman made a speedy recovery.

Painful Sub-cutaneous Tumor of the Breast.—The patient was a married woman, aged thirty-five, the mother of several children. The tumor was about the size of a filbert, was seated just underneath the skin, and had been in existence for more than a year. The skin was a little reddened, but the parts were not sore to the touch, and the glands of the axilla not at all enlarged. As in all such cases, the characteristic symptom was violent and almost constant pain in the tumor, strictly local, and devoid of that lancinating, darting character observed in scirrhus. Removal by excision was determined upon without hesitation, and the operation was performed by Dr. Stone, by making an incision through the skin and turning the tumor out of its bed. The parts healed kindly, and the patient's general health, which had become somewhat deranged in consequence of the pain which she suffered, rapidly improved. The tumor, upon examination, was found to consist almost entirely of white fibrous tissue of the closest texture.

The remaining cases enumerated under the head of tumors, including those of cancer of the breast, did not possess sufficient interest to justify a detailed account. To this, however, exception may be made in reference to a case of

Scirrhus of the Breast of Unusually Large Size.—The patient was a mulatto woman, about fifty years of age. Her general health was excellent, and the disease had been in existence for ten or twelve months. The tumor involved the whole of the mammary gland, was irregularly spherical, but considerably flattened in an antero-posterior direction, measured about five inches in its largest diameter, and was slightly moveable upon the subjacent parts. The skin was closely attached over the face of the tumor, inflamed and *ulcerated*. The glands of the axilla, nearest the mamma, were enlarged and indurated.

The general health being good, and the patient exceedingly desirous of being rid of the disease, it was determined to give her the benefit of excision, although only temporary relief was anticipated. The operation was performed by Dr. Stone. As it was necessary to remove a large portion of the attached skin, and also the indurated glands, two incisions in the form of an ellipse, and not less than eight inches in length, were required. The hæmorrhage was very abundant, but was arrested by the application of dossils of lint soaked in a saturated solution of iron alum; and notwithstanding the great breadth and depth of the wound, the laxity of the tissues permitted the opposite sides to be brought nearly in apposition by means of deep sutures and adhesive strips. To the agreeable surprise of every one, the parts healed readily, partly by the first intention and partly by granulation, and in two weeks' time the wound had entirely closed. Six months afterwards the woman presented herself again at the Infirmary, and upon examination, the cicatrix was found to be entirely healthy, and the subjacent tissues soft and pliable. So far as could be ascertained, there was no development of the disease in any other part of the body.

SURGICAL DISEASES OF THE FEMALE GENITO-URINARY ORGANS.

Under this head may be enumerated the following cases, which will be found scattered through the report. The operations mentioned were all performed by Dr. Richardson :

Scirrhus of the uterus	5 cases
Polypus "	1 "
Prolapsus "	1 "
Vesico-vaginal fistula	3 "
Urethro-vaginal "	2 "
Occlusion of vagina	1 "
Prolapsus of anterior wall of vagina (cystocele)	2 "
Prolapsus of posterior " (rectocele)	1 "
Laceration of perineum	2 "

Scirrhus of the Uterus.—In all five of the cases of this distressing affection admitted during the year, not a single one seemed to admit of any relief by surgical interference, and the majority of them were discharged within a few days after the diagnosis was established.

Polypus of the Uterus.—In this case the foreign growth was not larger than a good sized pea, and was attached by a rather broad pedicle to the inner surface of the uterine neck, about three-quarters of an inch above the os tincæ. Owing to its situation, it almost completely blocked up the uterine outlet, and gave rise to a great deal of suffering at every menstrual period. Upon a first examination the nature of the difficulty was not discovered, but after dilatation the os tincæ by means of compressed sponge, the tumor made its appearance, and was twisted off with a pair of forceps. The removal of the tumor was followed by a complete relief from the menstrual trouble.

VESICO-VAGINAL FISTULA.

Case 3.*—*Vesico-Vaginal Fistula of Eighteen Years Duration; Operation; Cure.*—Mrs. McC., æt. 45, a large, healthy-looking woman, the mother of several children, became the subject of vesico-vaginal fistula immediately after the birth of her last child, eighteen years ago. Forceps were employed to assist in the delivery; but, failing in this, the obstetrician resorted to the use of scissors and crotchet. The urine escaped from the vagina two days after the operation.

Upon examination a circular opening about half an inch in diameter, was found in the vesico-vaginal septum immediately at the junction of the latter, with the anterior lip of the uterus. No unusual preliminary treatment or manipulation being deemed necessary, an

*Two cases were previously reported in this Journal.

operation for the closure of the opening was performed upon the third day after admission ; the method employed being that invented by Dr. Sims, as modified by Dr. Bozeman.

Owing to the situation of the fistula and its small size, great difficulty was experienced in paring the edges ; this having been accomplished, three silver sutures were passed through the parts in an antero-posterior direction, all of them penetrating the anterior lip of the uterus. The metallic plate was removed upon the ninth day, but the parts not presenting a very favorable appearance, the sutures were allowed to remain four or five days longer, at the end of which time they were withdrawn by Dr. W. C. Nichols, Resident Surgeon of the Charity Hospital, who attended the patient for Dr. Richardson, and the opening was found to be entirely closed. The patient was seen upon the street several months after the operation, and reported herself as entirely cured.

Case 4.—*Vesico-Vaginal Fistula of Two Years' Duration ; Several Operations ; Cure.*—Emeline, a negress, æt. 20, the property of Major J. J. Michie, of Yazoo county, Mississippi, was delivered of her first and only child, after a very protracted labor, by means of instruments. Urine escaped by the vagina two days afterwards.

The fistula occupied the bas fond of the bladder, was oval antero-posteriorly, and measured about an inch and a quarter in its long diameter. The general health of the patient was excellent, and the edges of the opening being soft and pliable, everything promised a favorable result. The operation was performed as usual, six sutures being required to bring the edges in close apposition. On the sixth day after the operation, the catheter was observed to be obstructed by a clot of blood, and upon a further examination, an accumulation of at least two or three ounces was discovered in the bladder and in the vagina, and the metallic plate partially forced off from the vesico-vaginal septum by intervening clots. I withdrew the latter carefully by means of forceps, pressed the plate into its proper position, stuffed the vagina with a pledget of lint soaked in a solution of iron alum, and injected the bladder with a solution of tannin. This had the effect of stopping the hæmorrhage, the cause of which I could not ascertain. Entire union under these circumstances was not to be expected, but upon removing the plate a few days afterwards, I was agreeably surprised to find that the fistula was firmly closed except at each extremity where there remained an opening not much

larger than a good sized probe. To close these openings was the next endeavor, which, however, was not attempted for two or three weeks.

Not to protract the account, suffice it to say, that the same accident occurred after the second operation as after the first, and it was not until I had performed as many as four operations, at intervals of several weeks, that an entire closure was effected.

CASE 5.—*Vesico-Vaginal Fistula of Two Years' Duration; Operation; Death from Causes not connected with the Operation.*—In this case—a negress æt. 20—the fistula, produced as in the preceding, was situated at the junction of the vesico-vaginal septum with the uterine neck. The interior of the vagina was extensively ulcerated, and the sufferings of the patient produced by the contact of the urine with the inflamed and raw surfaces were most distressing. Treatment was instituted to put the parts in a healthy condition and to improve the general condition, but this was only partially successful, when it was determined to try the effects of an operation. The result of the latter was only to diminish the size of the opening. The patient was put upon constitutional treatment, and the vagina daily injected with tannin and opium, but with not much better success than before. Again an operation was determined upon as offering the only hope of alleviating the patient's sufferings, and again a failure was the result.

It being now evident that it was impossible to get the parts to unite until they were placed in a better condition, and the general health improved, all the ordinary means that could be thought of were put in requisition for this purpose, but the case continued to progress from bad to worse. Finally, having carefully placed the patient under the influence of chloroform for the purpose of exhibiting the diseased parts to a professional friend who has had large experience in such cases, the patient was elevated upon her knees and elbows when she suddenly ceased to breathe. Artificial respiration was immediately resorted to and continued for some time, but proved of no avail. The exhausted state of the system was of course the primary cause of the accident, as the amount of chloroform employed was much less than had been frequently given before for the same purpose. Indeed the patient had been obliged to resort to its use frequently during her protracted confinement to bed in order to alleviate her intense sufferings.

Case 6.—*Urethro-Vaginal Fistula of Four Months Duration; Operation not Practicable.* The subject of this unfortunate accident was an unmarried young woman of respectable family, from the interior of Mississippi. The case was interesting on account of the obscurity of the producing cause, and the extent of the loss of substance.

All the history that could be obtained from the young lady herself was that she had suffered some months before from inflammation of the bladder which resulted in an inability to retain her water.

Upon exposing the parts by means of Sims's speculum the nature of the difficulty was at once revealed: the whole of the urethra from the meatus to the neck of the bladder was entirely destroyed, except a narrow longitudinal strip about a fourth of an inch wide, corresponding to the upper wall of the canal. The edges of this strip presented an irregular ragged appearance as did also the edge of the neck of the bladder, but the parts were in a healthy condition. The destruction was evidently the result of former ulceration, which had done its work so thoroughly as to leave no available tissue out of which a urethra could be formed. Further questioning led me to suspect that the cause of the ulceration was the introduction of a foreign substance into the vagina, as it was evident from the appearance of the abdomen and the neck of the uterus that the patient had never been pregnant.

The case being considered irremediable was sent home without an operation.

Case 7.—*Urethro-Vaginal Fistula of Seven Years Duration; Operation; Cure.* The patient was a negro girl about 30 years of age, the property of Mr. W. Evans of Hinds Co., Miss., and sent to me by my friend Dr. M. W. Boyd of Jackson. The accident was ascribed to a protracted parturition, in which however no instruments were employed. She has had three children since the occurrence.

An examination disclosed a complete division of the urethra immediately at its junction with the bladder. The canal was not simply opened upon its lower wall but entirely divided, so that the two opposed orifices could be everted by a tenaculum and seen throughout their whole circumference. Owing to the laxity of the parts and the limited destruction of tissue the edges could be readily brought into contact.

The operation was performed as for vesico-vaginal fistula, care being taken to bring the ends of the divided urethra as nearly

together as possible. Four sutures were required, and upon the removal of the metallic plate at the end of ten days complete union was found to have taken place. The patient was kept at the Infirmary for a week or two after the operation until there was complete control over the retention and discharge of urine, when she was sent home, and as nothing has been heard from her master since, it is reasonable to suppose that she continues entirely well.

OCCLUSION OF VAGINA. — Sarah, aged 20, a mulatto, the property of Mr. D. of this city, admitted November 29, 1859, was confined twelve months previously, when for some cause or other it became necessary to remove the child by cephalotomy. Inflammation and sloughing of the interior of the vagina followed upon the operation, and the result was complete closure of the canal. Upon examination I found the closure to begin immediately behind the lesser labia, the parts being here drawn closely together to form a small puckered cicatrice not more than one-third of an inch in diameter. There was evidently an accumulation of menstrual fluid in the uterus, the tumor being clearly distinguished above the pubes and distinctly felt by the finger inserted into the rectum. By the latter procedure, aided by a catheter in the bladder, I also ascertained that the occlusion occupied nearly or quite the whole length of the vagina, as the tumor formed by the accumulated fluid descended into the pelvis but little lower than the normal situation of the os tincæ, and below this point the finger and the catheter were separated by a septum of firm tissue, judged to be not more than half an inch in thickness.

As the patient was suffering a good deal from the increasing size of the uterine tumor and was subject to monthly exacerbations of pain of a severe character, the indication was clear that the only hope of relief consisted in evacuating the accumulated fluid and establishing a permanent opening, by which the menstrual flow could readily discharge itself at each monthly period. To open the tumor through the rectum would have been sufficiently easy, but owing to the fact that the peritoneum intervenes between the upper back part of the vagina and the rectum, such an operation would most likely have resulted in fatal inflammation of the serous membrane. The only feasible plan, therefore, consisted in penetrating the firm and rigid tissues occupying the original site of the vagina, although in consequence of the close approximation of the

bladder and rectum the procedure promised to be both delicate and difficult. Of course reëstablishment of the vagina was out of the question, the most that could be expected was a fistulous track in the situation of the original outlet.

The course of procedure having been decided upon, the operation was performed on the 31st of November, in the presence of Prof. Cenas, Dr. Morrison, and a number of students. Owing to the cylindrical form of the contraction I selected a trocar in preference to a bistoury for the purpose of making the opening, and the manner of using it was as follows: The rectum having been previously washed out by means of a clyster, the forefinger of the left hand was introduced into the bowel, and a male catheter inserted into the bladder. The catheter was confided to an assistant, with directions to keep it hooked firmly beneath the pubes for the purpose of drawing the bladder out of the way as much as possible and making the parts tense. The finger in the rectum was intended mainly as a guide to the trocar. The latter was now thrust into the centre of the small cicatrice, and, by firm pressure and a slight boring motion, carried slowly and carefully along the natural path of the vagina. After penetrating to the depth of about an inch and a half the point of the instrument seemed to be free, and upon withdrawing it, leaving the canula in its place, a stream of thick, tarry looking fluid made its appearance. By pressing upon the tumor three or four ounces of the fluid were discharged, when it was deemed prudent to arrest the flow for fear of the introduction of air, and to allow the uterus time to contract. For this purpose a wooden plug was inserted into the canula and the latter left in its place. The patient was then put to bed and an opiate administered. The following day there was a slight febrile movement and a good deal of soreness, but the patient did not complain of constant pain.

On the third day I resolved to allow the discharge of another portion of the fluid, and, as a precautionary measure against the admission of air, the patient was directed to sit in a tub of warm water. Owing to this circumstance, the amount which escaped could not be positively ascertained, but it was not more than three or four ounces. The canula having become somewhat loosened by suppuration, was removed, and the orifice closed by compress and bandage.

The same procedure was repeated several days in succession, when the tumor, having been completely emptied, and the opening

beginning to contract, I introduced a cylinder of compressed sponge into the latter for the purpose of dilating it. The swelling of the sponge gave rise to a good deal of pain, and had to be removed in the course of a few hours, but its effects were well marked. A day or two afterwards I again used the sponge, which was better borne than before, and by thus repeating it for several days the opening became sufficiently dilated to admit the introduction of the forefinger with difficulty. At this point the dilatation seemed to cease, and when allowed to remain at rest for a few days the canal contracted down again to the size of a large catheter. Under these circumstances, I resolved to enlarge the calibre by incisions, which were made by means of a probe-pointed bistoury upon each side of the canal, cutting to the depth of one-fourth of an inch. The parts were now stuffed with lint, and when the succeeding inflammation had subsided, I resorted to the use of bougies, such as are employed in stricture of the rectum. As long as these were used the opening was kept sufficiently large to admit the forefinger readily; but no impression seemed to be made upon the induration of the walls of the canal, and when undisturbed, they contracted as before, and I therefore discharged the patient at the end of ten weeks, with directions to continue the use of the graduated bougies daily, and to call at the Infirmary at least once a week and report progress. However, owing to the pain produced by the bougies, she failed to insert them, and in the course of a week or ten days it was with great difficulty that I could force my forefinger along the passage. I now had recourse to an anal speculum, and with this attempted dilatation twice a week, but the patient soon got tired, and came so irregularly that the treatment was abandoned. The opening now, a year since the operation, continues patulous, and is sufficiently large to admit the introduction of the forefinger with difficulty.

[illegible]rse of the treatment, when the bougies were employed to [illegible]on, an inflammation was set up in the veins of the [illegible]panied by swelling and great pain, and for a while [illegible] the life of the patient. She informed me that she suffered in a similar manner after the operation for the removal of the fœtus.

I have been thus particular in describing the foregoing case and its treatment, on account of the singularly frequent mortality which results from operations of this kind. This unfavorable result, I am convinced, is due, in a great measure, to the introduction of air into

the uterine cavity, and the consequent putrefactive process set up in the retained fluids, the patients dying usually from metro-peritonitis. The close relation of the peritoneum to the upper back part of the vagina also serves to account in part for the frequent inflammation of that membrane after such operations.

PROLAPSUS OF THE ANTERIOR WALL OF THE VAGINA (CYSTOCELE).

Case 1.—*Polapsus of Anterior Wall of the Vagina, Complicated with partial Prolapsus of Uterus; Enlargement and Induration of Os Tincæ and Chronic Cystitis, with great Diminution in the Capacity of Bladder.* This was a rare and exceedingly interesting case, such an one, indeed, as never before fell under my observation, nor have I been able to find its like in the recorded experience of others.

Lethe, a rather delicate looking mulatto woman, act. 25, the property of Mr. Easly, of Amite county, Mississippi, was entered at the Infirmary, December 14, 1859, on account of incontinence of urine. She was the mother of one child, then five years old, and she assribed her troubles to taking cold after delivery, as since that occurrence she had not been able to retain her water longer than five or ten minutes at a time during the day, and at night had no control whatever over the bladder, the urine dribbling away as fast as secreted. During the five years in which she had thus suffered with incontinence she had been variously treated, but with not the least benefit; on the contrary, her general health had declined in consequence.

Upon examination I found great relaxation of the vaginal walls, the anterior of which was prolapsed, although not sufficient to protrude beyond the vulva. The os tincæ was swollen, and hung almost upon a level with the orifice of the urethra. The bladder was contracted and empty, and, upon injecting it with tepid water, it could not be made to contain more than half a fluid ounce. The urine was normal in quantity, and, upon the first examination, also in quality, although it subsequently became loaded with uric acid salts.

Not being able to decide positively whether the prolapsus of the vaginal wall and the irritability of the bladder were primary or secondary to the indurated and congested state of the uterine neck and its consequent subsidence, but, rather inclining to the latter opinion, I had the patient put to bed, with directions to lie as much as possible upon her back; ordered daily injections into the vagina

of a solution of tannin, 20 grains to the ounce of water, and prescribed calomel in minute doses, to be given morning and evening, until its constitutional effect began to show itself. Slight ptyalism was produced in the course of five or six days, and this was kept up for a fortnight, the patient, in the mean time, taking tincture of bark twice a day. Under this treatment the condition of the neck of the uterus was much improved, but the urinary difficulty continued unabated.

Examining the bladder again with great care, its walls were ascertained to be much thickened by hypertrophy of its muscular tunic, and its mucous lining so sensitive that injection of so bland a fluid as a tepid solution of gum arabic was speedily and forcibly ejected. It now occurred to me that the cystitis was probably the original trouble, and that the condition of the uterus and vagina resulted from the constant straining which it necessarily induced. I concluded therefore to direct the treatment to this point, and began by painting the anterior wall of the vagina with tincture of iodine, and injected into the bladder half an ounce of water holding in solution five grains nitrate of silver. This produced little or no suffering and at the end of twenty-four hours there was a marked improvement in the symptoms. On the third day the applications were repeated with the same effect, and the injections were therefore continued. In two weeks the patient was able to retain her water for an hour during the day, but could not yet control the nocturnal incontinence. The nitrate of silver having apparently ceased to be of benefit I substituted the acetate of zinc, eight grains to the ounce of water, and in three weeks all the symptoms of vesical irritability had entirely subsided, and the patient having in the mean time been required to make daily efforts to retain her urine as long as possible, she could now pass three or four hours comfortably without emptying the bladder during either day or night. Along with this improvement the prolapsus of the uterus and vagina had in a great measure disappeared and the os tincæ become more soft and pliable.

Convinced now that the pathological condition of the parts had been entirely remedied and that all that was necessary to perfect the cure was to require the patient to continue to exercise a restraint upon her desires to empty the bladder, I permitted her, after a sojourn of ten weeks in the Infirmary, to return home, with directions to her master to write to me in case she did not entirely

recover. It is now ten months since she was discharged, and as I have heard nothing of her since, I have reason to conclude that she experienced no farther difficulty.

Case 2.—*Complete Prolapsus of the Anterior Wall of the Vagina: the Bladder forming a Large Tumor external to the Vulva.* The principal interest of this case consisted in the fact that the patient was a young girl, only 19 years of age, who had never borne children. The only discoverable causes likely to have produced the affection were a protracted whooping-cough with which she had suffered twelve months previously, and intestinal worms, of the lumbricoid variety, with which she was affected at the time of her admission. I was led however to suspect that she had been addicted to onanism, and it is possible that this may have been the true source of the difficulty.

Whatever may have been the producing cause, however, there was no doubt as to the condition of the parts. The prolapsus was complete; the bladder formed a large pale pinkish tumor between the thighs, and upon returning it into the pelvis it would reäppear beyond the vulva upon the slightest contraction of the abdominal muscles. The walls of the vagina were but little hypertrophied, the surface of the tumor was somewhat roughened by exposure and friction but not inflamed, and there was no irritation of the mucous membrane lining its interior.

Having by appropriate treatment gotten rid of the intestinal worms, I performed an operation upon the vagina, for the purpose of contracting its calibre, and also upon the bladder itself. This operation consisted in dissecting a long V-shaped strip of mucous membrane from the posterior wall of the vagina, an oval section of the same from each lateral wall, immediately below the urethra; and also an oval piece of the same, 2½ inches in length by 1½ inch in breadth, from the most prominent part of the tumor itself. The opposite edges of each of these denuded surfaces were brought together by means of silver sutures, beginning with that upon the bladder, which was then replaced in the pelvis. When the sutures were all in place, the vagina would barely admit the forefinger easily, and I felt confident that a cure would be the result, provided union took place.

Two days after the operation, the patient suffered a good deal from strangury, and the consequent straining caused some of the sutures to give way; but notwithstanding, when the inflammation had sub-

sided, and the wires were removed, on the eighth day, the bladder seemed to be firmly supported in its natural position. However, when the patient had entirely recovered from the effects of the operation, and was allowed to walk about the house, it was evident that the organ had a tendency to prolapse, and could be already seen upon slightly separating the labia. I therefore determined to repeat the operation upon the posterior wall of the vagina, but before I had an opportunity of doing so, the patient left the house.

CASE 3.—*Prolapsus of the Posterior Wall of the Vagina; Operation; Cure.* Patsy, a negro woman, aged fifty, the property of Mr. Tobias Gibson, of Terrebonne, La., admitted January 20, 1860. States that for a number of years "her body has been down," * and ascribes the accident to frequent child bearing.

Upon examination a soft reddish tumor was just visible between the labia, and upon separating, the latter was found to be composed of the mucous membrane of the posterior vaginal wall. The uterus was also depressed, but not sufficiently to constitute a prolapsus, the displacement seemingly the result of the relaxed and prolapsed condition of the posterior wall of the vagina.

The patient's general health being good, the case was clearly a most favorable one for an operation. Accordingly, a few days afterwards, she was ordered a laxative to be followed by an opiate, as preliminary measures, which having been carried out, I performed the usual operation, which consisted in the removal of a long V-shaped flap of mucous membrane from the posterior vaginal wall, and approximation of the edges by means of silver sutures. The patient was subsequently kept upon her back, the bladder emptied regularly by means of a catheter, and the bowels confined by the daily use of opium. This was continued for seven or eight days, when the sutures were removed and the parts found to be firmly united.

It is now nearly twelve months since the operation, and the patient remains completely cured.

LACERATION OF THE PERINEUM.

CASE 1.—*Complete Laceration of the Perineum in a Child.* P. C., a bright little girl, five years of age, was brought from Texas by her mother to the Infirmary, Nov. 25, 1859. The accident had been produced twelve months previously by a fall upon the sharply cut stump

* An expression in common use among negroes to imply either prolapsus of the uterus or rectum.

of a sapling. I was told that there was a great deal of hæmorrhage at the time, which was arrested by cold cloths, and that, although the nature of the injury was immediately recognized, no attempt other than approximation of the thighs, was made to bring about reünion.

Upon examination I found the rectum and vagina laid open to the depth of at least an inch, the sides of the rent completely cicatrized, and its bottom crossed by the sharp lunated edge of the recto-vaginal septum. The patient was able to retain her fæces only when consistent. Her general health being good, I operated upon her a few days after her arrival, by paring the edges and bringing them together with the button suture, three silver threads being required. I also divided the anal sphincters upon both sides, as advised by I. B. Brown. Owing to the smallness of the vagina, the difficulty of paring the edges and introducing the sutures was exceedingly great, and required the little patient to be kept under the influence of chloroform for nearly three hours. After the operation, the bowels were confined by means of Battley's sedative, three drops being given three times per day. It was my intention also, to draw off the urine three times per day, but this was found impracticable, owing to the contracted state of the vulva and the restiveness of the patient, and I was compelled, therefore, to allow her to pass it in the natural way, having taken care to protect the parts as much as possible by a thick coating of collodion.

In about forty-eight hours after the operation the parts began to suppurate, and shortly afterwards the metallic plate became loosened. These circumstances convinced me that the sutures were cutting out by ulceration, but, hoping that this would cease, and the parts heal by granulation, I did not remove the plate until the fifth day. No union had occurred, but I determined still to give the parts an opportunity to coalesce, and for this purpose left the wires in place, applied a single thickness of lint wrung out of warm water, approximated the thighs by means of a bandage, and continued the use of the opiate. At the end of a week the wires were withdrawn, but no union had occurred, except along the cutaneous border.

After the lapse of two or three weeks, the child's health having been in a great degree reëstablished, I made another attempt, but having been thoroughly convinced, by the previous operation, that the button suture was wholly inapplicable, I adopted the quill suture, substituting a single silver wire for the double silk threads

usually employed, and two perforated strips of stiff gutta percha in stead of the quills, the wires being fastened by compressed shot. The method was, in other words, the clamp suture, as originally employed by Dr. Sims, in the cure of vesico-vaginal fistula. I also made use of Dr. Sims's self-retaining catheter after the operation. Much to my disappointment the parts again suppurated, and I was obliged to remove the sutures on the sixth day. Union was somewhat more extensive than before, but confined to the cutaneous border.

Having again waited three or four weeks, during which time efforts were made to improve the general health, the last mentioned operation was repeated, when it became necessary to divide the little bridge of skin uniting the edges. Considerable union was the result, but still the bottom of the rent remained unclosed, leaving a recto-vaginal opening about three lines in diameter. I now thought it best to send the patient to the country, promising, when her health should become restored, and the parts already united more firmly consolidated, to make an effort to close the opening. I have since heard that she is doing very well, and experiences but little inconvenience except when her stools are liquid.

CASE 2.—*Complete Rupture of the Perineum; Operation; Cure.* Matilda, a slave, aged 20, admitted December 20, 1859. Accident occurred three months previously, when in labor with her first child. Found, upon examination, a complete rupture of the parts lying between the vagina and rectum, the rent extending upward as high as, and slightly encroaching upon the recto-vaginal septum. After the usual preliminary treatment the operation described in connection with the preceding case was performed, but resulted only in the union of the cutaneous border. After a proper interval of time, the operation was repeated, but with like result. The difficulty seemed to be to keep the edges of the deep portion of the fissure in approximation without exerting too much strain upon the sutures, and I resolved, therefore, the next time, to operate upon that portion first, and bring the edges together with two independent silver sutures, closed by compressed shot within the vagina, and then to follow the usual method in reference to the remaining portion, which comprised the whole of the perineum proper. This was accordingly done, and although a small fistula remained after the removal of the sutures, this subsequently closed, and upon examination of the parts eight months afterwards, no trace of it could be found.

Art. XIII.—*Speculative, Practical and Critical Remarks on Pessaries:*

By Bennet Dowler, M. D.

The physician is much in the same position with regard to his judgment of his own measures and remedies as the teacher in regard to his method of education, and the statesman with regard to his regulations and laws. All of them frequently see and find precisely what they wish to see and find. They, perhaps, compare themselves to such technical men, for example, as operate upon inanimate and passive objects only, and overlook that they have to deal with entirely different things, with processes which are self-acting, and proceed according to their own peculiar laws. But as physicians so frequently wish to demonstrate the positive services of their remedies, the most abundant opportunity for error is furnished by the circumstance that their observation, and still more, their interpretation of the state of things, only too easily become one-sided, if not entirely incorrect. * * * In the end, indeed, we are all but unskillful horsemen on our own ground, and 'whichever way God and our horse wishes' applies, more or less, to all of us.—*Medical Logic.* F. Oesterlen, M. D.

La médecine est la plus noble des professions, et le plus triste des métiers. Reveille Parise.

The venerated teacher and voluminous writer, Dewees, who within the last two decennia descended to the tomb full of honors and of years, in his work on the *Diseases of Females*, says that the "pessary is the only efficient remedy for prolapsus uteri." Through his influence, chiefly, the pessary was inaugurated throughout this broad land. But it has already passed its culminating point, and every year hastens its decline. The pertinacity with which this distinguished obstetrician, and some others who will be mentioned in the sequel, advocate this instrument, is the more remarkable from the fact, that, according to their own exposition of the pathology or cause of prolapsus uteri, a pessary must, as it seems to me, augment the pathological condition or cause of the complaint. "I have already remarked," says Dr. Dewees, "that neither the broad nor the round ligaments were calculated to sustain the uterus in its natural position; if this be so we must look to some other part for the support of this organ—and this is the vagina itself; this office of the vagina we may deduce from the manner in which it is united to the uterus, and the mode in which that canal is joined to the rectum and bladder. The whole of this arrangement gives at once the idea that the vagina is the efficient support of the uterus; it then follows, that whatever is capable of weakening the foundation, will tend to injure the superstructure." *(Dis. Fem.* 209.) This statement represents the existing opinions upon the subject. Dr. Churchill "doubts whether the lateral ligaments [of the womb] contribute in any degree to prevent displacement." Prof. Bedford in his *Clinical Lectures* says the same, adding: "The natural foun-

dation of the uterus, and that which gives it due support, under ordinary circumstances, is the vagina." Such, indeed, is the accepted exposition, be it right or wrong.

The Bells, in their Aanatomy, affirm that the vagina, notwithstanding its distensibility, closes upon itself in the normal state. "Naturally its sides, by their own elasticity, the fullness of the veins which are upon it, and the contraction of the surrounding fibres, are in contact. The firmness in the structure of the vagina supports the womb." Dr. S. G. Morton, in his Anatomy, maintains that the parietes of the vagina are "in close apposition." Hence, according to these views, the vagina is a plenum. Recently, Professor Gardner, in a discussion in the Academy of Medicine in New York, said: "The vagina, it would seem, is supposed to be an empty tube; but, in truth, the vaginal walls are in close coäptation, so much so, that when a woman is immersed in water, not a drop goes into the vagina. This is generally forgotten."

The following is Dr. Meigs's definition of prolapsus uteri, including piquant, if not imaginative illustrations of this affection: "By this is understood a case in which the os tincæ approaches too near the orifice of the vagina; and the degree of the prolapsion might, perhaps, in strictness, be measured by the distance between the orificium vaginæ and the orificium uteri. I say, in strictness; yet I wish you to understand, that the amount of pain, distress, or inconvenience is by no means proportioned to such a degree; because you shall find that a woman, with but a slight descent, shall suffer vastly more therefrom than another woman, whose womb has fallen twice as low down in the pelvis. Indeed, there are some women who always find the mouth of the womb to peer out at the genital fissure when they are on their feet, and yet feel no pain from it; while others are observed to suffer the most vexatious and even intolerable pain, from a very slight depression indeed. The slightest descent of the womb, produces in many women, a most intolerable abdominal neuralgia, which disappears in an instant, in the twinkling of an eye, when the surgeon presses the tip of his index finger beneath the os tincæ and raises the womb upwards a mere quarter of an inch." (*Woman: her Diseases.* 3d, ed.)

Without dwelling on this picturesque description, or allowing that "a descent of a mere quarter of an inch" constitutes prolapsus, I venture to think that the action of the pessary, the anatomical

confirmation of the pelvis, and the principles of mechanics, equally show that the pessary cannot prevent prolapsus uteri, as its advocates themselves claim nothing medicinal for the pessary, which acts solely in accordance with the laws of mechanics. "A man," says Prof. Meigs, "might as well treat fractures without the splint, as these affections without some mechanical stay and support on the inside, not the outside of the body. In these cases the remedy is chiefly mechanical; it consists in adjusting beneath the womb an instrument which lifts it up, etc. The pessary is to be regarded as the suspensory, as the splint, as the bandage. * * * You have now not the intelligence only, but the means, apparatus [pessary], and authority required to effect a certain and durable cure. If you do not effect that cure, the fault will lay at the door, not of the malady, but at your door."

In what way the application of a pessary resembles a splint in fracture is not altogether evident. A naked splint, without soft wadding being bound upon a limb, must necessarily press with its principal force upon a few salient points in order to fix splint and limb so as to prevent motion. Now every practical surgeon knows that in a very short time these points will ulcerate or mortify, although the skin and its subcutaneous tissues possess a vital power of resistance, which may reasonably be supposed to surpass that of the soft, sensitive mucous membrane of the vagina and other tissues, which are forcibly pressed by rigid pessaries, the forms of which are almost innumerable. In the sequel this topic will be resumed.

During the very hour, while looking at these authorities, a new and highly distinguished one comes to hand—a beautiful volume, by the veteran Professor of Obstetrics in the University of Pennsylvania, Hugh L. Hodge, M. D.; namely, a volume on *The Diseases Peculiar to Women*, from which a few extracts will be here subjoined: "*Mobility of the Uterus.*—The uterus is a movable organ. It has a pendulum-like motion between the pubis and the sacrum, the fundus being pushed backwards by the distension of the bladder, and forwards by the weight of the intestines, when the bladder is empty; so that the axis of the uteris does not always coincide with that of the superior strait. The uterus also descends to a certain extent, when any straining effort is made, and is drawn up by the strength and elasticity of its attachments. *Supports of the Uterus.*—From its location,

in the inferior part of the body, the uterus is, however, subjected to great pressure from the weight of the small intestines, the mesenteric attachments of which allow them to sink around the uterus to the lowest part of the pelvis This pressure is increased by feculent accumulations in the large intestines, especially in the sigmoid flexure of the colon ; by tympanitic distensions ; by adipose deposits in the omentum, mesentery, etc. ; and especially by the contraction of the muscular parietes of the abdomen in all the efforts of standing, walking, running, straining, in defecation, vomiting, sneezing, coughing, lifting weights, etc. It is no wonder, therefore, that we hear of displacements of the uterus ; but rather, that the natural position can, in any individual, be maintained against such great and constant weight and pressure. This astonishment is not diminished when we find that the strong and hard-working women are, perhaps, less liable to displacement than the delicate and feeble."

This graphic description of the mobility of the uterus, "hair-hung and breeze-shaken" "pendulum," vibrating to and fro by every tympanitic cause, or displaced by the ponderosity of superincumbent floating organs, applies *à fortiori* to the pessary, which he advocates in the following language, which he himself very justly says, "will doubtless be regarded as very extravagant—namely, the long experience of the author in the use of pessaries, will, perhaps, justify the expression of his opinion, that the mechanical treatment of uterine displacements by intra-vaginal supports, is essential, a *sine quâ non*, for their perfect relief ; that, by pessaries, of suitable material, size, and form, the uterus may very generally be replaced and be maintained *in situ ;* that the local symptoms of weight, pain, etc., the leucorrhœa, the menorrhagia, the dysmenorrhœa, and all the innumerable direct and indirect symptoms of spinal and cerebral irritation, including neuralgia, nervous headache, nervous affections of the larynx, lungs, heart, stomach, bowels, etc., as also spasms, cramps, and convulsions, may often thus be dissipated ; that the intellectual and spiritual being may be elevated from the lowest state of depression, bordering on melancholy, or be delivered from the highest degree of maniacal excitement, and that the whole economy may be thus revolutionized. Patients often are amazed at their own altered sensations ; they can hardly realize their identity—feeling as if they were either renovated, or that they had been transported to a 'new world.'"

The putting to instantaneous flight an "innumerable" host of enemies, long resident in the head, chest, abdomen, and pelvis, with a metallic pessary, shows that art triumphs over nature in disease, and that at least one panacea has been inaugurated. But no panacea, hitherto proposed, ever before claimed anything more than a simple cure; the healing mediums or spiritual doctors themselves do not promise to "elevate from the lowest depression, to give intellectual and spiritual being, to revolutionize the whole economy, and to renovate and transport to a new world," so that patients "can hardly realize their identity." This supreme bliss is reserved for the pessary.

Professor Meigs, in his valuable work *On Woman and Her Diseases*, says nothing equaling the above. His *gloria in excelsis* amounts to something less, i. e., "the comfort [of a pessary] is scarcely describable." He illustrates this supreme comfort by that expressed by a man whose dislocated humerus he "reposited," whereupon the patient said: "Bless the Lord, O my soul! and all that is within me, bless and magnify his holy name!"

The beatitudes pronounced upon pessaries appear chiefly in the text books of professors, while, in the medical journals, the true indices of progress, confraternity and scientific inter-communication, a remarkable reticence prevails, concerning the supreme efficacy and the ineffable felicity of these intra-vaginal ring, oval, globular, flat, concavo-convex, watch-spring, horse-shoe and lever instruments.

Professor Simpson, and consequently his admirers, find no difficulty, but "perfect safety" in retaining a replaced womb in its normal situation by means of a wire. Yes! a wire pessary thrust into the uterus. "I soon found," says he, "that when the instrument was properly fitted and adjusted, it could be borne with perfect safety, and without pain and inconvenience." He qualifies this statement slightly, by saying, "there have been exceptions to the general rule. I have allowed the instrument sometimes to remain in the uterus for two, four, six months, or longer." (*Obstet. Mem.* i, 205.) If a man less distinguished than Dr. Simpson had said that a wire probe could be thus inserted into the uterus so as to fix (not transfix) this organ immovably, "with perfect safety, and without pain and inconvenience," the Horatian motto, *splendidè mendax*, prefixed to Gulliver's travels, would be an appropriate one to his testimony, while this pessarian practice might justify a grand jury of

physiologists and pathologists in finding an indictment for mal practice. The incubus of authority is, however, often too powerful for common sense. It is not at all necessary for one who is acquainted with the laws of the animal economy to introduce an experimental wire stem into the womb, fixing it there immovably by means of an external frame so that this organ shall be forced upward on the point of the wire with a tension sufficient to render it motionless, in order to judge of "the perfect safety of the instrument," which, it is alleged, produces neither pain nor inconvenience. Analogy and experience show that such fixity, pressure, and immobility must, in a short time, cause a perforating ulcer at the point of contact. A patient who becomes insensible or too feeble to change his position, however soft the bed and equally diffused the pressure may be, will suffer mortification at the points of contact from the mere gravitative force, without taking into view an upward, artificial, unremitting additional pressure upon the point of a wire, a billet of wood, or even a feather bed. If the tough skin accustomed to exposure and the operation of external agents, is incapable of long resisting the continuous force of gravity diffused over a large surface, the interior of the womb must be still more vulnerable when fixed on the point of a probe.

Dr. Hodge refers with considerable detail and the utmost respect, to Dr. Simpson's intra-uterine probe pessary—a complex apparatus conjoined to an external metallic frame "moulded over the mons veneris, so as to prevent motion and give a fixed character to the framework, to the vaginal stem, and of course to the intra-uterine probe or pessary." Dr. Hodge having tried this pessary, found that it caused, "in four days, leucorrhœal and bloody discharges, pain," etc.; he, therefore, protests against it for "many serious reasons—theoretical and practical"—*i. e.*, the metals used oxidate, causing uncleanliness, frictions by the framework against "the sensitive tissues of the nymphæ, clitoris, labia, urethra, etc.; the fixed character which all vaginal stems give to pessaries is a most serious objection. They never yield to pressure from above. The internal irritable tissues are pressed against them forcibly at all times when the patient is erect, and often violently in coughing, vomiting, sneezing," etc.; these, however, are mere trifles compared with those which conclude his catalogue of evils arising from the probe pessary.

In advance of this protest, one was made in this journal (March,

1856), against this impaling pessary, immediately after the appearance of Prof. Simpson's *Obstetrical Memoirs*. All that was there said in this journal against the immovably fixed wire pessary, has been confirmed, and the evils anticipated from it have occurred. Dr. Hodge himself enumerates, among others, the following: "Inflammation, ulceration, even, it may be, perforation of the uterus, and peritonitis with its dire consequences. Such results are said to have occurred." Nevertheless, not having the fear of the Grand Jury before his eyes, Professor Hodge adopts, and gives a drawing of a modified Simpson's intra-~~cit~~esine stem pessary, invented by himself (Dr. H.). This apparatus has for its base a vaginal disk in which is planted a stile or intra-uterine stem wherewith to enter and fix, "even, it may be, perforate the uterus." This he calls "a perfect success." But three pages further on, he concludes that, "whatever modifications may be suggested, by which the evils are moderated, yet the intra-uterine pessary ought to be regarded with great suspicion."

> It doth appear, you are a worthy judge;
> You know the law, your exposttion
> Hath been most sound———
>
> Merchant of Venice.

Professor Hodge finds neither difficulty nor failure in treating procedentia uteri with the pessary, at least he mentions none. Now, I do not hesitate to express my firm conviction, founded on experience, that even in young women, who have never borne a child, where the womb, including, of course, the vagina, has for years been wholly external, neither a cure nor any relief can be obtained in some cases by the pessary. For, although, by placing the patient on an inclined plane, so as to raise the inferior extremities and pelvis higher than the residue of the body, one may, possibly, by great force, reduce the womb by forcing back the intestines, so as to introduce a pessary; yet, it cannot be borne long, even in a horizontal position, owing to the pain it causes, and the fixity or packing of the abdominal organs in the pelvis, which they had acquired by long possession and consequent adaptation of all the space which had been originally allotted to the displaced uterus and vagina. The vagina, in this state of things, ceases to secrete mucus, being as

dry and firm as the skin itself. A suspensory bandage is useful, but a pessary is impracticable. The abdominal and pelvic organs, after the expulsion of the uterus, constitute an inverted pyramid, the apex of which is the external cervix uteri. Such cases are, fortunately, very rare, and do not, necessarily, impair the general health nor prevent active exercise. Professor Bedford says, "that physicians, in a practice of forty years, will rarely see two cases of procedentia of the womb." Procedentia, of course, exists in various degrees. I allude only to the utmost degree in which the intestines replace the uterus and vagina.

I will here add, in relation to the application of the intra-vaginal pessary, that for the reasons already indicated, it fails in certain herniæ, wherein it might, at first view, seem eligible upon theoretical grounds. In several instances, in both the white and black races, I have attempted, in vaginal and pudendal herniæ to prevent the descent of the intestines by the pessary, but always without benefit. Even in the horizontal position the instrument could not be borne long without severe pain, which became still more intolerable upon assuming the erect position. The superincumbent organs, long accustomed to their relative attitudes and places, seemed incapable of tolerating the intrusion of the pessary, and the return of the long absent parts.

The tendency of the viscera to migrate, or float off from their normal moorings, seems to have been little considered. In a consumptive subject, who had become excessively emaciated before death, upon post mortem examination, I found that the stomach occupied the superior strait of the pelvis. A distinguished physician, from Ohio, whom I examined, and who died a year or two afterward, had an abdominal tumor which fell downward, or laterally, according to gravity, which I diagnosticated a movable spleen.

Dr. Dewees, having described, as others have done, the manner of "pressing the instrument forwards," and "placing it in a transverse direction, to correspond with the small diameter of the inferior strait," says: "The next consideration is to ascertain whether the neck of the uterus is placed in the excavation in the instrument"— "taking care that its transverse position be correct before we withdraw the finger; the woman may now be allowed to get up;" and, he might have added, that before the doctor gets home, or at least by the time that a hard mass of fæces gets down next day, it will

probably carry down the pessary in a diagonal or tilted manner; otherwise, as in scirrhus degeneration of the vagina or rectum, the fæces would be compressed or flattened by a resisting band or edge into a ribbon-like shape, while the great mobility of the womb, the gravitation of the viscera, together with the varied contractile forces of the general muscular system during active exercise, and the variable attitudes in relation to the central line of gravity, all must tend to the same result, agreeably to the laws of animal dynamics and mechanics. From even the advocates of the pessary, and still more from the known laws of the animal economy, it is evident that a solid foreign body, like this instrument, fixed for months, or, as Denman says, "for many years," or for even a single day, in a highly sensitive organ, cannot be devoid of dangers, as already mentioned.

Dr. Dewees's circular concavo-convex pessary, concave above so as to receive the uterine neck, and convex below and perforated in the middle, has been, perhaps, more generally adopted in America than any other. Now the very mechanism of this pessary is, apparently from its conformation, adapted to bring the os tincæ as near as possible to the os externum, and, if no prolapsus exist, it is admirably calculated to produce one, provided a pessary shall descend to the inferior extremity of the vagina, as, mechanically speaking, it must soon or late. The excavation allows the neck of the womb to descend almost to the opposite or lower side of the instrument, a small fraction of an inch only intervening, while the inferior surface being convex, fits closely to the interior of the perineum and sphincter of the vaginal orifice—a mechanical arrangement which is most favorable for perpetuating prolapsus, though not permiting procedentia so long the contractility of the sphincter shall be able to resist.

A pessary how well soever it may be placed, must, therefore, from its own gravity, with that from the uterus and abdominal viscera, fall downward in the pelvic cavity until it shall find a permanent resting place for months or years. No fixed place of rest or inertia can be expected in the vaginal canal, seeing that it is already too much relaxed to prevent the falling of the uterus, so that the pessary soon or late must descend perpendicularly or by deflections along the inclined planes of the pelvis, until it finds a permanent support upon the sacrum and other bones and tissues.

If the vagina from disease cannot support the womb in a permanent manner, how much less will it be able to support an expansive pessary three and a half inches in its horizontal diameter, in a cavity large enough for a child's head to pass, especially as the instrument creates a sort of vacuum which must favor the womb's gravitation upon the superior disk of the apparatus? If, in the normal position of the os tincæ, it be four inches from the os externum, no solid support can be found short of that formed by the floor of the inferior strait or outlet, unless it be supposed that a pessary has some occult property of self-suspension different from any known in mechanics. The individual who maintained that the world was supported on the back of a tortoise, was not at all confounded when asked, what supports the tortoise? The latter, according to him, stands on nothing, being self-sustaining.

Those who base therapeutic measures on pure mechanics must abide by the laws of mechanics. A "lever pessary" must have a fulcrum. Archimedes could not move the world by a lever because he could not get a place to fix a fulcrum for that purpose. Therapeutical instruments, as fracture splints, crutches, wooden legs, tourniquets, syringes, etc., obey the laws of mechanics and hydraulics in their mode of action, as much as pillars, arches, waterworks, etc.

Prof. Meigs says: "Those females who labor under prolapsion of the uterus from the mere descent of the vagina, arising from relaxation or loss of tonicity, can be cured by the pessary" (which, according to him, is necessary to restore the tonicity of that canal!)—the globular pessary "may be worn a year or more without displacement. It is a true suspensory, as the suspensor scroti," etc.

Professor Meigs repeatedly terms "the pessary is suspensory"—"a true suspensory"—which he compares to the suspensory bandage used for the scrotum. What is the definition of the suspensory bandage? Turn to Dunglison's Medical Dictionary, which, if not perfect, is still the best: "*Suspensory Bandage* is a bandage intended to support the scrotum in cases of diseases of the testicle or of scrotal hernia. It consists of a kind of bag, *fixed above to a cincture*, and retained below by strings passing between the thighs, and *fixed to the cincture*." This definition, in every particular, is in contrast to any and every thing predicable of a pessary, in form as well as in

mechanism. The pessary is neither fixed above to, nor suspended from, a fixed cincture. The parallelism, to be carried out practically, requires that there be no fixed cincture from which a bandage may be suspended ; but, on the contrary, when a scrotal prolapsion of the bowels takes place, the cure must be effected by inserting into the scrotum a solid body, whether round or flat measuring three inches in diameter (more or less), upon which the prolapsed bowel rests securely. This body being self-suspending, is a true suspensory bandage, and by dilating the hernial sack contracts it, and by weakening, strengthens it. The magic cincture of Venus, which charmed all the gods and took away their sober senses, was not more incomprehensible in its mode of action than the self-poised, true bandage-pessary.

Of the ring gutta-percha-watch-spring pessary, he says : "Do you ask if the ring gives pain? No, not the least, provided you have adjusted a proper one." (197). The diameter of this ring is from three to four and a half inches.

Dr. Dewees and others maintain that the normal tone or contractility of the vagina, prevents the possibility of the prolapsion of the womb. Physicially, physiologically, and practically, a pessary or any other dilator must destroy tone, prevent contraction and cause dilatation. In extreme contraction of the vaginal canal, which in married women is sometimes the cause of mental and bodily suffering, and sterility, or of difficult parturition, this writer and others recommend its dilatation with sponges, lints, bougies, etc.

The usual method of extracting a stone from the bladder of the female is dilatation of the urethra by instruments, so that forceps may be introduced and the stone removed, without (and sometimes with) incision. But unfortunately, the after effects often lead to a deplorable incontinence of urine, owing to a loss of contractile power from the antecedent dilatation, and consequent injury of the urethra. A pessary from two to three and a half inches in diameter, whether round, oval, flat, or ring-like, worn for months or years in the vagina, must, if like causes produce like effects, dilate this canal and impair its contractility, not to mention the chances of more serious and disorganizing results. If, for the punishment of some henious crime, the penalty should be prolapsus uteri, would not a slow but certain mode of carrying it into execution be found by introducing into the vagina solid bodies three inches in diameter?

Professor Meigs's fundamental propositions on the cause and cure of the prolapsus uteri, are enunciated in the following words: "1. Prolapsus uteri is a disease of the vagina, not of the womb. 2. To cure prolapsus uteri, you are to seek to cure the vagina, and when you have done that, the womb will be found cured also." (199).

While one of the chief purposes of this paper is, not to question either of these propositions, which are virtually but one, but the efficacy of the pessary as the indispensable and never failing remedy, yet it must be admitted, that many high authorities maintain a doctrine altogether contrariwise to that announced in these propositions. Without wishing to reproduce an array of dissenting names, I may mention that of the late M. Lisfranc. M. Pauly, the reporter of Lisfranc's Clinical Lectures on diseases of the uterus, says that Lisfranc never employed a pessary for curative purposes. In a lecture delivered April 27, 1835, Professor Lisfranc maintained, after having examined professionally several thousand women affected with uterine displacement, that in all of these cases uterine engorgement was found; that displacement being but a symptom of an esssential malady, *engorgement*, the latter, not the symptom, should be treated, otherwise the cure will very seldom be effected. If the engorgement be overcome, the uterus is no longer displaced, but returns to its normal position: "Nous savons touché des milliers de femmes, et jamais, jusqua' à ce jour, nous n'avons trouvé de déviations sans engorgement." (526.) Whatever may be alleged against the propriety, necessity, and reputed success of this great surgeon's operations upon the uterus, their number and bloody nature have scarcely ever been paralleled.

In regard to young girls supposed to have prolapsus uteri, Prof. Meigs says: "Do not compel the young girl then to submit to the debasement of a vaginal examiuation except upon a well founded opinion of its necessity." (160). In pages 201–2, he speaks of examining "a young lady," and of another aged thirty-five, in whom he "found the os tincæ jammed against a strong hymen;" for this lady, he used the "globe pessary;" "in other samples of young unmarried ladies," he adds, "I have been compelled to adopt the use of the pessary;" he vouches emphatically in the sensational style, for the "honor, purity, and virginity" of all these young ladies. "There are many, many young virgins in whom the membrane [the hymen] never existed. Hence the hymen is no proof of virginity,

nor is its absence a sure sign of defloration." This is not a simple *credo, credis, credit;* nor a-believe-it-and-it-is; not a *credo quod habes, et habes:* but a demonstration from a long experience; "and," says he, "I have a right to say so equal to the right of any other medical man of my age." If this eminent teacher of obstetrics has been deceived in the matter of virginity, he is not the first.

In his work on the *Diseases of Females*, Dr. Dewees says in relation to the time pessaries should be worn, that, "as a general rule with *young* women, when the complaint has not been of long standing, from three to four months will be sufficient. In married women, this complaint [prolapsus uteri], is readily detected, when excessive, from the severe pain that coition is sure almost always to inflict; and this becomes oftentimes one of the most powerful inducements to apply for relief." If this remedy, when persisted in for many months, were not as bad as "the pain inflicted" in the other way, it may be safely assumed, as a general rule, that somebody deceives or is deceived, whether it be the married woman or the doctor, leaving virginity and procreation out of view altogether. The inexorable conditions of life, as micturition, defecation, muscular exertion, and gravitation, must displace, and often expel the pessary, though the doctor may not always know it.

Professor Hodge also, insists particularly upon making digital explorations of the vaginæ of the *young* in the following language: "The *diagnosis* of displacements of the uterus cannot be satisfactorily determined merely from the symptoms, however accurately studied. There are so many morbid sensations in nervous women, so much exaggeration in their description of their feelings, and withal, so many other causes of pelvic irritation, *especially perhaps in young females*, that a physical examination becomes positively necessary to verify or contradict our suspicions" (272).

The uncertainty of the diagnosis of prolapsus uteri in virgins, the pains of digital defloration, and the lawfulness of this procedure, are grave considerations, and wholly inadmissible upon the theory that the pessary is not adapted to cure but to aggravate a prolapsus, but to pave the way for one, if none exist,

Prof. Meigs asks a question, answers it, and draws a conclusion, thus: "But how is a man to know that the womb is prolapsed solely from the patient? He cannot discriminate between the many cases of the very painful sensation: that painful sensation

being the expression of distress, arising from a great variety of states of the parts in the pelvis. The only way to ascertain very clearly what is the fault, is to examine by the touch" (156); and of "*the young girl*" who will not submit to "a vaginal examination," he says, "She is a fool to refuse it" (160); which is a conclusion not proven, though suggestive of a *petitio principii*. Although he states (205), that the pessary has been "commended by the united voices of twenty-two centuries," "young girls" and many physicians may doubt this assumption without being fools.

"Do not compel the *young girl* to submit to the debasement of a vaginal examination except upon a well founded opinion of its necessity." This is like the direction given against the danger of drowning, namely, do not go into the water until you learn how to swim; for, according to the authorities, "a well founded opinion" cannot be formed without a previous "digital examination" (defloration) of these same young virgins.

It is worthy of further inquiry whether the advocates of the pessary are warranted by facts, in giving so great a universality to the absence of the hymen in virgins; whether the dogma that "the hymen is no proof of virginity, nor its absence any to the contrary," be orthodox. Admitting that it is occasionally absent from congenital abnormity, from disease, and from mal-practices, neither the courts of law, nor intelligent mothers and husbands, including nearly all anatomists, will readily admit, that the experience and traditions of all ages and nations, utterly fail to establish the general rule that an unruptured hymen is no proof of virginity and its absence no proof of defloration.

If traditional, medico-legal, anatomical, and popular testimony support the affirmative of this general rule, or even render it more probable than the contrary hypothesis; if a thorough examination of the vaginal canal and the position of the womb be necessary to the diagnosis of prolapsus, as contended for; and if, as appears to be a reasonable conclusion, no serious prolapsus is likely to occur when the hymen is unruptured, then, in any of these cases, the digital defloration of "young girls," in order to examine the vaginal canal, and introduce a pessary, is truly "a debasement," which, though neither technically nor maliciously an assault or rape, should be, nevertheless, interdicted by law. The physical injury of such a procedure must be incomparably greater than that from

rape. A virgin thus treated might, perhaps, expect soon after marriage to be forsaken, or to be returned to her parents, or to drag out a miserable existence under undeserved suspicion and censure.

The earliest physiological history of the evidences of virginity (evidently founded on the hæmorrhage incidental to the rupture of the hymen), is given by the Jewish Lawgiver (Deuteronomy xxii, 13–21): "If a man take a wife, and go in unto her, and give occasion of speech against her, and bring up an evil name upon her, and say, I took this woman, and when I came to her, *I found her not a maid:* Then shall the father of the damsel, and her mother, take and bring forth *the tokens of* the damsel's *virginity* unto the elders of the city in the gate; and the damsel's father shall say unto the elders, I gave my daughter unto this man to wife, and he hateth her, and lo, he hath given occasions of speech against her, saying, I found not thy daughter a *maid;* and yet these *are the tokens of* my daughter's *virginity*. And they shall spread the cloth before the elders of the city. And the elders of that city shall take that man and chastise him; and they shall amerce him in an hundred shekels of silver, and give them to the father of the damsel, because he hath brought an evil name upon a *virgin* of Israel; and she shall be his wife; he may not put her away all his days. But if this thing be true, and *the tokens of virginity* be not found for the damsel: Then they shall bring out the damsel to the door of her father's house, and the men of the city shall stone her with stones that she die."

In his work on Midwifery, M. Velpeau says (whether consistently with himself elsewhere, let others judge), that "the hymen always exists, provided it have not been destroyed, in young girls; as a general rule, however, the hymen is ruptured at the first sexual approach, which, in consequence of this laceration, is accompanied with more or less pain, and a slight *discharge of blood*." The rupture, with dilatation, is probably not fully achieved, in many cases, "at the first approach," nor indeed until the lapse of a period more or less prolonged; the "more or less pain" alluded to, may amount to positive suffering, and is not the less real because it is studiously concealed. It is remarkable, however, that the masters and book-builders fail to report either the difficulty or pain attendant upon the thrusting of a large solid body, three inches in diameter, through the hymen and up the vagina of a *bona fide* virgin, at the first interview.

Of the inferior orifice of the vagina, M. Pauly, in his reports of the clinical lectures of Lisfranc, on the diseases of the uterus, says: "Chez les jeunes femmes non encore déflorées, cet orifice est ordinairement fermé à sa partie postérieure par l'hymen, membrane dont l'épaisseur, généralement peu considérable, peut aller quelquefois jusqu' à six lignes."

Meckel (in the third vol. of his Anatomy), describes the hymen without even alluding to its possible absence in extraordinary cases, or anomalies of structure; so does Blumenbach; who, in his Physiology, says: "Across the opening of the vagina, the *hymen* is extended, a membrane generally circular, found, as far as I know, in the human subject alone."

Carus in (French edition, i, 439) his *Comparative Anatomy*, affirms that the hymen constitutes an important difference between the human female and the inferior mammifers, although rudimentary or incomplete traces of it are found among some species: "L'absence des nymphes et de *l'hymen* établit une différence important entre les organs copulateurs externes des femelles de mammifères et ceux de la femme. Dans quelques espèces, telles que manati, l'hyène, le daman, plusieurs singes, etc., *l'hymen* est remplacé, mais toujours d'une manière incomplete, par des rétrécissements musculeux ou par des replis cutanés."

The hymen, according to Blundell, "consists of a very delicate, vascular, and sensitive membrane, which, together with the parts contiguous, suffers a good deal when pressure is made on it; and it partially closes up the orifice of the vagina. The membrane assumes two forms, sometimes it is circular, containing a free central aperture, capable of transmitting the tip of the little finger; and in other cases it is in form like a crescent."

Medical lexicographers are still more demonstrative in their definitions; as for example:

HYMEN. A crescentic form fold of the membrane, situated at the entrance of the virgin vagina. The remains of the hymen, when ruptured, are termed *caruncule myrtiformes*. Hoblyn. *Med. Dict.*

Harris, in his Medical Dictionary, says: "The hymen partly or wholly closes the entrance of the vagina, and especially before menstruation, though it is said to be sometimes wanting."

Hooper's Medical Dictionary gives a similar definition, adding, that "the hymen is generally, if not always, found in virgins, and is very properly esteemed the test of virginity."

Hippocrates evidently alludes to the imperforate hymen, in treating of "inaptitude to conception, from not menstruating naturally; *either from the obstruction of a membrane*, or other cause discoverable by the finger"; in another book, he says: "Sometimes when conception does not occur, although menstruation is regular, it arises from *a membrane*," discoverable in like manner; again, he speaks of "a membrane" as the cause of sterility, although his anatomical allusions are neither accurate nor consistent with each other.

Prof. Leidy, in his beautiful work on Anatomy, just from the press (which has, by the way, a considerable bias towards popularization), announces, even more positively than any authority already quoted in this paper, the absolute nullity of the *hymen as any proof of virginity*. His anatomical account will be given entire, in order that the reader may judge whether his unqualified proposition expressed in the last sentence, is not a complete contradiction to the context. "The lower orifice or entrance of the vagina is constricted by a fold of the lining membrane, named the *hymen*. This *usually* appears in the adult as a crescentic process of the posterior part of the entrance into the vagina, including an anteroposteriorly elliptical orifice. The younger the individual, the more does this process approach the form of a complete circular zone, which is the *ordinary condition* of the hymen in the infant. Sometimes this zone-like form is retained to adult age; and not unfrequently it presents a puckered appearance towards the central aperture. *Commonly the hymen is obliterated by intercourse, childbirth, or other means;* and if its free edges are thin, in the process of dilatation, these may be torn. As an *abnormal condition*, the hymen is occasionally imperforate; and in *rare* instances it is so strong that impregnation may occur without its being destroyed. *Its existence is no evidence of virginity, nor its absence any to the contrary!*"

Dr. Leidy very justly finishes this description with a note of admiration (!). The italics, however, are not all due to him.

If ten or ten thousand intelligent men, who have entered into matrimony with virtuous "young girls," were questioned by a physiologist, and were willing to testify truly from personal knowledge, the evidence of the rupture of the hymen, with hæmorrhagic *tokens*, would doubtlessly be conclusive, with rare exceptions of an accidental character, which, in no wise invalidate the general rule.

It would not be necessary for these witnesses to know the special anatomy of the hymen in order to testify in the premises. The individual belief, the *lex non scripta* derived from tradition, in this behalf is almost universally in the affirmative. It is very true, that in the dead-house of charity hospitals, post mortem examination rarely detects the hymen, because the paupers sent to such institutions generally are, or have been married, or they are persons whose previous history is, at least in this respect, unknown; while others may be sufficiently known to warrant more than suspicion. Young girls are rarely sent to hospitals or find their way to the public dead-house. The hymen, however, sometimes is found in the latter, as I might testify. But it is rare for an anatomist to be called upon to make an autopsy in private residences among the moral and refined, especially when the corpse is that of a young woman. The non-hymen doctrine has probably originated in the dead-houses of hospitals where neither the evidences of the hymen nor virginity could reasonably be expected to form the general rule.

Beck, in his Medical Jurisprudence, after citing various authorities upon the hymen as the test of virginity, adds: "The weight of the testimony is in the affirmative; and the general sense of the profession is decidly opposed to considering it as a non-natural appearance."

Dr. Taylor, in his standard work on Medical Jurisprudence, says, in reference to the signs of virginity, in criminal proceedings for alleged rape, that "the hymen may be intact, but this does not prove non-intercourse, because females have been known to conceive with the hymen uninjured. Under opposite conditions, the *persistence of the membrane might fairly lead to the influence that the female was chaste*, and that there had been no intercourse; but the hymen may be destroyed by ulceration, by diseases, or be congenitally absent, when the opinion must be more or less conjectural, for *one intercourse could hardly so affect the capacity of the vagina*, as to render the fact evident through life, and there is no other datum upon which a medical opinion can be based" (506, *Am. ed.* 1856). Here is recognized, not only the normality, as well as the almost complete universality of the hymen, but a very important fact, namely, that "one intercourse could hardly so affect the *capacity of the vagina as to be evident*," etc. Now, if, as the masters say, no

one can tell, without a digital examination, whether the uterus be up or down, how can they thoroughly examine at once the vagina of a virgin never before dilated, in order to discover whether the womb be "a mere quarter inch" too low or too high?

Wharton and Stillé go much further, in their work on Medical Jurisprudence, maintaining that in rape on "*young girls,*" the vagina is never fully entered at the first attempt, and that even the hymen itself is very rarely ruptured, implying that it always exists, except under rare circumstances known to all. They say: "A full and complete connection between an adult male, and a child twelve years of age, is, *on the first attempt manifestly impossible.* In a majority of cases the penetration is but partial, and in some cases the chief injury has been inflicted by the use of the finger. The truth of this statement is shown by the *frequently uninjured condition of the hymen.* In fifty-one cases of rape upon children, many of them under fourteen, complicated with syphilis, Casper found the *hymen destroyed only seven times* in those between nine and fourteen years, and *twice slightly torn* in children of nine and ten years of age. In the remaining cases, viz.: *four-fifths of the whole number, it was entirely uninjured*" (§432). They say, again, on the charge of rape: "*Condition of the Hymen:* This comes under the consideration only, of course, where the female is represented as having been a virgin. *Indeed, the hymen is looked upon as the infallible sign of virginity*" (§446).

But returning once more upon the pessary, I will add, that the facts indirectly disclosed or directly admitted in advocating the uses of the pessary, or in warnings concerning its horribly disorganizing effects upon the vagina, womb, bladder, urethra, and rectum, should be conclusive against the instrument. For, among all the palpable evils, including countless illusory ones attributed to prolapsus uteri, none equal those which take place from the mechanical action of the pessary itself. Prolapsus does not, *per se,* bore holes through the vagina, bladder, urethra, or rectum; nor is it probable that engorgement and fungus of these organs, together with ulcerations of the uterine neck and the purulent and intolerably fœtid discharges so often admitted to be due to the pessary, can be so generally predicated of the malady itself, either when left to nature or skilfully treated medicinally. The space of this Journal will not permit an analysis of the most recent statements

of the pro-pessarians in which their own evidence "peers out" against themselves and for the validity of the above mentioned conclusion.

Let the student who has neither expressed an opinion on prolapsus uteri nor written a book upon it, reject the be-fogged theories of neurotic action as explanatory of this complaint, and taking a pencil in hand, mark all the palpable lesions enumerated in the able books of Meigs, Churchill, and Hodge, as due to prolapsus, on the one hand, and those which "peer out" from the action of the pessary on the other, and, comparing them, let him decide the question—on which side do the actual, obvious, and destructive lesions preponderate? which is safest? which causes deplorable fistulæ? dilatation? vaginitis? openings into the peritoneum? occlusion of the os uteri? fungous growths? perennial filth! putridity? fœtor?

The following admissions (here personal confessions are not to be expected), will serve as an example, showing the evils which may arise from pessaries. Volumes might be filled with cases of like import, especially if the grave could speak. But let Dr. Meigs speak: "Women sometimes have wholly forgotten them [pessaries], and allowed them to remain for a series of years, until the instruments, having become spoiled by age, or the action of the acids of the parts, have rusted, opened, and admitted into their cavities the most shocking collection of putrid humors. I have removed several such for persons who had neglected themselves for years, and thus become exposed to the danger of putrid infection from materials kept in a state of decomposition in the interior of their bodies. The Baroness de Carl was supposed to be laboring under cancer of the womb. This lady was suffering from a pessary that had been introduced thirty-five years before. It was thickly covered with calcareous incrustations that could not but irritate the parts touched by them (Colombat.) I am acquainted with a lady who suffered under uterine and vaginal hæmorrhage, with a frightful, stinking leucorrhœa. The surgeon who had adjusted the instrument ten years before, as well as the lady herself, had forgotten it. The treatment was all in vain, until, upon making his taxis, he discovered the cause of the malady. Its removal was the indication. The indication being fulfilled, the disorder disappeared, after having reduced the fine woman very near to the grave.

*There are plenty of examples in the records, of pessaries that, by neglect, have forced their way into the rectum, compelling, by long pressure, the absorbents to remove the recto-vaginal septum. * * * The bladder, vagina and rectum have been made to communicate with each other.*" (192.) Of the sponge pessary he says: "I protest against its employment, not only on account of its irremissible uncleanliness, but for its irritating nature." "These pessaries "*damage or ruin the womb or vagina*, while the accumulation of putrescible fluids about them might well serve to provoke the attack of dangerous fever." (195.)

In conclusion, it may be proper to say that this paper aims at no censure upon individuals. The well-being of society is, or ought to be, paramount with physicians, though they may differ in their modes of effecting that object. A quarter of a century ago, after having had what appeared to me a sufficient experience in the use of the pessary to enable me to judge of its value, I abandoned it altogether, for general and local treatment. With no wish to differ, for the sake of difference, from others who advocate a mechanical mode of treatment, I have ventured to mention with dissent, some of the ablest practitioners, in order to show what is the actual position or *status in quo* of the pessary. This can best be accomplished by refering to their works, which are of the highest authority. Whether this preëminence be due to superiority in science, or to fortuitous circumstances—whether these authorities rule *de jure*, or *de facto* only, is not the matter in hand. Rule they do. Followed they will be until a great revolution in medical opinions shall replace theirs. They represent what is, if not what ought to be in practice. It is the Commanders-in-Chief who set medical "squadrons on the field," and direct their movements, who have been quoted, and with sincere respect, in the full belief that they are laboring to advance the interests of humanity.

[Errata. Page 231, tenth line from the top, read *intra-uterine* instead of "*intra-citesine*"; page 225. sixteenth line read, "*three and a half inches*" instead of "*four and a half inches.*"]

PROGRESS OF MEDICINE.

ART. I.—*Repudiation of Pessaries.*

AT a stated meeting of the New York Academy of Medicine, Oct. 3, 1860, Dr. E. R. Peaslee read a paper advocating the use use of pessaries, upon which a discussion took place. Dr. A. K. Gardner joined issue with Dr. Peaslee and others, as the following statement (from the *Am. Med. Times)* will show:

In the first place, I differ from Dr. Peaslee in his estimate of the abdominal supporters of the many various kinds which are to be found in the shops, and as "uterine supporters or braces" are hawked over the comntry by itinerant doctors. I have seen many cases much relieved by wearing them. I find their use theoretically to be from their holding up the pendulous and weighty abdomen, and the superincumbent viscera which press down the uterus into the cavity of the pelvis—they practically lift off the weight and allow the uterus to retake its normal position.

Secondly. I disapprove, *in toto*, of vaginal pessaries, and so thorough is my disapproval, that I have not for some years used them in practice. The reasons for this dissent from generally received opinions are both theoretical and practical. Theoretically, they are wrong; they attempt to cure the effect of disease, and not the disease itself. Pessaries are used for prolapsus. Now what is this falling owing to? When the cause is known, we should attack the cause. Falling of the womb arises either from disease of the vaginal walls or the ligaments of the womb, which, rendered lax, are incapable of holding up the womb, or if these organs are normal in their character, there is some abnormality about the uterus, increasing its weight, and thus forcing it down, by overcoming the natural supports of the womb, into the vagina. The treatment should be directed to curing the disease upon which the prolapsus depends, and not in holding up the organ by external mechanical means.

Thirdly. Theoretically, then, the use of this instrument being unadvisable, practically we have no better reason. We have not the good results claimed for them by many, and we have numerous evils resulting from their use. They are foreign bodies and act as irritants, producing many disastrous results, leucorrhœa, abortion, hæmorrhage, and by pressing upon the rectum, constipation, and sometimes more serious ills. They are considered to be harmless instruments, and one is inserted in the vagina, and the patient is sent away thousands of miles, perhaps, as if no injury could be effected. What would be thought of a surgeon who would put a starch bandage on a leg and allow his patient to go to New Orleans? And yet into a delicate and diseased vagina he inserts a

torturing pessary, and sends the patient away as unconcernedly as if it were only an apple dumpling he had put into her stomach. Some of the members of the Academy will remember that I narrated a case some year or two ago of a young woman from whose vagina I removed a globular silver-gilt pessary, which had produced a vesico-vaginal fistula, and caused sloughing of the vagina, great disease of the rectum, and the urine flowed by several openings through the labia, and even above the pubes. The pessary itself was honeycombed with corrosions, green with verdigris, and full of the most noisome pus, while the poor, bed-ridden girl, had not for years got up from her bed, and had actually forgotten that this direful instrument had ever been applied. This is but an exaggerated case of what frequently happens. It is because they are so liable to be forgotten, that part of these dangers is to be found.

We have not only vaginal pessaries, as described by Dr. Peaslee, of the solid metal, the ring, horseshoe, etc., but we have cups of metal or boxwood, supported by a metallic wire, running out of the vagina and bent around the pubes, fastened to a cushion firmly fixed above the pubes. This is the best of all vaginal pessaries, inasmuch as it makes no pressure upon the vagina, and acts in an injurious manner only as a foreign body, distending, but not harshly pressing upon the vagina. Yet accidents happen with these. One woman was not long since admitted into Bellevue Hospital, where the os uteri had dilated under the pressure so as to allow the cup to pass entirely through the cervix into the uterus, and this had again contracted, and when observed, held the cup firmly within it. The patient was admitted, because her medical attendant could not extract the pessary by any force applied on the portion of the wire which remained in the vagina. Accidentally meeting the gentleman attending this case, he told me that the next day he intended to divide the neck and cut the cup out, as it was impossible to withdraw it. I advised him not to do so, as he would thus produce a wound hard to heal, and attended with after results of some importance, and probably by immediate inflammation of unknown extent; and advised him rather to endeavor to withdraw it by imitating the manner of its entrance, and by slow and continued traction to finally weary the uterine sphincter, and thus obtain dilatation of the os, and the easy expulsion of the pessary. This could be effected by tying to the attached wire an india-rubber strap, the other extremity being fastened to the bedpost, by which persistent contraction the cup would probally be pulled out as gradually as it was pushed in. This procedure was tried, and the result proved entirely satisfactory.

So too I lately saw a case treated by a distinguished physician of Philadelphia for partial prolapsus and retroflexion, where the cause was an undiscovered fibrous tumor coming off posteriorly, just at the junction of the neck and body of the uterus, and mechanically tilting the uterus backwards. The horseshoe pessary, used for a year, was here uncalled for, and could produceonly evil.

Next, what is produced by a pessary? The vagina, it would

seem, is supposed to be a hollow empty tube; but in truth the vaginal walls are in close coaptation—so much so, that when a woman is immersed in water, not a drop goes into the vagina. This is generally forgotten. Now, any instrument, however small, or the finger, passing into the vagina, pushes a fold before it, and with more or less force separates the parts. Now when a pessary is introduced, it is a constant violence; then its weight injuriously presses somewhere, and if it supports the uterus at all, this weight, too, falls upon some spot of the vagina which is speedily ulcerated or inflamed, and leucorrhœa is the inevitable attendant. Finally, when the pessary is removed (but pessary-wearing patients, like homœopathic ones, are never cured, and it is rarely ever removed permanently)—if it is removed, what have we then? We have a *hole formed by the pessary*, and not only has it by forming this hole destroyed the natural support of the vagina, the main support of the uterus, but we have a place all made, a vacuum into which the now unsupported uterus will necessarily fall—and even a small pessary, as stated, must make a small hole—and the last state of that woman is worse than the first.

Other objections might be here made which are as applicable to the use of the stem-pessary, and which I will mention hereafter in that connection and process.

Fourth. I pass to the consideration of the stem-pessary now advocated by Dr. Peaslee, which is the more astonishing as he is the only person that I know of who now uses them, and which I can only conceive possible by recognizing the fact that he usess a pessary of his own invention, and which is, I may say, *en passent*, unquestionably the best instrument yet made of that character.

The stem-pessary claimed to have been invented by Simpson of Edinburgh, Valleix, Roser and others of Germany, is, I think, an exploded instrument for the cure of displacements. This uterine deviation is either acute or chronic. When acute, the result of any accident, the uterine sound should be introduced into the cavity, or one finger into the vagina and another into the rectum, according to its character, and then, it easily being restored to its normal position, with a few days of rest, the patient is cured. But if it is chronic, it may have been the neglected result of accident, or the woman was married early and before the organ had attained its full dimensions, and it had been displaced by vigorous coition, and then we have had inflammation with more or less adhesions, even to a complete binding down of the organ to the parietes of the pelvis, and then this result of disease is unalterable.* If the sound raises

* A specimen beautifully illustrating this statement I recently saw in the possession of Prof. Jacobi. It was removed from the body of a lady who had died of disease of the heart, the symptoms of which were so severe as to cause the uterine affection to be disregarded during life, although the fact was known that there was some uterine displacement. Had there been no concomitant disease, she would, according to the theory advanced, have been subjected to this process of impalement: the uterus by means of the sound would have easily been restored to its normal position, and would more speedily have returned to its abnormal one; then the stem pessary would have been introduced with its concomitant offensive leucorrhœa and its attendant dangers, and when, after a lapse of time the stem-pessary being removed, it would, as I have before stated, have returned to its flexed position, and the specimen showed the reason. The uterus was not only retroflexed, but thin, firmly organized membranous bridles, three or four in number, extended between the uterus and the rectal wall, which were so elastic as to allow the uterus to be moved, and which also by the same property pulled the uterus back again so soon as the support was removed.

it a bit, it falls back again and again as oft as repeated, and the introduction and wear of the stem but makes disease where none exists, and the organ returns to its position as soon as the support is removed.

In other acute cases we have a flexion or version, the result not of accident, but of disease. The uterus has undergone a *fatty degeneration* at the point where it has given way, and although it may be forcibly lifted up, and perhaps kept up for weeks and months, so soon as the support is removed, the uterus necessarily returns to its position, because there is want of substance to maintain it, if not also a cicatricial contraction. It would be as unscientific in these cases to apply a stem-pessary as to attempt to straighten a curved spine after the bodies of the vertebra have been eaten away. It may be held up for a time, but nature will not unfortunately put in a new "underpinning" while it is thus mechanically supported,

Furthermore, interference of this sort is uncalled for. This condition of things is not disease, but the result of disease. Science can sometimes prevent and cure diseases, but what disease has destroyed, science cannot restore. Flexions of the womb are of little or no importance, save as they are or are not associated with inflammation in its various forms. This we may cure, and this is what we should treat, when these cases come to us, and by so doing we may do great good, and when this is effected, if there has been no actual disorganization, the uterus may retake its normal situation.

Again, we are not justified in using the stem-pessary in any great number of cases, even if it is conceded to be occasionally beneficial. This opinion is concurred in by Simpson, Scanzoni, Kiwisch, Aran, Nonat, in fact by all the gynecologists of the world. Its accidents are too fearful—and these accidents too frequent. Inflammation of the uterus resulting therefrom is propagated to its appendages and the peritoneum, with great pain, danger, and even death.

While I thus, in common with others, and for the above reasons, renounce the use of the stem-pessary for the treatment of flexions, I do advocate and use a pessary with a smaller stem, which does not enter into the cavity of the uterus proper, but merely into the neck, for the cure of cervical contractions, that is to say, for strictures, and for this purpose will gladly avail myself of the small instrument exhibited by Dr. Peaslee, of his invention, which is a modification of a pattern which I have used somewhat for such purposes. I never see any *cases of flexion* uncomplicated. There are many women, of whom there was never a suspicion that there was any flexion of the uterus, till it was revealed by a post-mortem. A flexion is not disease, as I have several times repeated, but the result of disease, and it often exists for many years unsuspected, and is not discovered until she goes to a physician for some complication. The possessor of this malposition is unquestionably predisposed to local disturbances, to inflammation of the uterus, etc., and the physician who examines the patient imagines that in discover-

ing a chronic flexion, that he had found the actual source of all the difficulty. No such thing; he has found only a "complication" aggravated by the abnormal position of the organ. Now what is the treatment? Simple enough. Treat the complication, which alone is curable. Cure the inflammatory or ulcerated condition by leeches, scarifications, cold injections, purgatives, etc., as may be required. So soon as the "complication" is relieved, the flexion still remaining, the patient is as well as she can be. I never see any but complicated cases.

From the same journal of January 12, 1861, the following extract is taken:

On the Use of Pessaries. *By P. Stewart, M. D., of Peekskill, N. Y.*—It cannot be denied that *fashion* has more or less influence in determining the use of remedial agents. From twenty to thirty years ago, it was the *fashion* to treat almost every case of *prolapsus uteri* with the pessary, and nearly all the schools in this country, at least, inculcated that as the true doctrine.

Being strong in the faith, I entered upon the duties of my profession, armed and equipped with these supposed indispensable utero-vaginal agents, with the teachings of Prof. Dewees fresh in my memory, and his book under my arm. If I mistake not, this faith held almost universal sway in the profession until within the last ten or twelve years; when considerable scepticism began to prevail in regard to its utility, and I had fain hoped their use was fast becoming *unfashionable*. In some discussions recently held in the Academy of Medicine, however, I learn that such is not the fact; at least in some quarters. Their use was there advocated by some whose names very justly have great influence; and the earnestness and zeal with which the claims of the pessary were set forth may well induce those who have arrived at different conclusions to reëxamine the foundations of their faith and practice.

It is not the intention of this communication to enter into an elaborate discussion of the merits or demerits of the pessary, nor indeed any discussion at all, but simply to relate the results of my own experience, in a village and country practice of more than twenty years.

My first patient was a young girl about eighteen years of age, who had worn an oval-shaped gum-elastic pessary for a period of nearly two years, by the direction of a respectable practitioner of medicine. I found, on examination of this case, great tenderness and thickening of the mucous membrane of the vagina and profuse leucorrhœa, with constant necessity for the catheter to evacuate the bladder, and habitual constipation. As the instrument had not been in a single instance removed since its first introduction, nearly two years, this operation was accomplished as soon as practicable, and a strong decoction of oak bark, sometimes as an injection, and sometimes by means of a saturated sponge, introduced into the vagina, was adopted as a substitute, and the horizontal posture was more or less enforced, but alternated with appropriate exercise. These

things ... bandage, for the support of the abdominal viscera, and appropriate tonics, constituted the treatment. The pessary had become such a horror to the patient that it was never reïntroduced. Under this treatment, persevered in for about two years, the patient completely recovered, married, and bore children.

The history and result of this case rather tended to shake my implicit faith in the pessary, which my young patient regarded as an instrument of torture ; or more properly, I may say, it led me to inquire whether the other means adopted might not in most cases be relied upon instead. However, I was so much attached to my authority, that I tried the pessary in some subsequent cases, but it did not please me. Either soreness, or leucorrhœa, or some other inconvenience, was so troublesome and annoying, that in every case I soon abandoned their use, and resorted to the method indicated in my first case, and with very satisfactory results. I do not question the utility of the pessary in the hands of others, but in mine it certainly failed of its object. But it must be confessed that my experience is more of a negative than a positive character, and in favor of another, and I think a much pleasanter method of treatment,

During my professional career numerous cases of prolapsus have fallen under my treatment, though in honesty, I am bound to say that I have seen but two cases in which the os uteri presented at the external orifice. Mine have, therefore, nearly all been incomplete cases of prolapsus, many of them, however, so painful as to prevent the patient from walking or taking any exercise for the improvement of the general health. My treatment in all these cases has been such as I have described above, in direct application of astringents by means of the syringe or the sponge, repeated several times in a day, the horizontal position, alternated with riding in an easy carriage, for the invigoration of the general health, enema to keep the bowels free, an appropriate bandage to support the superincumbent viscera, and general tonics. Of course this general outline is modified to suit the exigency of each case. The best evidence of its success is the fact, that to-day, "to the best of my knowledge and belief," not a single patient that has submitted fully to this treatment, under my direction, is suffering any inconvenience from the malady. The sponge I make use of is so small that it passes readily through the os externum, so that the nurse or the patient herself may remove and reäpply it several times in a day. The object is not so much to support the womb as to keep the astringent remedy more constantly in contact with the relaxed tissues. I am aware that Prof. Barker recommends it for the former purpose ; but as his method would require the almost daily attendance of the physician to reäpply it, the inconvenience of doing it has deterred me from adopting his method. Besides the uniformly satisfactory results for a period of twenty years, make me somewhat tenacious of the *old paths.*

ART. II.—*On Sanguineous Effusions into the Pleura*. By Professor TROUSSEAU.

M. TROUSSEAU observes that although ... may seem more properly a subject for a surgical than a medical lecture, yet as he several years since made, with M. Leblanc, several experiments relating to it (the results of which are not so widely known as could be desired), while such effusions very often give rise to pleurisy and empyema, and thus bring the case more within the domain of medicine, he thinks it best to state what he knows on the matter.

When, after a wound of the chest, blood becomes effused into the pleura, what is the treatment which should be adopted? Many surgeons advocate its removal by suction, others by puncture, and others again by incision. Supposing, however, that there is a considerable effusion (and no one would interfere for a sligth one), this must proceed from one of two sources—an artery of the thoracic parietes, or one of the pulmonary vessels. In the former case, one would inquire in vain how any of these procedures could prove of the slightest utility, it being much more likely that the compression exerted by the accumulated blood upon the wounded vessel, would aid in its obturation. When the hæmorrhage proceeds from the lung, it is easy to see that the effusion itself is one of the most important conditions of cure—the lung becoming flattened and thrust back, its vessels now energetically compressed, ceasing to discharge blood.

A curious fact in relation to this subject, has been observed during some experiments made on horses, by the author and M. Leblanc. When a vessel of large calibre is divided, great hæmorrhage takes place into the pleura, and a large quantity of blood flowing at the same time into the bronchi, the animal generally soon dies. But when vessels of a secondary order only are implicated, the lung soon becomes compressed, and the hæmorrhage ceases. If the animal be examined, all along the course of the penetrating wound there will be found a sanguineous infiltration into the pulmonary cells, changes taking place in the vicinity of the track, identical with those characterizing recent centres of pulmonary apoplexy. The track itself is filled up by a fibrinous coagulum. This clot may be met with sometimes half-an-hour after the infliction of the wound, and it is found insinuating itself into the cells and the interlobular cellular tissue by innumerable fibrinous radicles. If the autopsy of the animal be not made until from forty-eight to seventy-two hours after the wound, a curious means of occlusion is then observable. The lips of the pulmonary wound have become the seat of inflamation, which has also implicated the pleura to the extent of some centimetres—the results being a firm, plastic adhesion between the two. Thus the wound, throughout its track, becomes obliterated by means of a fibrinous clot, and the lips of the wound are covered by a fibrinous disk, which adheres to the pleura, to the lips of the solution of continuity, and to the obturating coagulum. It offers a tolerable resemblance to a large fibrinous nail, the stalk of which fills the track of the cutting instrument, while its head is flattened on the lung to which it has become intimately adherent.

It is evident that, when the surgeon empties the pleura of the blood as it is effused, he impedes the flattening of the lung, and prevents the formation of the obturating coagulum; while the violent coughing which attends opening the walls of the chest, powerfully tends to keep up the hæmorrhage. But, did not such valid objections to the removal of the effused blood exist, is the operation praticable? Numerous experiments upon the horse show that so rapidly does coagulation ensue after the effusion, that its removal would be entirely impossible. Such coagulation has been observed to take place in less than five minutes, and more rapidly than that of the blood of the same animal exposed to the air. Morever, the blood of man coagulates much more rapidly than does that of the horse. Still surgeons go on recommending and believing that they effect a removal of such effused blood. To some extent they are deceived by a fallacious appearence, which may be thus explained. The coagulation of blood takes place more slowly in a receptacle than in the pleura. The heavy red globules have thus time to sink down before the fibrine is condensed; and it results that the buffy coat, composed of serum and fibrine, is always abundant, *cæteris paribus*, in proportion to the length of time the blood has continued in the liquid state. When coagulation is very rapid, however, the clot forms into a mass without any of the buffy, fibrinous coat. This is the case with the blood in the pleura; but in a short time afterwards the serum, imprisoned within the clot, separates in part from this, and becoming mixed up with a large quantity of globules, by the churning respiratory movements, it may very well be mistaken at first for liquid blood. So that in sanguineous empyema we have two things—a coagulum usually occupying the most dependent parts, and a sanguinolent serosity, which comports itself just as does the serosity of a pleurisy. A surgeon making a puncture, therefore, may draw off a considerable quantity of serosity deeply colored by cruor, under the belief that he has removed the liquid effused blood. The quantity of this bloody fluid may also be increased in consequence of pleurisy being induced by the lesion which gave rise to the sanguineous effusion. A large addition of serum may be thus produced, and this being always in contact with the coagulum, will dissolve much of the cruor.

Not only are puncture of the chest, and incision of the intercostal spaces, useless operations in the treatment of traumatic sanguineous effusion, they may also prove mischievous, or even fatal. Mere puncture, indeed, made with appropriate instruments and due precautions, is generally an inoffensive operation, but exceptionally it gives rise to a circumscribed pleurisy which may have its inconveniences. If there is only the serosity which has separated from the clot in the pleural cavity, this puncture is not called for, as the serosity will soon be resorbed; but if the traumatic cause has determined a pleurisy with consecutive effusion, the puncture may be of utility. As to the incision made in the intercostal space, similar to that practised there when purulent collections are reproduced after mere puncture, it is fraught with danger. Its uselessness for the discharge of blood which has been coagulated has been shown; and

its danger consists in the repeated introduction of air, which is inevitable. Experiments have amply shown that the accidental introduction of air into the pleural cavity is quite harmless, but that if such introduction be renewed pleurisy and hydropneumothorax—dangerous affections under these circumstances—are inevitable. The effused blood putrefies, and the danger which may ensue may be imagined. Those surgeons who still attempt the evacuation of the discharged blood, as did Dupuytren in the case of the Duke of Berry, are influenced by three erroneous ideas. They believe that the blood remains liquid, that it acts as an irritant, and that it is only absorbed with extreme difficulty. Enough has been said upon the first point; and as to the second, M. Trousseau found in his experiments upon horses the presence of a coagulum was never accompanied by traces of pleurisy. Still it is not meant to be stated that sanguineous effusion is completely harmless. It may give rise to some irritation of the serous membrane, and especially may it predispose the individual the subject of it to an attack of pleurisy. As to the absorption of the effused blood, that takes place with an extraordinary rapidity, which would not be credible were it not positively demonstrated by experiment. When 200 grammes of blood were introduced into the pleura of a horse, no trace of it, or at most a little sanguinolent serosity, was discoverable after forty-eight hours. Of 500 grammes, a small clot, not one-fifth of the amount, was found at the end of three days, and the same result followed the introduction of 1000 grammes.

In traumatic effusions into the pleura, then, the surgeon should remain as a spectator; the most absolute rest, and a somewhat rigid diet being probably the best means at our disposal. Still, sometimes wounds of the chest, complicated with pleural hæmorrhage, are of frightful danger, and call for some explanation. Blood injected into the pleura does not comport itself as a foreign body, causing no more irritation to the serous membrane than food does to the stomach, or the urine to the bladder. But sometimes the urine does irritate the bladder; and if lesions of the bladder are often the cause of changes in the urine, how often do alterations in the latter become the cause of a vesical catarrh? So with the blood in the pleura, when the wound of the chest leads simultaneously to an effusion of air, the blood undergoes alteration, and acts as a foreign body. If in the experiments, the blood, prior to its introduction into the pleura, had remained coagulated for some hours, the clots so introduced putrefied there, and the animal rapidly succumbed to excessively severe pleurisy. This experiment is an additional proof of the danger which attends the operation of empyema for the removal of coagula. But when a violent inflammation has arisen within the pleural cavity from the simultaneous introduction of blood and air, it is then the duty of the practitioner to perform it at once, and inject iodine.—*Moniteur des Sciences Méd., Med. Times and Gazette.*

TAPPING IN EMPYEMA AND HYDROTHORAX.—During the past year the

following discussion on this subject took place in the Harvein Society.—*Med. Times and Gazette.*

Dr. Hamilton Roe mentioned a case of empyema occuring in a child of twelve years old. The lungs were perfectly resonant, and there was no sign of tubercles. The heart was displaced to the right side. A small trocar having been passed into the pleura, half-a-pint of pus was withdrawn with perfect relief to the symptoms, and the child got quite well. In tapping the chest, Dr. Roe advised the use of a small trocar, and that, to prevent the admission of air into the pleura, the canula should be withdrawn as soon as the fluid ceased to pass freely from the tube. In long-standing cases of pleuritic effusion tapping was useless, because the fluid would collect again ; but in more recent cases, provided the inflammation had subsided, tapping cured the patient at once, without having recourse to the depressing agency of mercury. The effusion which was developed during active inflammation was curable by general treatment, and tapping was not called for.

Dr. Pollock urged the early performance of this operation, as adhesions prevented the return of the lung and heart to their normal positions. He had seen the air pass freely into the pleuritic cavity in a case operated on at the Consumption Hospital, yet the patient got well. He would not advise tapping whilst inflammation was going on, nor in cases of effusion resulting from tuberculosis, but in passive effusion he thought the operation desirable. Slight effusion was cured by good diet. There was a class of cases not uncommonly met with in which there was crepitation above the water-line, suggestive of tubercle, but which, in fact, depended on the pressure produced by the effused fluid. In these cases tapping may be advantageously resorted to.

Dr. Hare had seen cases operated on which would have done well without operation. He had cured cases of pleuritic effusion by mild mercurial and other treatment, in three weeks. In a case of empyema which he had seen tapped, fourteen ounces of fetid pus were drawn off. The wound continued open, and there was a discharge for two or three years. The case occured twelve years ago, and the patient was now well and in service.

Dr. Hanfield Jones, Mr. Cleveland, Dr. Vinen, Mr. Weeden Cooke, Mr. Ballard, and Dr. Camps, joined in the discussion, by whom it was urged that tonic treatment should not be forgotten in these cases, that iodide of potassium was a useful remedy, that the empyema mentionned by Dr. H. Roe was the exact counterpart of a chronic abcess forming in any other part of the body, and that the operation of tapping was called for in double pleurisy, but might be advoided when one side only was affected.

ART. III.—*The Action of Phosphorus on the Blood:* By Prof. NASSE.

1. A GRAIN and a half of phosphorus, dissolved in an ounce and a half of rape-seed oil, was given to a cur, being mixed with the food he consumed during two days. As he only took food once a day, consequently each time he consumed three-quarters of a grain. No symptom manifested until the end of the second day; then his appetite failed, his movements became heavy, the urine sanguinolent; some loss of blood by the anus. The fifth day the dog rapidly became more feeble and died. In the cadaver, the blood was found entirely liquid, without clot. The stomach was not inflamed. Abdominal cavity contained a little extravasated blood; a considerable quantity of this was found behind the peritoneum, aside of the vertebræ, and especially under the kidneys, and along the course of the ureters to the bladder. A layer of sanguinolent mucus, one or two lines thick, was found attached to the mucous membrane of the duodenum, which was not even softened. The lower portion of the intestinal canal was bloody. The kidneys were neither inflamed nor infiltrated with blood. The mucous membrane of the bladder was of a slight reddish hue. The testicles were colored red from bloody extravasations. In the liver ten or twelve inflamed nodules, from the size of a pea to that of a bean, were observed, generally located near the surface; these nodules were gray, yellowish, and soft in the centre, surrounded by a red, firm substance.

2. A bitch of larger size took the first day one grain, the second a grain and a half, and the third a half grain of phosphorus dissolved in poppy oil; that is, three grains in three days. It was taken in the food with which it was mixed, and she ate this regularly until the evening of the third day, when a little stiffness was observed in the posterior extremities, and the hair began to bristle up; otherwise the bitch was active, drinking very much. Her strength suddenly failed on the fourth day. Seven or ten minutes after death, the blood was collected from the vessels; it weighed 545 grammes; the whole weight of the dog was 13 killogrammes. The blood did not coagulate; there were not even flakes in it; the red color brightened a little in the air, but under the microscope it composed itself in the normal way. The stomach was of a dark red, and contained a dark brown pultaceous mass (coagulated blood) which was even found in the large intestine. The appendicula vermiformis was also filled with blood. The mucous membrane of the small intestine was softened, thickened, and strongly injected, consequently inflamed. Extravasated blood was found in the cellular tissue surrounding the pancreas, partly coagulated, and consequently diffused at first. The liver was full of blood. The urine dark, but not sanguinolent. Everything else was normal. Neither brain nor spinal marrow contained any extravasated blood.

3. A large old hunting dog took daily with his food, without any repugnance, for four days, three-quarters of a grain of phoshorus dissolved in three quarters of an ounce of oil; thus taking six grains. On the fourth day he lost his appetite. The day following blood ran from his

mouth and anus. Death about noon. The body was opened in the afternoon. Everywhere the blood was liquid, viscous, and of a dark color; it did not coagulate in the air, and the *cruor* (blood-globules) did not separate from the serum. Cadaveric rigidity soon took place. The mucous membrane of the *duodenum* and the upper portion of the *jejunum* exhibited some red spots. The kidneys were injected, but the liver was not filled with blood. There was much sanguinolent mucus in the stomach.

4. A tolerably strong pregnant bitch took a grain of phosphorus in an ounce of oil; no effect was observed during twenty-four hours. The second day a grain and a half of phosphorus, dissolved in an ounce and a half of poppy oil, was slowly injected into the jugular vein; in a few minutes the animal ceased to live. The blood was coagulated in the cadaver, opened immediately. The fœtus was still alive in the uterus.

5. At five o'clock in the evening a half ounce of poppy oil, holding in solution a half grain of phosphorus, was injected into the stomach of a very large rabbit. The experiment was repeated the next morning at eleven o'clock, with twelve grammes of the same phosphorus solution. The animal remained tranquil; it took no nourishment except at noon; the movements of the heart were strongly quickened. It ceased to live during the following night. In the morning the body was found rigid. An opening in the jugular vein gave no blood. The lungs were filled with blood—many clots in the heart. The intestinal canal was not inflamed, and there were no extravasations. In the contents of the stomach, phosphoric acid was detected. This experiment was repeated on another rabbit, with the same result.

5. Five milligrammes of phosphorus, mixed with a little rye paste, were introduced into the stomach of a strong frog. There was no vomiting. Death supervened at the end of twelve hours. The blood contained in the heart was liquid. Phosphorus could be detected in the stomach and upper portion of the intestinal canal. No cadaveric rigidity.

These are the experiments of Nasse, which seem to invite attention. Heretofore, as regards the effects produced by the administration of phosphorus, we have only known the excitation of the nervous system and the genital organs, or death, with inflammation of the stomach and intestinal canal. The liquid condition of the blood is a fact quite new, and the more remarkable, because it is constant whenever the phosphorus has been absorbed and assimilated. The fourth experiment is not contradictory, for death may have been induced by the presence of the oil in the pulmonary capillaries—phosphorus could not have been assimilated

The experiments with the rabbits, whose hearts contained coagulated blood, seem not to agree with those made on dogs; but if we reflect on the readiness with which the rabbits succumbed, recollecting the presence of non-absorbed phosphorus in the stomach and intestines, we must believe that the phosphorus could not have been absorbed, which would explain the coagulation of the blood in the heart.

The liquidity of the blood appears to us a constant occurrence resulting from the action of phosphorus. This action is explained by Mandl, in two ways: either the phosphorus acts chemically on the plasticity of the blood, by combining with its elements, or it acts indirectly on it, through the medium of the nervous system. The first explanation appears refuted by the fourth experiment, in which phosphorus dissolved in oil was injected in the jugular vein of a dog. The blood, upon which the phosphorus could have directly exerted its influence, was found coagulated; from which one may conclude that the liquidity of the blood, observed after the injection of phosphorus, in the first, second and third experiments, was not the result of direct chemical action on the blood.

The coagulation of the blood cannot be attributed to the phosphorus dissolved in the oil, since Nasse has elsewhere shown that indifferent substances, as oil, injected in the blood, sometimes produce coagulation. Furthermore, in this case Nasse says that an analysis of the blood would not explain the energetic action of the phosphorus.

In the opinion of Mandl, probabilities are in favor of the second supposition. They are based upon what has been observed as regards the liquidity of the blood in certain cases of sudden death by lightning, which only acts on the nervous system. But we know that phosphorus is a very powerful excitant of the nervous system, like electricity. Furthermore, in persons struck by lightning, the fluidity of the blood is generally connected with a very considerable cadaveric rigidity; so great that sometimes the body remains upright in the position the individual occupied at the instant of the electrical discharge. A very decided cadaveric rigidity has also been observed by Nasse, in dogs who have taken phosphorus, despite the fluidity of the total mass of the blood.—*Gazette des Hôpitaux. American Medical Monthly, Jan.*, 1861. L. H. S.

ART. IV.—*Some Observations with respect to a Philosophical Arrangement of Tumors and New Growths.** By SAMUEL WILKS, M.D., Assistant Physician and Lecturer on Pathology at Guy's Hospital.

IN contemplating a subject of this extensive nature, many points worthy of consideration will present themselves, as well as objections to some of the theories herein advanced. One question which would naturally arise is as to the difference between a benignant tumor composed of simple fibrous tissue, or its representative when altered by local circumstances, and a simple inflammatory product. We are aware that most writers have insisted on the necessity of making a distinction between an inflammatory exudation and a

* This is the concluding portion of the author's paper on these topics.

tumor, the one being composed of tissues found in the healthy body, and, therefore, homologous, while the latter consists of elements foreign to the body, or heterologous. If this be true of cancer, we believe it will not hold good with respect to the simpler class of tumors. For example, we think it quite impossible to say how the new bone which is often formed around the ends of the shafts in cases of disease of the joint, differs from an exostosis, or how the cartilage which we have seen form under similar circumstances, differs from an enchondromatous tumor. As regards the skin the terms chronic inflammation or tumor may often be used indiscriminately. We have also heard the question asked whether a neuroma should be called a tumor, or merely an inflammation of the nerves.

Again, since the simpler structures as bone, famale mamma, skin, etc., can produce their like, and that exudations from them develop into the original tissues, it follows that it will be difficult to say in what respects an organ with such new tissue added to it differs from a hypertrophied one. In the complex organs the distinction is manifest; for example, the spleen may hypertrophy, that is, grow to perhaps ten times its original bulk, whereas any exudation arising from it would develop into fibre-tissue only. In the case of the bone, however, since all exudation becomes osseous, we cannot say whether its enlargement be due to inflammation, or whether it is merely the result of hypertrophy. In the same manner, whether to call a thickened integument hypertrophied, or the result of chronic inflammation, or whether, indeed, if circumscribed to style it a tumor is equally difficult. We believe, also, that the surgeon sometimes has a difficulty in distinguishing between a hypertrophy of the breast and an adenocele.

This prevalent idea of the isolation of a tumor and its own distinctness, dependent upon its peculiar constitution, is quite in accordance with the belief that it cannot change its character, all modern experience being opposed to the idea that one element of a tumor can change into another, and yet we constantly are hearing of innocent tumors becoming malignant. Although we ourselves do not believe that a tumor of one description can change into another, or that a tissue of a high formation will change into that of a lower, which we must suppose to occur, if a fibrous tumor becomes cancerous, we see no reason why a growth of the latter kind should not spring up in a long-standing innocent formation; indeed, we constantly observe a cancer in a spot where a warty, sebaceous or other form of tumor has previously existed. This merely shows that where a morbid tendency prevails in the constitution, it makes itself manifest rather in those parts where an altered nutrition is already in operation. The most striking examples we have witnessed of this have been cases of epithelioma of bone succeeding to chronic ulcer. In all such which we have hitherto seen, a sore had existed on the leg for many years, during which time we suppose ordinary inflammatory products, as lymph and pus cells, were constantly produced, but after many years, probably from some altered constitutional cause, the blastema exuded from the sore produced the elements of epithelial cancer; these continually growing at the

expense of the bone until the shaft was destroyed and amputation necessitated. Such an example merely shows how one kind of morbid action is exchanged for another. Another explanation of a supposed innocent tumor becoming malignant, we have already given in the case of the adenocele which returned in the lungs; the facts being that there were a mixture of elements, and that from the malignant part prevailing, this portion returned after the removal of the primary tumor. This also is the interpretation of the malignancy of many bony, myeloid tumors, etc., that the growths are in fact cancerous, but contain a portion of these simpler elements.

Besides various considerations of this kind, we cannot hide from ourselves the possibility that various objections might be brought against some of the theories herein propounded. It may be well, therefore, to consider what some of the most important of these may be. In the first place, it has been said that all those elements of a new growth which resemble the parts from which they spring, may be regarded as having been produced under a healthy local influence, and after separating these, we find that all other tumors are composed of cell or fibre; also as regards these latter, we have said that the greater the proportion of the first mentioned element, the more vicious or morbid is the influence in operation for its production, whilst the greater that of the latter, the more healthy the influence, and that the difference in this respect is due to a constitutional cause. Now, although we believe this to be in the main correct, yet we are quite open to the objection that these elements may vary in kind from local causes alone, for since we have said that like structures have like products, why should not these simpler elements be produced under similar circumstances, and that each, whether cell or fibre, be determined by the peculiar constitution of the part in which it grows? This question involves in it most fundamental matters connected with the subject of cancer; for example, the malignant disease occurring in the female breast is scirrhous or fibrous cancer; whereas, that occurring in the male testis is encephaloid, a difference so constant that nothing but the peculiarity of its seat will account for it.

Now, should it ever be shown that the latter is more prone to return, and at a more rapid rate than the former it would follow that the more malignant disease was due to a local cause, or to an accidental circumstance. Carrying the principle still further it might be argued that the tendency of the new growth to assume the character of the part whence it springs might be sufficient to determine a tumor being altogether fibrous in one instance, or cellular in another, and, consequently, that here would be an end to the controversy, as to the variety of constitutional causes in operation. For the fact of the former being propagated, and the latter not, would be due merely to the seeds of a disease represented by cells being easier of propagation than a more developed tissue. To take another example, it would be somewhat difficult to disprove the statement that fibrous tumours of the body of the uterus and cancer of its neck were due to exactly the same influence, and that the difference lay merely in

the peculiarity of the parts affected, and to this alone was to be attributed the different structure of the new growth, and subsequent phases in its progress, particularly if the fact were urged that uterine cancer is generally a local affection, and that fibrous tumors are not uncommonly found associated with cancer in other parts of the body.

Such a mode of reasoning would make the difference of these growths dependent on a local cause, and the fact of the malignancy of one rather than the other due to the fact of the greater facility of propagation of one than the other. That the propagation, through the body of particular elements is a proof of their malignancy (understanding by the word some peculiarities foreign to the healthy body) is contradicted by the fact of bone being so propagated, since we know the cause of its existence in the new growth, is altogether due to a local influence; for instance, osteoid cancer and osteosarcoma diseases affecting the whole body have their origin in some parts of the skeleton; consequently it follows to demonstration that peculiarities due to a local cause alone may spread through the system, and that such do not therefore show a constitutional or malignant cause in operation. The explanation may lie, as before seen, in the character of the elements which accompany the bone, or from which it is formed. Another still more striking example of a simple innocent tumor becoming propagated, is seen in a case of myeloid disease which lately came before our notice. We have already said that, in our experience, this affection was innocent, judging from numerous cases where patients were known to have been long alive after the removal of the primary growth; this also is the experience of other observers. What then shall we say of a case, where, after removal of such a tumor, the disease returned in the part, and subsequently in the lungs, causing the patient's death? It does appear from its contemplation, that some elements of the disease, although a purely local one (and when wholly removed, eradicated from the system) did in this particular case become taken up, carried to distant parts, and there grow. It may be said in answer to this view of the case, that the fact of the disease spreading proved its constitutional origin and malignancy. To this mode of reasoning we object, and to oppose it we have instanced this very case. We have too long assumed the malignancy or innocency of a tumor, because of its return and rapid propagation, and that it is very little more than an assumption is shown in the difficulty which the upholders of such a doctrine have in opposing the statement (when hypothetically made) that cancer remains a local disease for an indefinite period, and the subject of it in good health, if from mere accidental causes surrounding it the seeds are not transmitted.

That the mere spread of a disease through the system is not sufficient for us to assume the existence of a deep constitutional malignant taint, but that it may arise from a local cause, we see in the case of pyæmia. In this affection a healthy man receives an injury, a local suppuration occurs, some of the morbid elements become propagated through the system, and he dies with similar collections of pus in numerous internal organs of the body. Now, in what does this

differ from the case of encephaloid cancer where we suppose a pre-existing constitutional taint? The microscope would show little more difference in the two cases than that which exists between an oval nucleus and a round one. Different as we have been in the habit of considering these two diseases, we lately met with an instance where it was difficult to say to which of them the case belonged, whether it was one of pyæmia or one due to a propagation of new growth; the case was that of a woman who had a large swelling on the leg, and subsequently died with similar disease in brain, lungs, liver, etc. These growths were composed of a soft, almost fluid material, consisting of nucleated tissue, and thus the disease might be regarded as a malignant one, or allied to pyæmia, only instead of simple purulent elements being propagated through the system, a tissue somewhat more highly developed took their place.

On the other hand, we may see tumors or adventitious deposits scattered through the system, owing to a deep constitutional cause, and yet these deposits be of the kind which we call innocent. For example, in syphilis albumino-fibroid deposits may be found in various parts of the body. Such a case, however, affords an objection more apparent than real to the rule laid down, for though the cause may be constitutional, yet the adventitious products are not at all of that kind which propagate like cancer cells, but consist of a tissue which is eradicable by certain drugs.

These and such like objections should all be considered in treating a subject of this kind, since they, to a certain extent, militate against the complete adoption of the views advanced at the beginning of the paper. In spite of these, however, all the striking facts bear in the direction of the theory there given, and appear to be only explicable on such grounds; for example, the same part of the body being liable either to the growth of an innocent tumor or to one of the most malignant type.

There are certain other affections which, although not entered upon fully in the present paper, yet ought to be considered in connection with the subject—for example, tubercle. There can be no doubt that the production of this material is due to a constitutional cause, although probably modified by local influences. This point is well worthy of consideration, although we have never known it the subject of investigation. We mean how the character of the tubercle may be modified by local circumstances, as seen in its deposition either as the miliary or yellow variety. The one is hard, and contains some fibrillated tissue, while the other is soft and corpuscular; it has often been observed how the one is found in the membranous organs, the other in the softer viscera and lymphatic glands; and, although both are found in the lungs, the former and harder variety appears to grow in the cell wall, while the other is a more acute deposit within the cell itself. It may be a question, therefore, how far the one being developed in a fibrous or membranous tissue, and the other in a cellular one, may be sufficient to cause a modification in their character. Observation proves, we believe, beyond doubt, that these local causes do exert a certain amount of influence in this respect, or the difference could not be explained.

Another affection closely allied to this is the lardaceous, where all the viscera becomes infiltrated with a peculiar albuminous matter, resembling, in outward appearance, wax. In this we may occasionally find the existence of corpuscles, and sometimes fibres. This disease is the result of a deep seated cachexia, and especially met with in those who have been long the subject of syphilis or scrofula; indeed, it may be found in connection with the syphilitic fibroid deposits on the one hand, or in connection with tubercle on the other. The association of these adventitious material is a fact of peculiar interest, and naturally suggests the idea that they may be but modifications of one another; that the lardaceous matter may indeed be the plasma or crude material from which the tubercle is formed, perhaps be almost identical with the gelatinous infiltration sometimes met with in phthisical lungs. Also, that another slight modification of it may cause a fibrillation of the cells, and productive of the lardaceo-fibroid deposit found in syphilitic subjects. It may, indeed, be, at some future time, shown how, in the extremest cachexia, the nutrition of the tissues is so altered that this albuminous material is exuded from the blood-vessels, and how, in another form of affection, styled scrofulous, some nuclei or cells may be produced, but these, becoming abortive or shriveled, tubercle is produced. Also, how, in another form of cachexia, the syphilitic, the material or cells produced in it may fibrillate, and fibroid deposit be formed. Some relationship of this kind appears to exist, from the constant association of these products, although, of course, each may exist in its simplicity, for we would not maintain that tubercle is always formed from such crude material, since in most instances we believe the cells grow as such, whether, however, the more chronic forms found in the lungs from modified epithelium, we cannot positively say, but the more acute from altered inflammatory products, we have no doubt. Just as we deny cancer being a specific form of cell, so also do we doubt that tubercle contains anything characteristic, but that just as the lardaceous matter is a modified healthy plasma, so is the tubercle an altered lymph cell. It will be seen how, with such views as these, and regarding the exudation of an homogeneous material as one morbid condition, and an abortive cell formation as another, and a fibrillated deposit as a third, we can go a step further and regard the production of perfect cells, which shall rapidly propagate, as nothing else than cancer.

We may remark, finally, that this paper may appear to many of our readers vague and inconclusive. We wish it were otherwise, and that we were enabled to definitely settle the conflicting opinions which have hitherto prevailed amongst the best men in our profession concerning this important subject. We could scarcely hope to do this, and therefore our attempt has been only to place the subject before others as it frames itself to our own minds. With this object, we have laid before our readers evidence which is, to a certain extent, antagonistic to the views maintained. We have done so, in order to show that we have endeavored to look all round the matter, in order to appreciate the difficulties in accepting it. In spite, however, of such objections, we believe that, by contemplating the

subject from the point of view indicated in the table, the facts connected with it will be seen in a clear light, and will be in a better position to be treated by those who hold contrary opinions. At all events, we trust we have said enough to show on how unstable a basis many of the received opinions, regarding cancer, are at present founded.—*London Medical Review.*

ART. V.—*Remarks on the Birth-rate as affecting the Mortality of Children, under Five Years of Age:* By WILLIAM J. MARSHALL, M.D. and L.R.C.S., Edin.

THE Registrar-General has recently directed attention to a very complicated problem—the mortality among children in the various towns of Scotland. The comparison of the rates of mortality in the different towns can only be safe, or lead to sound conclusions, when all the conditions of this mortality in each town have been thoroughly ascertained, and can be duly weighed; but this, I am inclined to think, has not yet been done. The Report for 1858 says on this subject: "48.2 per cent. of the deaths in the towns were of persons under five years of age. This is a very high proportion, and shows that moral and physical agencies exist in these towns highly prejudicial to infantile life. That this frightful mortality under five years of age might be greatly lessened there can be no doubt, as shown by the simple fact that its proportion differs in the different towns." Here it is assumed that a difference in the proportion of mortality in different towns is sufficient proof that it might be greatly lessened. Such a mode of arguing is not legitimate, unless it were true that a difference in mortality could be owing to *preventible* causes alone. Whereas, accurate investigation alone can determine whether the difference is owing to *preventible* or *non-preventible* causes.

In a former paper I gave some illustrations of the fact that the proportions of deaths under five to the total deaths is not necessarily a sure criterion of the real mortality among children, as long as the proportion of births to total deaths in each town varies so much. In the last Annual Report it is admitted that "the more strictly correct mode of estimating the healthiness of a locality" is to compare the number of children dying with the number of children living at the same age in each year, and a table with this ratio is given. I would submit that, to prevent error, such a table should be given every year, instead of one showing the proportion of deaths under five to the total deaths. The principle, that the rate of increase affects the proportion of deaths under five to the total deaths, has been thus asserted in the article on population in the *Encyclopædia Britannica*, which I consulted after writing the former remarks:

"When in a mortuary register we compare the deaths under puberty with those above, *if the population be increasing*, we evidently compare the deaths belonging to a much greater number of births than those which have furnished the deaths above the age of puberty; and, consequently, these proportions must represent the country as *much less healthy than it really is*."

Notwithstanding all that has been said in the Annual Reports and elsewhere, it seems probable that a high birth-rate not only must affect the proportion of infantile deaths to total deaths, but also has some influence on the real rate of mortality among children; and that, in some cases, it may be reckoned among the agencies prejudicial to infantile life.

Great mortality among children may depend upon these, among other causes—congenital weakness, deficient nourishment and clothing, and external noxious agencies. In the zeal to remove external agencies, the former influences are apt to be under-estimated, whereas they are just as important. With a strong constitution and abundance of good food, it is marvellous how much that is otherwise injurious the human frame can resist. The *injudicious* advocacy of sanitary reform, in as far as regards external agencies, will do more harm than good. Expectations will be raised which cannot be realized, and disappointment will be followed by utter indifference, if not by scepticism and determined opposition.

Congenital weakness and tendency to disease must be reckoned a separate element prejudicial to infantile life, until it has been proved that any difference in congenital vigor depends only upon moral and physical agencies affecting the parents. There may be a difference in the mortality of infants born in the same external conditions, not explicable by any apparent difference in the parents, and only attributable to a difference in congenital vigor. All the conditions, therefore, affecting the strength of infants at birth in each town must, as far as possible, be ascertained, before safe comparisons can be made between the different towns as regards infantile mortality.

Moreover, there may be commercial causes affecting the abundance of food in the various towns independently of the moral conduct or physical circumstances of individuals; and these must likewise be taken into account and investigated.

It seems probable that a high birth-rate may imply some conditions prejudicial to the strength of children, and the supply of food and clothing, and enhancing the power of other noxious agencies, and consequently may increase the mortality among children. It may be one cause among many which ought to be taken into account in calculating the mortality among children in towns where the population is increasing rapidly. In the Report for 1859 it is said: "That the high death-rate brings into operation a wise *provision of nature* for preventing the extinction of our race; and that the births are increased to make up for the losses caused by the abnormally high death-rate; and that the greater the mortality which prevails among infants, the sooner does the mother bring into the world another being, speedily to fall a victim to those adverse agencies

which cut off her former child." And it has been stated as a law, that "when the species is endangered by want of sufficient sustenance, or by other enfeebling causes, the tendency to increase is immediately augmented."—*(Blackwood's Magazine*, March, 1837.) It is not easy to see the causal connection between the death of *one* child, or the dangers by which *it* is surrounded, and the birth of *another;* or how the losses could be made up if the latter is "speedily to fall a victim to the adverse agencies" which cut off the former; or what need there is of such an increase in towns, where many seem born only to die of want or disease, when there are so many born in agricultural districts who can and do come into towns to fill up the gaps. Observers disposed to take a more melancholy view of nature, have maintained, and with as much reason, that a high death-rate is a wise provision of nature to prevent the population from increasing too fast. There seems in some places to be as much risk of redundancy and overcrowding as of extinction. This mode of arguing, however, is an instance of that "excursion of final causes into the limits of physical causes, which hath made a great devastation in that province."—*(Bacon.)* At all times we should be cautious in our use of final causes, lest, in the progress of science, our notions of the dependence of phenomena be proved to be mistaken. In no case is the assertion of a purpose of Providence legitimate until we have actually discovered some connection between the events observed; and much less should an assumed "provision of nature" be our only proof of such a connection. For instance, what good purpose is served by a high birth-rate, if the new beings speedily fall victims to the adverse agencies which cut off former children? or what advantage is it if, while a population increases in numbers, it declines in strength? Neither, on the other hand, is there any good purpose evident in a high death-rate, for it is not found in all cases to keep down the numbers of the population. A high birth-rate, in fact, in many cases affects the character of a population, making it, though more numerous, weaker, and shorter-lived; and it is a question whether this weakness is not as likely to increase the number of deaths as the high mortality among infants is to increase the number of births.

It is true that there is a connection between the *adult* mortality of a place and the number of births, viz., that of a greater demand for labor, and greater consequent encouragement to marriage; but the present question is, What is the connection between the *infantile* mortality and subsequent births? Such a connection is implied in the popular notion, that conception will not take place so long as the mother continues to nurse. If this were true, it would follow that the sooner nursing was interrupted by the death of one child at the breast, the sooner would conception and another birth ensue. But this notion seems to require more solid grounds to rest on than have yet been discovered. It is notorious that the poor, as a general rule, nurse their children longer than mothers in the better ranks; and yet it is not the case that they have smaller families, or children at longer intervals. This apparently proves that the duration of suckling has little connection with the number of conceptions.

If protracted nursing, however, does not delay conception, it certainly not only has an influence on the vigor of the mother, and so may affect the strength of subsequent children, but it also, in the opinion of some, injures the child at the breast. Moreover, conception, pregnancy, and delivery, occuring frequently and at short intervals, are likely to deteriorate the mother's health, from not giving the constitution sufficient time to rally. Further, if a family increases faster than the amount of accommodation and the means of subsistance, all other noxious agencies will act more powerfully upon the redundant population, from overcrowding and poverty It may be true on the whole, and over a long series of years, that the population is regulated by the demand for labor; yet it is no less certain that, in particular localities and in certain seasons, the supply of labor has a tendency to outstrip the demand, the labor market becomes overstocked, and wages fall. In such circumstances, an increase of population will prove a burden instead of a blessing. Besides, in all cases, children under five years of age can only be consumers, not producers of sustenance, and are likely to press upon the amount of room and food. Laborers and operatives very rarely have any provision when they marry, and seldom accumulate any savings afterwards; and as their income seldom increases after marriage, till some members of their family are able to work, in many cases no larger dwelling and no greater anount of food is provided for a family consisting of five or six members than for one consisting of only two. It is obvious to remark how injurious this must be upon children under five years of age.

If, therefore, protracted suckling, a rapid succession and a large number of children, from the same mother, and great pressure upon the amount of room and food, are often associated with and implied in a high birth-rate, it is evident that in such cases its influence upon the rate of infantile mortality will not be small. It is worthy of observation that the birth-rates and death-rates among children are high in the busy seaports and manufacturing towns of Scotland, crowded with operatives and inhabitants of the most degraded and improvident classes. Among such populations, it is true that moral and physical agencies prevail, prejudicial to infantile life; but may we not suppose that a high birth-rate also, implying a large number of early, imprudent, and prolific marriages, will affect the mortality among children, as it supplies a larger proportion of children less able to resist the other noxious agencies to which they are exposed, and pressing rapidly and severely upon the means of subsistance and accommodation?

It is this very tendency to redundancy in a degraded population which renders a legal provision for the poor so necessary to prevent destitution and degradation, and to encourage the hope of improving or maintaining their condition in life, "which is a better security for prudence and good conduct, and a better check on early and improvident marriages, than the mere fear of want."—*(Allison.)* It is because a redundant population in manufacturing towns of old countries aggravates all the moral and physical evils to which such a population is exposed, that emigration is so important. This is the reason

why the poorest classes of the community should get aid to remove to new settlements, where fewer temptations will assail, and better fortunes may be acquired.

It may be true that great mortality is followed by an increase of marriages, and of consequent births; but it is also true that early, improvident, and prolific marriages, produce a weak and redundant population; and that, in so far as a high birth-rate implies such circumstances, it will be one element among many prejudicial to infantile life. From the complicated action and reaction of agencies in society, there is no paradox in maintaining that a high birth-rate is both a *consequence* and a *cause* of a high death-rate. Of course, it must remain for observation to discover how many of these conditions of danger are included in the high birth-rate in any town; but these suggestions seem sufficient reasons for suspending the judgment, and not hastily concluding that a high birth-rate cannot, in any case, be one out of many causes of a high rate of mortality among children.—*Edinburgh Med. Jour.*

GREENOCK, 23*d October*, 1860.

ART. VI.—*Source of Danger in Using Chloroform; Death following the Use of Chloroform in Labor.*

i. *The Chief Source of the Danger Resulting from the Inhalation of Chloroform.*

IN a recent communication made to the Academy of Sciences at Paris, M. Jeaucourt stated that his observations and researches had convinced him that upon every occasion when the patients breathe freely during the inhalation of the chloroform, anæsthesia is produced readily and quickly, and that he was also of opinion that if nothing offers any obstacle to the regular and *continued* play of the respiratory current, not only does the inhalation not present any danger, but, in addition, it is exempt from what have been called the physiological effects of the chloroform, or, at least, these are less marked.

But the respiration may easily become changed during the inhalation, especially at its commencement, and it is in this change that the danger resides; if any obstacle interferes with the continuity of the respiratory action, the anæsthesia ceases to be really producible, and the effort to produce it gives rise to various accidents, more or less to be feared. The interruption to free respiration may arise from different causes, depending either upon the operator, as in cases where he administers the chloroform either too rapidly or in too great abundance, or upon the patient himself, when he voluntarily ceases to respire, and even resists the injunctions which are made to him upon that head; the immediate result is the modification of the quantity and quality of the air contained in the lungs; the secondary

result is variable, and may occasion the production of a transient, slight sense of suffocation, or of fatal asphyxia. The explanation of the latter phenomena may be found in the double source from which they arise, viz., the sudden deprivation of respirable air, and the poisoning resulting from the gaseous mixture retained in the lungs. M. Jeaucourt considers that we may thus account for the occasional fatal effects which have attended the employment of anæsthetics, and which have been doubtfully referred to syncope; the default of innervation of the heart appearing to result from the complex character of the asphyxia itself.

An attentive examination into the causes of these accidents furnishes an indication of the means which it is necessary to adopt for the purpose of obviating them, and the rules upon this point may be comprised within the following general formula: In order to avoid all chances of accident in the inducement of anæsthesia, it is necessary to watch carefully that there exists an unfailling renovation of the air contained in the lungs until the invasion of sleep. If the respiration is carried on up to this time in an equable and continuous manner, it will not be interrupted afresh.

Elsewhere, M. Jeaucourt, who recommends the employment of chloroform in most cases of labor, and who considers that it diminishes the frequency of puerperal complications, states that the anæsthesia, under these circumstances, ought not to be pushed further than the abolition of sensibility, and the relaxation of the upper extremities. The labor loses its ordinary gravity, and is accomplished in a normal manner, without any risk even of suspending or abating it, if we take the precaution of commencing the administration of the vapor at the moment when the os uteri is completely dilated.—*London Med. Rev., Dec.* 1860.

ii. *On the Nature of Death from Chloroform:* By Dr. CHAS. KIDD.

There have been about 125 deaths from anæsthetics in Europe up to the present date. A very large number, the only list of any such cases on the Continent, is one by M. Scoutetten, an army surgeon, who gives 40 deaths, but unfortunately does not specify the nature of the operation for which the anæsthetic was administered. Dr. Snow gives 50 deaths, and I have since myself made out 35 deaths in addition. All agree as to the vast preponderance, however, of deaths in male patients rather than in females; it also appears that while there have been in reality no deaths as the result of large amputations, resections, ovariotomy, etc., fully two-thirds of the deaths have been from operations on sphincters or tendinous sheaths, strabismus, tooth-drawing, etc.

Causing death.	*Snow.*	*Kidd.*
17 Deaths during operations on fistulæ, hemorrhoids, applications of caustics, etc.	13	4
14 Deaths in removal of toe-nail, dead finger, and such operations on phalanges	9	5
10 Dentists' cases of tooth-drawing, etc	6	4
11 Deaths from removal of tumors	7	4
Resections, large amputations, midwifery, ovariotomy, ligatures of large arteries, etc	...	...

9	Deaths in minor amputations, but 6 occurring before the operation commenced	4	5
6	Deaths in strabismus, operations on eye, etc., cysts of eyelids, etc	2	4
9	Deaths in operations on testis, sounding, etc., (2 included doubtful in 218 lithotomy cases)	6	3
5	Deaths from reduction of dislocations	2	3
1	Death from strangulated hernia	1	...
3	Deaths from delirium tremens	...	3
		50	35
	Scoutetten's cases (not specified)	40	

This table explains itself; the general result is very curious, and, I think, very convincing, that in the hundreds of thousands of operations where chloroform has now been used, it has proved in the vast majority to be perfectly safe, and that it is safer in large than in small operations. Why it is so, I may not now stop to inquire. Again, of the sixteen deaths under chloroform, where I was myself able to trace out the probable cause of the fatal issue, I found three where some remote disease of the heart might be suspected; but in thirteen there had been probable, and in some, very serious derangement of the nervous system—viz., three deaths from delirium tremens and chloroform combined, two where chorea and meningitis were present, two from cysts in the brain, and four from other lesions of cerebral tissue. It seems too evident, I think, that if syncope or "fit" should occur in any such case, resuscitation is rendered difficult, as we have an imperfect brain and spinal apparatus to work with. Disease of the heart is a very rare cause of death from chloroform; the facts on which this hypothesis was built up are now shown to be all erroneous.

There is a sad want of uniformity in the mode of making post mortem examinations in our London hospitals. In two necropsies in the Borough hospitals, and one at the Royal Ophthalmic, Moorfields, I was present, and anxious to see the state of the heart and pericardium before the latter was opened; in two I was successful, but in the third the head was opened first, and a large drainage of fluid blood took place from the jugular veins, sinuses, etc., which left the heart flaccid. Even in one of the other cases, where in good routine fashion the hospital porter opened roughly all the three cavities at once, and left them all open for an hour, awaiting some "crowner's quest" or magisterial inquisition, it was not less difficult to come to any steady or useful decision on the case. I observed, however, while waiting this hour, that the right cavities of the heart were very much distended with fluid blood; the pericardial contents and pericardium bulging very prominently, "filled to bursting almost," till the examination of the lungs commenced, when the section of the large vessels of course emptied the heart; the heart being then examined, was marked "perfectly healthy, and empty." It seems to be not a bad mode of proceeding to open all the cavities together, but our great want in the hospitals is some uniformity; and in a very painful degree some uniformity in the examination of dead bodies after accidents from chloroform. Some other remarkable facts have been discovered during the course of these investigations, as to death from

chloroform, which it is of interest to note. First, that a very large number of the twenty-five deaths from the use of anæsthetics after operations have been deaths from the effects of the slow administration of ether, or ether and chloroform mixed, but not from pure chloroform. I published nineteen deaths from ether two years ago, yet it is still suggested in America that there have been no deaths from this agent. Scoutetten gives five; and since then there have been at least four or five more from ether or amylene; so that, on the whole,

	Snow.	*Scoutetten.*	*Kidd.*	*Total*
In 121 deaths, the relative dangers of the chloroform "stages" were:				
Deaths when chloroform was given for intended operations, or immediately before operations	18	22	14	54
Deaths during the progress of operations	22	6	14	42
Deaths after operation, i. e., from chloroform immediately after, or the result of chloroform and the operation combined a short time after the operation had been completed	6	12	7	25
In 133 deaths, the relative frequency of deaths as to sex, was:				
Males	30	32	28	90
Females	20	16	7	43

there appears at present, about a hundred deaths from pure chloroform, and one-fourth (or twenty-five) from ether or amylene! Next, as to the stage or degree of the anæsthetic process, which appears most dangerous, this (contradictory though it seems) is decidedly the stage of excitement, or the early state of violent plunging, before the patient is rendered anæsthetic and fit for the operation he is about to undergo. This escaped the knowledge of Dr. Snow.

I think it will be found that the mode of death by "fits," trachelismus, syncope, etc., observed before operations, occurring suddenly, and consequently the means to be adopted for resuscitating patients in such accidents, differ very widely from the mode of death observed and means to be adopted for resuscitation of patients who show a tendency to sink after operations (by asphyxia?) We have hitherto confounded the two, and have been looking for some one great secret cause of these most melancholy occurrences. One set of accidents seem to occur suddenly from chloroform; the other slowly, but from ether. It appears also very instructive and consoling, that in all the large tedious operations—such as resections, large amputations, midwifery, ovariotomy, ligatures of large arteries, etc.—such is the "law of tolerance" of chloroform, that in these formidable operations it is almost free from danger; whereas, in trivial operations (where, fortunately, we might use Dr. Arnott's congelation plan), the chances of accident are very serious indeed.—*Med. Times and Gaz.*

iii. *Death, rapidly following after a nearly Normal Labor and employment of Chloroform.*

Professor Faye, of Christiania, relates the following case: R. H., an unmarried house-servant, 35 years old, pregnant for the first time,

and being about her full period, came into the hospital at nine in the evening, of the 19th May, 1859, the waters having newly escaped. She stated that she had been of delicate health in her childhood, without being able to give any particulars. Had menstruated copiously since her sixteenth year, and five years ago had a cursory attack of hæmatemesis; but had generally the look of a robust habit, although a degree of puffiness of the countenance and swelling of the legs gave indications of a not wholly sound state of the blood. The labor proceeded slowly, with transient pains, yet accompanied with rather acute suffering, from the afternoon, when the os uteri had scarcely begun to expand, till the morning, when it had attained the size of a half-dollar. A few hours later, the os was dilated, and the pains were more powerful and with longer intervals, the suffering accompanying them being very severe. The pulse was slow. She had chloroform in small quantities, to moderate the intensity of the pain without producing stupefaction. At two o'clock the head entered the superior opening, and passed somewhat rapidly into the hollow, with the smaller fontanel forwards and to the right. In the narrower portion of the hollow, the head remained stationary for several hours, although the uterine contractions were strong and painful. The forceps having been applied, the head of a living infant, a female, weighing 8 pounds 2 ounces, was delivered without difficulty; the operator, one of the assistants at the hospital, having, under my superintendence, allowed ample time for the intercalation of the bones of the head. After the application of the forceps, and during the extraction, chloroform was employed, producing anæsthesia of very short duration. From this she quickly regained full consciousness, without, as usual, lying for some time in a state of sopor. The pulse was 64. She slept for an hour. Later, she became more drowsy, with the face flushed; and at midnight, when visited by the assistant, the pulse was 92. She was easy, and quite conscious. At 4 A. M., she complained of a slight rigor, with headache and heat. There was no pain in the abdomen, which was soft, and without increased sensitiveness. Pulse 120. Afterwards she lay constantly as in deep sleep; but she could easily be aroused when directly addressed, and complained then only of weakness. At half-past seven the respiration became suddenly difficult and sonorous, the countenance livid, the second sound of the heart alone audible, and the pupils contracted. There was no convulsion, and no pain in the abdomen. The urine showed scanty traces of albumen. She was bled to 8 ounces, but the blood was only obtained slowly. Cold applications to the head, leeches behind the ears, warm poultices and sinapisms to the legs, sinapisms over the cardia, with enemata, first purgative, and then containing vinegar, were now resorted to. At an earlier period she had quinine and bromine, according to a formula recently employed in the institution. Towards the forenoon she was still sensible when spoken to. She mentioned her home, and the father of her child, with the name she desired for it, etc.; remaining otherwise in a slumber, with short, but not labored respiration. There was some *sibilus* heard posteriorly on auscultation. For some hours the pulse at the wrist was imperceptible, but the second

sound of the heart remained clear and distinct, till she expired quietly at a quarter past twelve.

"The diagnosis in this case, where death had rapidly supervened within seventeen hours from the period of delivery, leaned chiefly towards pulmonary apoplexy, or perhaps uræmia; the state of the functions of the brain not permitting the notion of any marked abnormity in the head.

"The body was opened twenty-two hours after death.

"*Cavitas cranii:* Nothing abnormal; no congestion. *Cavitas pectoris:* The lungs were firmly adherent in many places, through old pleuritic exudations. No coagula in the pulmonary arteries; nor, with the exception of slight congestion and œdema, anything morbid either in the substance or on the surface of the lungs. A few bronchial glands were greatly enlarged, and filled with caseous tubercular matter. The heart flaccid, its valves sound, and only a few small coagula in the right ventricle, of a dark color and soft consistence. The endocardium, and inner coat of the great vessels, were stained by imbibition. *Cavitas abdominis:* The uterus well contracted, and otherwise normal; the peritoneum everywhere of healthy aspect, and cavity without exudation. In the left ovary a large *corpus luteum.* The liver of normal shape and dimensions, with a few extravasations of blood, some very small, and others more extensive, under the peritoneum at its convexity. The blood was dark and fluid. The surface of the substance of the liver was generally granular: on the left lobe, and at the margin of the right lobe, the granulations were from half a line to a line in diameter, and of a pale yellow; while upon the surface of the right lobe they were of a darker and more livid tint. The whole parenchymatous substance of the liver was firm, and consisted of the like granulations. In the hepatic veins the blood was dark and fluid. The capsule of Glisson appeared thickened. The spleen was of somewhat large dimensions, but normal. The kidneys were of ordinary size; but under the proper coat of both, which in places adhered firmly, there were extravasations of dark and fluid blood, partly capillary, and partly of greater extent. The surface of the kidneys was yellowish-grey and granular, and the veins dilated at several points. The cortical substance was finely granular and anæmic, and that of the pyramids somewhat congested.

"The left *labium majus* of the external parts, which, after delivery, appeared swollen and livid, contained a completely coagulated extravasation of blood, of the size of a hen's egg. The effusion proceeded to some distance along the left wall of the vagina. The pelvis was normal in form and dimensions."

Professor Faye, in a few concluding remarks, does not arrive at any positive decision as to the actual cause of death; which, however, he in so far attributes to the effect of the chloroform, that he admits for it collaterally the probability of a prejudicial influence.—*Norsk Magazin for Lægevidenskaben, Bind* xiii, p. 707.—*Edin. Med. Jour., Nov.*, 1860

iv. *Report of a Case of Recovery after apparent Death from Chloroform:* By J. BROADBENT, Esq., M.R.C.S., Resident Surgeon to the Manchester Workhouse Hospital.

Mary M——, admitted March 15th, 1860, with obscure disease of the left knee-joint, of about four months' duration. She is twenty-three years of age, but looks thirty-three, spare, but not emaciated. Is suckling a baby nine months old. Treatment having had no effect in arresting the disease, it was decided to amputate the limb. For this purpose she was put on the operating-table on March 25th. Nothing unusual was observed in her expression; her pulse was about 120, rather feeble; heart sounds normal. About two drachms of chloroform was poured on lint, folded in a funnel shape. No struggling occurred during the inhalation. In two or three minutes the pulse was observed to become slower, but it was steady, and the respiration natural. Soon after she appeared insensible, and I was about to commence the operation, when she suddenly ceased to breathe, and the pulse could not be felt. Cold water was instantly thrown on her face, air freely admitted into the room, and artificial respiration kept up by alternately compressing and relaxing the chest. These measures were continued for a short time, but without success. The head fell on the chest, and the chin dropped—in fact, she appeared quite dead. As a last resource, in order to use artificial respiration more effectually, it was decided to open the trachea, and inflate the lungs through the wound. This was at first done with the mouth applied to the wound, and in about two minutes feeble inspiratory efforts took place, but ceased immediately when the artificial respiration was discontinued. A female catheter was now introduced into the trachea, and artificial respiration kept up through it. In a short time the natural respiratory efforts improved, and the wound in the throat commenced to bleed. After watching her closely for an hour and a half on the operating-table, and giving her three ounces of brandy, she was removed to a warm bed, and the wound brought together with plaster. She completely recovered from the effects of the chloroform; but the disease in the knee rapidly became worse, and she was anxious to have the limb removed. This was done on April 14th, chloroform being administered by means of Sibson's inhaler, if possible with greater care than before. During the operation, which was rather prolonged from the disease having extended further than was expected, she inhaled six drachms of chloroform, without any bad effect. She rallied from the operation very slowly, but afterwards progressed favorably until the stump was nearly healed, when the disease, which proved of a malignant nature, returned, and she died exhausted with repeated attacks of hæmorrhage on May 31st.

Autopsy, eighteen hours after death.—Body very anæmic. Chest: lungs healthy; pleura on the right side slightly adherent. Heart: anterior surface of right ventricle very fatty, and the muscular wall very thin; left ventricle healthy. Both ventricles contained yellowish coagula; auricles healthy. Abdomen: stomach distended

with gas; kidneys of a normal size, but their structure disorganized. The remaining organs healthy. The kidneys and muscular structure of the heart, when examined with the microscope, were found to be in an advanced state of fatty degeneration.—*Lancet.*

Art. VII.—*On the Saccharine Function of the Liver:* By George Harley, M.D. F.C.S., Royal Society.

Although it is now nearly two hundred years since our countryman, the celebrated Dr. Thomas Willis, made the important discovery of the occasional presence of sugar in the human urine, it was not, until very recently, known that the formation of saccharine matter is constantly going on in the healthy animal body.

Since Bernard, in 1848, communicated to the French Academy the discovery of the saccharine function of the animal organism, physiologists in all countries have more or less directed to it their attention. For a time various opinions were held by different observers regarding the origin of the sugar found in the body; but at length it was generally admitted that the liver had the power of forming a substance to which Bernard gave the name *glucogen;* that this peculiar substance was transformed into sugar; and that the sugar in its turn disappeared in the capillaries of the different organs and tissues of the body.

In the summer of 1858, however, Dr. Pavy read a paper on the "Alleged Sugar-forming Function of the Liver," before the Royal Society, the object of which was to prove that the presence of sugar in the animal economy is "due to a post-mortem occurrence"; that as long as life continues, glucogen only is to be found, and not until after death does the transformation of this substance into sugar begin.

The question of the saccharine function of the liver being a subject to which I have more or less directed my attention since 1853, when I communicated to the Société de Biologie de Paris, an account of an experimental procedure whereby diabetes can be produced artificially in animals, the above-mentioned paper was, to me, one of peculiar interest. The conclusions of the author were so much opposed to the results of my own experiments, as well as those of other observers, that I felt anxious to test them.

Accordingly, having received the kind offer of Professor Sharpey's coöperation, I undertook a series of experiments, the results of which I beg the honor of communicating to the Royal Society.

As the experiments performed were merely a repetition of some of those made by previous inquirers, I shall not enter into detail, further than is necessary to explain the precautions adopted with the view to avoid error. And, looking at the object in view, it will readily

be understood why in the present instance the tests employed for the detection of the sugar were limited to caustic potash, with and without sulphate of copper. The mode of proceeding was as follows: In testing the blood, a quantity of distilled water, equal to about four times that of the blood used, was boiled in a capsule. To the water, when boiling, were added a few drops of acetic acid, and afterwards the blood was very gradually introduced. In order that the albumen might be thoroughly coagulated, a drop or two more of acetic acid were added, care being taken to avoid an excess. When the albumen was completely coagulated, which was known by its separating and floating in clear liquid, the whole was thrown on a filter. The clear filtered liquid was then tested. The same process was followed when operating on the liver.

The first point to be ascertained was whether, under favorable circumstances as regarded diet, sugar could be found in the circulation. The following experiment proved this: *Exp.* 1.—From the carotid artery of a rough terrier dog, three hours after being fed on bread, milk, and boiled liver, a portion of blood, equal to about three-fourths of an ounce was withdrawn. This on being treated in the manner explained, gave distinct evidence of the presence of sugar. A second portion of blood, after standing thirty-five minutes in a room of moderate temperature, yielded a similar result.

As in this instance a few seconds elapsed between the withdrawal of the first portion of blood and its treatment with the boiling acidulated water, and as it was possible that in these few seconds the sugar might have been formed from the glucogen present in the circulation, we (Professor Sharpey and myself) thought it advisable in our next experiment to allow the blood to flow directly from the artery into the boiling mixture, and thereby avoid the possibility of sugar being produced by the transformation of glucogen after the removal of the blood from the body. It was further desired to operate on an animal in what might be considered its natural condition as to food. Accordingly one that had been running at large was selected, and the following experiment performed: *Exp.* 2.—Into the left carotid artery of a small cocker dog was inserted a canula with a stopcock. The animal was then placed so as to allow the blood to flow directly into the boiling acidulated water. The clear filtered liquid from this blood became of a yellow tint on being boiled with soda, and gave a red precipitate with the sulphate of copper and potash, thereby indicating the presence of sugar. Two ounces of blood from the same animal were similarly tested after the blood had stood twenty-four hours in a room of moderate temperature, and the result obtained was the same as with the first portion.

The next experiment was made on an animal under conditions, as regards food, unfavorable for the production of sugar. In order, too, to avoid any chance of injuring the sympathetic nerve during the operation, and thereby favoring the formation of sugar in the body, the blood was withdrawn from the right femoral artery instead of the carotid. The following are the particulars of the experiment: *Exp.* 3.—A good sized dog was fed solely on flesh during four days.

Three hours after the last meal, which consisted of half a pound of boiled horseflesh, an ounce and a half of blood was permitted to flow from the femoral artery directly into the boiling mixture. The solution obtained from this blood, as in the other cases, contained sugar. Another portion of blood, after standing three hours, was tested in the same way, and, as far as could be judged by the eye, contained a similar proportion of sugar.

In neither of the preceeding cases was the amount of sugar in the blood quantitatively determined, as I had already done so on many previous occasions; and I knew that in healthy arterial blood it varied according to the state of the digestion, and the kind of food, from an inappreciable quantity up to 0·24 per cent.*

Having been now satisfied that sugar is to be found in the blood of healthy animals at the very moment of its withdrawal from the circulation, even when none has been introduced along with the food, we next proceeded to test the grounds upon which it had been asserted that glucogen is not transformed into sugar in the healthy liver during life.

In the paper already referred to, Dr. Pavy stated that the sudden abstraction of heat from the liver after its removal from the body checks the transformation of the sugar-forming material, and thereby enables us to operate on the hepatic substance while in the same chemical condition as during life. The plan he recommends is to sacrifice a dog by pithing, and instantly to slice off a piece of liver, and throw it into a freezing mixture of ice and salt. In which case, he says, the absence of sugar is almost complete, and thence concludes that the presence of sugar in the liver, can no longer be looked upon as a "natural *ante-mortem* condition"; but "is in reality due to a *post-mortem* occurrence."

In the following experiments, not only was the plan recommended most scrupulously followed, but even the risk of the glucogen in the liver becoming transformed into sugar during the process of preparing the decoction was avoided, by cutting the frozen liver into thin slices, and allowing them, while still in that condition, to fall directly into the boiling mixture of acetic acid and water. The liver was in this way prevented from thawing until it entered a medium as capable of arresting the transformation of its glucogen into sugar as the cold. The decoction so obtained might, therefore, be presumed to contain the soluble matters as nearly as possible in the same chemical state as they were in the living organ. *Exp.* 4. — A small, but full grown dog was fed during fourteen days solely upon animal food. Four hours after a meal of boiled horseflesh, he was killed by section of the medulla oblongata. The abdomen was rapidly opened, and a portion of liver cut off and instantly immersed in a freezing mixture of ice and salt. A second portion of liver was as speedily as possible detached, and quickly washed in cold water. The latter portion was then, without loss of time, cut into fragments, which were allowed to fall directly into

* "On the Physiology of Saccharine Urine," by George Harley, M.D., British and Foreign Medico-Chirurgical Review, July, 1857. pp. 191–204.

boiling acidulated water. On testing the clear filtrate, distinct evidence of the presence of sugar was obtained. After half an hour, the frozen portion of liver was taken, without being allowed to thaw, and sliced directly into the boiling water with acetic acid. The clear liquid yielded in this case as distinct evidence of sugar as in the other. Forty minutes after the death of the animal, another portion of the liver, which till then had remained undisturbed in the abdomen, was treated like the other. This gave evidence of containing a much greater quantity of sugar, thus confirming Bernard's statement, that the transformation of glucogen goes on in the liver after its removal from the body, or after the death of the animal.

In order to be perfectly certain that the sugar found in the liver at the instant of its removal from the body was really formed where it was found, and not carried there by the portal blood from the food, the following experiment was performed: *Exp.* 5.—A dog was fed during ten days on boiled tripe. Twenty-two hours after the last meal the animal was pithed. In less than twenty seconds, a portion of the liver was in the freezing mixture of ice and salt. While I boiled directly another portion of liver, Professor Sharpey put a ligature on the portal vein, and collected its blood. He likewise collected some of the hepatic blood which flowed from the cut liver.

In the portal blood not a trace of sugar could be detected. The hepatic blood, on the other hand, gave distinct evidence of its presence. Both bloods were tested exactly alike. The clear liquids obtained from the frozen liver, and from the portion treated directly, notwithstanding that they were filtered while hot, and also tested while still hot, both gave distinct evidence of sugar. On the following day, a second portion of portal blood, which had been purposely kept all night, in order to ascertain if, on standing some time, sugar would form in it, still yielded the same negative result. Even after treating it with saliva, which would have transformed its glucogen into sugar, had it contained any, no evidence of the presence of sugar was obtained. On the other hand, when saliva was added to the decoctions of the liver above spoken of, a great increase in the amount of sugar was observed. The quantity of sugar so obtained did not appear to be so great, however, as that yielded by a portion of the liver which remained all night untouched in the abdomen of the animal.

Professor Garrod, F.R.S., who was present, not at the commencement of the experiment, but on the following day, when the different decoctions were tested, agreed with Professor Sharpey and myself, that this experiment showed the truth of Bernard's statement, that the liver might contain both sugar and glucogen, when the portal blood contained neither.

The stomach and intestines of this animal were found void of food. The large intestine only contained fæcal matter.

For the sake of still further assurance that the sugar found in the liver was neither due to some accidental cause, nor immediately derived from food, we determined to deprive an animal of food for some days before examining the liver. The following experiment was accordingly performed: *Exp.* 6.—A very large and powerful dog, in

admirable condition, was subjected to a rigid fast for seventy-two hours—three full days. Immediately after death, by section of the medulla oblongata, a portion of the liver was sliced off, and immersed in ice and salt. Blood was then collected from the following sources: 1st. From the portal vein. 2d. From the liver (i. e., blood which flowed from the liver when a portion of it was sliced off). 3d. From the right side of the heart. 4th. From the aorta. 5th. From the inferior vena cava.

Although these bloods were all treated in a similar manner, and tested with the same quantities of copper and soda, yet none of them gave unequivocal evidence of the presence of sugar, except that from the liver. The blood from the right side of the heart gave doubtful evidence. At first sight it may appear strange that the blood from the right side of the heart should contain scarcely any appreciable quantity of sugar, while that of the liver showed its presence very obviously; but this no doubt arose from the hepatic blood being in great part prevented from reaching the heart; 1st, on account of most of it escaping into the abdomen, when the portion of liver was cut off; and 2dly, on account of its flow being in great measure arrested by the ligature of the portal vessels.

All the bloods, except the hepatic, seemed to be free of glucogen, as well as sugar; for none of them, with that exception, gave any evidence of its presence after being treated with saliva in the usual way.

On examination of the frozen liver (after three hours), which, as in the other cases, was not allowed to thaw before being put into boiling water, the decoction was found to reduce the copper readily.

On opening the stomach, nothing was found in it except some neutral mucus. The intestines were equally destitute of food, and in the rectum only a very small quantity of fæces was found; so there could be no doubt as to the animal being in a fasting condition.

The only point now remaining was to determine quantitatively the increase in the amount of sugar in the liver after its removal from the body, and for that purpose we preferred operating on an animal fed on a mixed diet. *Exp.* 7.—A small dog, which had been previously fed on animal diet, received a full meal of bread and milk. Five hours afterwards the animal was pithed, and a portion of the liver rapidly sliced off, and immersed in a freezing mixture. A ligature was placed on the portal vein, and its blood collected before the circulation had ceased.

On examination, this blood was found to contain a small quantity of sugar, derived no doubt from the food. Bernard, I believe, has erred in supposing that all the saccharine matter found in the animal organism is formed out of the glucogen produced in the liver. This, no doubt, is the case in the carnivora when the diet is restricted to food inconvertible into sugar in the alimentary canal, but cannot be regarded as the natural state of things either in the omnivora or herbivora; for the food of the latter not only contains sugar, but its amylaceous elements may be converted into that substance in the process of digestion. The sugar found in the bodies of animals fed on a mixed diet ought, therefore, to be regarded partly as the direct

product of the food, and partly as derived from the glucogen formed in the liver.

Bernard's chief argument against this view is founded on the fact that the livers of dogs fed on a mixed diet contain no more sugar than those fed on purely animal food. In my opinion, however, this fact is not sufficient to decide the question; for, as the liver does not store up sugar, the quantity it at any time contains is no criterion of the amount produced in it. Moreover, the sugar derived from the food need not be expected to be found in the liver. Had Bernard gauged the sugar present in the blood, instead of that in the liver, after each kind of diet, the result obtained would, I believe, have led him to a different conclusion. This being a point of great practical importance in the treatment of diabetes, I may be here permitted to mention that I have occasionally found nearly twice as much sugar in the blood of an animal on a mixed, as in that of one feeding on a purely flesh diet.

To return to the last experiment. About two hours after the death of the animal, portions of the frozen part of the liver, and of that which had been kept warm in the body of the animal, were carefully weighed, and the proportions of sugar they respectively contained estimated by volumetric analysis.

The portion of frozen liver was found to contain 0.333 per cent., and that of the other 1.55 per cent. of saccharine matter. It is thus seen that in two hours the sugar in the liver had augmented nearly five-fold. As Bernard has shown, the simple washing out of the liver, by passing a stream of water through its vessels, would remove all the sugar anteriorily formed. On placing it again aside for a short time, a fresh portion of sugar would form in it, at the expense of the glucogen.

0.333 per cent. of sugar seems a small quantity; but if we suppose a liver weighing, as in man, not less than 50 oz., to contain 0.333 per cent., above 70 grs. of sugar would be present in it at the moment of death—no very insignificant quantity, when it is recollected that sugar is removed from the liver with every pulsation of the heart, to be partly consumed, and that it is as continually supplied by the organ.

The results of the experiments now related do not, therefore, in any way countenance the notion that sugar is not produced in the healthy animal body. On the contrary, such conclusions as they afford are altogether in favor of the generally received views upon the subject.

From the preceding experiments, the following conclusions may be drawn: 1st. Sugar is a normal constituent of the blood of the general circulation. 2d. Portal blood of an animal on mixed diet contains sugar. 3d. Portal blood of a fasting animal, as well as of an animal fed solely on flesh, is devoid of sugar. 4th. The liver of dogs contain sugar, whether the diet is animal or vegetable. 5th. Under favorable circumstances, saccharine matter may be found in the liver of an animal after three entire days of rigid fasting. 6th. The sugar found in the bodies of animals fed on mixed food, is partly derived directly from the food, partly formed in the liver. 7th. The

livers of animals restricted to flesh diet, possess the power of forming glucogen, which glucogen is at least in part transformed into sugar in the liver—an inference which does not exclude the probability of glucogen (like starch in the vegetable organism) being transformed into other materials besides sugar. 8th. As sugar is found in the liver at the moment of death, its presence cannot properly be ascribed to a post-mortem change, but it is to be regarded as the result of a natural condition.—*Lancet, Jan.* 1861, *Am. edit.*

Art. VIII.—*On the Arrangement of the Muscular Fibres of the Ventricular Portion of the Heart of the Mammal.* By James Pettigrew, Esq.

In the following abstract, published in the Proceedings of the Royal Society, of the Croonian Lecture for 1859, Mr. Pettigrew has given a sketch of his original and important views on the muscular structure of the heart, based upon an extensive series of elaborate dissections which he performed at the University of Edinburgh, in competition for a prize offered by Professor Goodsir. They form a contribution of great value to the anatomy and physiology of the subject :

The lecturer began by referring to the descriptions of the arrangement of the ventricular fibres of the heart given by previous inquirers, more especially Lower, Senac, Wolff, Gerdy, Duncan, and Reid. He then proceeded to give an account of the results of his own investigations, which had been conducted on the hearts of the sheep, calf, deer, ox, horse, etc. ; all of which, he observed, bear a perfect resemblance to the human heart.* In order, as much as possible, to overcome the difficulties of the subject, he availed himself of drawings, explanatory diagrams, and models illustrating the course and relation of the fibres. To these last, however, he observed, he attached no special importance, further than that they were useful vehicles of communication ; and it was to the dissections themselves, some of which were before the Society, that he looked for a corroboration of the statements he advanced.

Commencing with the left ventricle, which he believes to be the typical one, the lecturer stated that, by exercising a little care, he had been enabled to unwind, as it were, its muscular substance, and so to separate its walls into several layers,† each of which is characterized by a difference in direction. Seven layers, at least, can be

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* Mr. Pettigrew's researches include also the arrangement of the fibres in the ventricles of the bird, reptile and fish.

† Senac (*Traite de la Structure du Cœur, etc.* [Paris, 1749], planche 8) figures four layers; and Searle (*Cyc. of Anat. and Phys.*, art. "Heart") speaks of three.

readily shown by dissection; but he believes they are in reality nine, viz: four external, the fifth or central, and four internal. He explained how the external fibres are continuous with the internal fibres at the apex, as was known to Lower,* Gerdy,† and others; and how the fibres constituting the several external layers are continuous with corresponding internal layers likewise at the base‡—a fact to which the lecturer drew particular attention, as being contrary to the generally received opinion, which is to the effect that the fibres at the base are non-continuous, and arise from the auriculo-ventricular tendinous rings, which as he showed by numerous dissections, is not the case.

Coming next to the question of the direction of the fibres, he showed how there is a gradational sequence in the direction of the fibres constituting the several layers. Thus the fibres of the first layer are more vertical in direction than those of the second, the second than those of the third, the third than those of the fourth, and the fourth than those of the fifth, the fibres constituting which layer are transverse, and run nearly at right angles to those of the first layer. Passing the fifth layer, which occupies the centre of the ventricular wall and forms the boundary between the external and internal layers, the order of things is reversed; and the remaining layers, viz.: six, seven, eight and nine, gradually return to the vertical in an opposite direction, and in an inverse order. This remarkable change in the direction of the external and internal fibres, which had in part been figured by Senac, and imperfectly described by Reid,§ as well as other detached and important facts ascertained by himself and others—such as the continuity of the fibres at the apex and base, already adverted to—he suggested might be accounted for by the law of the double conical spiral, which he proceeded forthwith to explain.

The expression of the law, as he conceives it, with reference to the arrangement of the fibres in the ventricle, is briefly the following: By a simple process of *in*volution and *e*volution, the external fibres become *internal* at the apex, and *external* again at the base; so that, whether the fibres be traced from without inwards, or from within outwards, they always return to points not wide apart from those from whence they started. In order to illustrate the principle of the double conical spiral in the above sense, he took a sheet of net, through which parallel threads of colored wool, representing the individual fibres, were drawn at intervals; and laying it out on the table before him, with the threads placed horizontally, seized it by the right-hand off corner, and rolled it in upon itself (*i. e.*, towards his own body) seven turns, so as to produce a cone whose

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* *Tractatus de Corde, etc.* London, 1669.

† *Recherches, Discussions et Propositions d'Anatomie, Physiologie, etc.* Paris, 1823.

‡ The late Dr. Duncan, jun., of Edinburgh, was aware of the fibres forming loops at the base, but seems to have had no knowledge of the continuity being occassioned by the union of corresponding *external* and *internal* layers, or that these basal loops were prolongations of like loops formed by similar corresponding external and internal layers at the apex—a point which the lecturer believes he is the first to establish.

§ *Cyc. of Anat. and Phys.*, art. "Heart." London 1839

walls consisted of nine layers.† On gradually unwinding the walls of the cone thus fashioned (which is tantamount to undoing the spirals), so as to imitate the removal of consecutive layers from the walls of the ventricle, he finds that the gradation in the direction of the several layers just specified is distinctly marked; and that these layers, as was exhibited in various dissections, find a counterpart in the ventricle itself. Thus (the heart being supposed to be placed upright on its apex), in the first external layer the threads are seen running from base to apex, and from left to right,‡ almost vertically; in the second layer they are slightly oblique; this obliquity increases in the third, and still more in the succeeding layer, till in the fifth, or central one, the direction of the threads becomes transverse. After passing the central layer, the direction of the threads (as of the fibres) is reversed; in the sixth layer they begin to turn from *right* to *left*, with a slight inclination *upwards*: and in succeeding layers gradually become more and more vertical, until the innermost, or ninth, is reached, in which they become as vertical as in the first, but are curved in an opposite direction.

As a necessary consequence of this arrangement of the fibres, the lecturer showed, that when the layers are in apposition, as they exist in the undissected ventricle, the first external layer and the last internal cross each other with a slight deviation from the vertical, as in the letter X; while in the succeeding external and internal layers, until the fifth or central one, which is transverse, is reached, they cross at successively wider vertical angles, as may be represented by an ⋈ placed horizontally.

Holding the cone, prepared as described, against the light, the lecturer then showed how, by the rolling process, a double system of conical spirals, similar to those found in the left ventricle, had been produced, the one an external left-handed down system, running from base to apex, and corresponding with the external layers; the other an internal right-handed up system, running from apex to base, and corresponding with the internal fibres; and how, seeing the opposite systems are the result of different portions of the same threads being rolled in different directions (the one within the other), the spirals are consequently continuous at the apex.

He in this manner explained the continuity of the external and internal fibres at the apex. By simply producing the threads forming the internal spirals, and turning them out at the base until they met corresponding external spirals, he next showed how the continuity of the fibres at the base might be accounted for. The connection of the fibres at the base, he remarked, is effected for the most part as at the apex, by continuity of their proper muscular substance; but those of the papillary muscles are continued by the tendinous cords. This continuity observes a certain order, so that certain external lay-

† A sheet of parallel lines drawn upon it will answer the purpose equally well, except that its non-transparency precludes our seeing the external and internal spirals rolled the one within the other when the sheet is fashioned into a cone, and held against the light, as the lecturer recommends. The sheets should be twice as long as they are broad; and the lines or threads should run in the direction of the length.

‡ That is, in the direction from the left hand to the of right the observer.

ers are continued at the apex into certain internal layers, and turn outwards at the base into their original external position. Thus, the first layer is continuous with the ninth, the second with the eighth, the third with the seventh, and the fourth with the sixth; while the fifth occupies, as already said, the middle place between the four external and four internal. He thus endeavored to prove that a strong analogy exists between the arrangement of the fibres at the apex and the base; and that the same principle which turns in the external fibres at the apex, also turns out the internal at the base; a view which, while it extends rather than militates against that of older writers, was strongly supported by the arguments he adduced. It would, therefore, seem that the fibres do not form simple loops, pointing towards the apex, as generally supposed, but twisted continuous loops, pointing alike to apex and base. From this arrangement, it follows that the first and ninth layers embrace, in their convolutions, those immediately beneath them, while these in turn embrace those next in succession, and so on until the central layer is reached; an arrangement which may in part explain alike the rolling movements and powerful action of the ventricles.

The lecturer next drew attention to the manner in which the external fibres pass into the interior of the ventricle, to form the musculi papillares. He first remarked, that when the external fibres get into the interior, they are necessarily confined to a smaller area, and are therefore crowded into a mass of greater thickness, which contributes to form the papillary muscles. He then showed that the external fibres, entering at the apex, and forming the "vortex," pass inwards in two principal parcels or bundles, one of which comes chiefly from the posterior surface of the ventricle, and winds forwards to enter the apex anteriorly; while another comes from the anterior surface, and winds backwards to enter the apex posteriorly; a fact which the lecturer believes has been hitherto overlooked. On entering the cavity, the anterior bundle crosses to the posterior wall, and forms the posterior papillary muscle, whilst the posterior bundle forms the anterior papillary muscle. The fact of this double entrance, and its relation to the papillary muscles, was shown in various preparations; and it was remarked, that but for this double entrance, which applies to all the external layers, the apex of the ventricle would be like the barrel of a pen cut slantingly, or, in fact, lop-sided; whereas, by the arrangement described, it is rendered bilaterally symmetrical.

To bring this bilateral entrance and symmetry into harmony with the description already given of the succession of layers, and with the illustration of the conically rolled sheet, the lecturer explained that we must regard the primary sheet as having split into two; or we must suppose a second one superadded, and rolled up along with the first. In fact, if a second sheet of net, with parallel threads, be laid on the first, so that the threads upon it intersect those of the first at an acute angle, and the two are then rolled up together in the way already described, the result will be that the opening at the apex will have two symmetrical lips, as it were, representing the two parcels of fibres forming the vortex in the natural heart.

It is well known that the wall of the left ventricle is thickest at about a third of its length from the base, and that from this point it decreases in thickness towards the base, and still more towards the apex, which is its thinnest part. This condition may be explained by a certain modification of the preceding description; by supposing, namely (what is really the fact), that the outermost and innermost layers extend further towards the apex and towards the base than those which come next, and these again further than those which succeed, and so on with the rest; the central one being of least extent, and confined indeed to about the middle third of the ventricle. In this way the ventricular wall is thickest towards its middle, where it is composed of all the layers; but becomes thinner and thinner towards the base and apex, where it consists of fewer and fewer layers.

Proceeding next to speak of the right ventricle, and especially of its relation to the left, the lecturer observed that the simplest way to view that ventricle is to regard it as a segment of the left one; and this view he considers to be most in accordance with what we know of its structure and mode of development. For a short time after the heart appears in the embryo, its ventricular compartment is simple; but a septum soon begins to rise up within it, which proceeds from the right side of the apex and anterior wall of the cavity, in the direction of the base, and is completed about the eighth week of intra-uterine life. For a time, moreover, the new-formed ventricles have equally thick walls; but as the full period is approached, the left, which is destined after birth to perform a large amount of work, comes to predominate in thickness. Starting now from the left, or "typical" ventricle, constituted as above described, the lecturer showed, that by pushing in the anterior wall, in imitation of the constructive process in the embryo, until it reaches the posterior wall, two ventricles are produced, with a partition or septum between. As, however, the septum in this case is double, and unattached posteriorly, he said it was necessary, in order to complete the structure, to suppose the fibres forming the posterior border of the septal duplicature as coalescing or anastomosing with corresponding fibres of the posterior wall, whilst the fibres of the two halves of the duplicature itself are blended with each other. In this way, as he explained, there results a single septum, connected posteriorly, and constituted in a manner which remarkably accords with the structure discovered by dissecting the adult heart. Thus, when both ventricles are dissected at the same time, the fibres forming the external layers posteriorly are found to be for the most part common to both; in other words, the fibres on the back part of the left ventricle cross over the posterior coronary tract, and pass on to the right ventricle; whereas, in front, with the exception of a large cross-band at the base, the fibres of the right and of the left ventricle respectively dip inward at the interior coronary tract, as if altogether independent of each other; an arrangement which induced Winslow to regard the heart as consisting of two muscles enveloped in a third. When, moreover, the so-called common fibres, posteriorly, are dissected layer by by layer simultaneously with the independent anterior fibres, it is

found that both pass through the same changes of direction; and the same rule holds good with the fibres of the septum.

Another possible mode of explaining the septum, as the lecturer showed, is to regard the layers entering into the formation of the left ventricle as splitting up posteriorly, the one-half of each layer winding round to form the right ventricle, and then dipping in front to form the right half of the septum, whilst the other half proceeds immediately forwards to form the left half of the septum.

Both ventricles thus appear to be formed on the same general plan, but they differ materially in the structure of their apices; and the question arises, which is the *primary* or *typical ventricle?* Now, while the fibres of the left ventricle enter its apex in a spiral manner by a species of involution similar to that which would be produced by rolling a sheet of muscle into a cone, those of the right ventricle simply bend or double on themselves. Moreover, as the lecturer suggested, were we to split the septum into two, assigning to each ventricle its proper share, and then apply the cut ends of the common fibres (which cross from the left to the right ventricle posteriorly), to their corresponding fibres in the left half of the septum, we should find that we had still a perfect whole—in other words, a complete system of external and internal spirals; whereas, the fibres of the right ventricle and its half of the septum, treated in the same way, would represent only a part of a more complete system—a portion nipped off, as it were, from the side of the perfect cone. Accordingly, if we would dissect the left ventricle, and especially its apex, symmetrically, we must detach the right ventricle as if it were of no account, and dissect layer after layer of the septum *pari passu* with the layers of the left ventricular wall generally; on the other hand, the right ventricle can be dissected only in connection with the left.

For these reasons, the lecturer is inclined to regard the left ventrical as the typical one, and the right as a mere segment thereof; and, in further corroboration of this opinion, he referred to the shape of the right and left ventricular cavities, as shown by casts of their interior. The left always yields a beautifully finished and perfect right-handed conical screw; while the cast of the right ventricle, although it has the same twist, represents only an incomplete portion. This statement was illustrated by a wax-cast of the ventricles of the heart of a deer.

In conclusion, the lecturer remarked that the arrangement of the fibres composing the ventricles of the mammalian heart, as he had endeavored to expose it, is characterized by comparative simplicity, and harmonizes perfectly with what is known of the heart's movements.

The matters touched on by the lecturer are more fully treated of, and the descriptions copiously illustrated by figures, in his paper to the Royal Society, entitled, "On the Arrangement of the Muscular Fibres of the Ventricular Portion of the Vertebrate Heart." By Jas. Pettigrew, Esq. Communicated by John Goodsir, Esq., Professor of Anatomy in the University of Edinburgh. Received, Nov. 22, 1859.—*Edin. Med. Journal, Dec.*, 1860.

REVIEW.

Review I.—*An Elementary Treatise on Human Anatomy:* By Joseph Leidy, M. D., Professor of Anatomy in the University of Pennsylvania, etc., etc., etc. Pp. 663, 8vo. With 392 illustrations. Philadelphia: J. B. Lippincott. 1861.

The following are the first two sentences of this book: "The word anatomy means dissection; but it has become to be applied to the study of the physical structure of organized bodies. The word is variously modified, according to its application; and thus we have vegetable anatomy, comparative anatomy, human anatomy, pathological anatomy, etc."

"The word anatomy means dissection." It may be doubted whether at any time during the historical period, anatomy was ever restricted to mere dissection so as to exclude the fundamental idea or study of structure. Dissection, indeed, is practical anatomy. The learned Greek philosopher and botanist, Theophrastus, in the fourth century before Christ, is cited by Liddell as authority for the only definition of the word *Ἀνατομή*, namely, "a cutting up, especially of an animal's body, anatomy." Schrevelius, more than two centuries ago, gave in his Greek and Latin Lexicon, the following definition: "*Ἀνατομή* et *Ἀνατομία, dissectio præcipuè corporis humani.*" From the nature of the manipulatory procedure as well as from the language of the ancient authors, both expressed and implied, the dissection of the body and the mechanism of the body, the process of art and the science revealed by it, the thing and the thought, must be considered as inseparably connected throughout all time.

Galen, in his second book on anatomical manipulations (*de anatom. administ.*) refers to his predecessors who had not written upon "anatomical manipulations." He says: "I do not blame the ancients, who did not *write books on anatomical manipulation;* though I praise Marinus, who did. For it was superfluous for them to compose such records for themselves or others, while they were, from their childhood, exercised by their parents in dissecting; so that there was no more fear of their forgetting their anatomy than of their forgetting their alphabet. But when grown men as

well as children, were taught, this thorough discipline fell off; and, the art being carried out of the family of the Asclepiads, and *declining* by repeated transmission, *books* became necessary for the student." Let the student read Celsus (*lib.* I.), and he will find that dissection and vivisection were both means and ends, the manipulation having had no other purpose excepting "the study of the structure of organized bodies." Celsus argues that remedies cannot be used intelligently without this kind of knowledge: "Hence," says he, "the necessity of dissecting the bodies of the dead, and examining very minutely their viscera and intestines. The plan adopted by Herophilus and Erasistratus was much approved, who obtained by royal edict criminals out of prison for dissection, alive, and contemplated even while they breathed, those parts which nature had before concealed, with their relative position, color, figure, magnitude, arrangement, hardness, softness, smoothness, and connection; also the processes and recesses of each, whether any one part is inserted into another, or whether it receives part of another into itself. For when there happens to be some internal pain, he cannot know what suffers, if he be ignorant of the situation of each viscus and intestine; nor can any part which is diseased be cured by him who is ignorant of what part it is; and should the viscera of any person be laid open by a wound, he who is ignorant of the color of each healthy structure, cannot know what is sound, and what is morbid; therefore, he can render no assistance in the disease; and they maintain that external remedies are more properly applied, when the *situation, structure and magnitude* of the interior parts are ascertained; and the same argument is applicable in all these cases already mentioned. Neither should it be deemed so cruel, as many exclaim, to search for remedies for innocent people of succeeding ages, at the expense of only a few capital culprits."

"The word anatomy means dissection; but it has become to be applied to the study of the physical structure of organized bodies." Is not the word "but" used improperly, as indicating an opposition of meaning, a contrariety of import, as if anatomy and dissection were incompatibles, instead of constituting a unity, one and indivisible, the complement of each other?

The pronoun "it" has for its grammatical antecedent, dissection, which is the last noun and nearest neighbor, in the preceding part of the sentence, a construction contrary to the author's meaning.

Apply this pronoun to anatomy, and the reading is anatomy has become the study of structure, etc., that is, anatomy has become anatomy. Phrases and tenses are unnecessarily mixed. If anatomy ever meant mere dissection only (which is not proven), it must have been in the unknown past, and yet the author speaks of the present, "anatomy means"—"it has become," etc. The author probably intended to say, anatomy formerly meant nothing but dissection. It does certainly mean more at present. Consider the following phrases: "it [anatomy] has become to be applied to the study of the physical structure of organized beings," that is to anatomy. "Has become to be." "*Become*," is compounded of two verbs, *be* and *come;* and to become applied is all sufficient—"has become to be," is a phrase little better than "leave no unoccupied vacuity" (298); a Philadelphia lawyer cannot suggest how a vacuum could be otherwise. "Physical," as applied to "the structure of organized beings." is slightly redundant; the inorganic world has a better right to it than the moral, mental, and organic.

The next sentence, which finishes the first paragraph, is not wholly blameless, if accuracy of style be not below the attention of authors: "The word [anatomy] is variously modified, according to its application; and thus we have vegetable anatomy, human anatomy, pathological anatomy, etc." Now in all of these examples, the word *anatomy*, as applied by the author himself, undergoes *no modification whatever*. So much for the first forty-four words in this book.

The fourth sentence in the book reads thus: "General anatomy treats, in common, of the physical elements of structure of the various organs of the body." To say nothing against the superfluity of the word "physical," this definition is not very luminous, for "an elementary treatise on human anatomy." Let the student open (as the present writer does) the first books which come to hand, and compare this definition with the definitions given by other anatomists: "General anatomy: that part of the science which treats of the structure and properties of the different tissues which are common to several organs." (*Anat.* H. Cloquet, 2.) Bichât, the father of general anatomy, says "of the properties independent of life—these are what I call *properties of texture*." These textures he divides into twenty-one organized elements, as may be seen in his voluminous work on General Anatomy. "General Anatomy, considering together the organs similar as to their texture, and confin-

ing itself to what may be generic or common to them all, has for its special, but not its only object, their texture." (Béclard, 75.) "General anatomy comprehends an account of all the separate substances of which the organs are composed, not as these substances exist combined in organs, but as they form peculiar substances." (*Nat. Cycl.* Lond. i, 683.)

Is the eleventh sentence, or that which purports to be a sentence, any sentence at all,* although it makes an entire paragraph? It affirms nothing, predicates nothing of any antecedent or nominative: "In commencing the study of anatomy, the author thinks it not amiss in directing the student to take a cursory glance at the general structure, characteristic phenomena, and conditions of existence of living bodies, of which man constitutes the highest or most complex type."

A proposition may be made out of this passage by changing it thus: "The author thinks it not amiss to direct the student," etc.; or thus: "In *the* commencing *of* the study of anatomy, the author thinks it not amiss in *the* directing *of* the student to take a cursory glance at the general structure, characteristic phenomena, and conditions of existence of living bodies, of which man constitutes the highest or most complex type," *to express the opinion that otherwise, no one can from the mere details comprehend the great principles of the science.* This, though an unwieldy sentence, affirms something positive. The nominative is very remote from the affirmation or judgment—"the author thinks it not amiss," * * * to express the opinion or something of that nature. From the one to the other "is a hard road to travel," and withal a long one.

The phrases, "in commencing the study of anatomy"—"in directing the student," are neither verbs nor, strictly speaking, participles. They assimilate the characteristics and regimen of substantive phrases, being in the objective case, and governed by the preposition "in"; therefore, according to rule, they require the following construction: "in the commencing of the study * * * in the directing of the student" * * * In any case, however, the participle affirms nothing, therein differing from the verb whence it is derived.

The artistic effort to please the eye by a variegated typography

* According to Aristotle, a sentence is "a form of speech which hath a beginning and an end within itself, and is of such a length as to be easily comprehended at once." The end is generally the main point.

which pervades the book, but which neither a chaste style nor a severe taste requires, may be allowed to pass without praise or censure ; but the sprinkling of accent-symbols promiscuously upon words as a writer sprinkles sand on his manuscript still wet with ink, is slightly pedantic, outside of spelling books and dictionaries.

Whatever may be thought of this innovation in typographical æsthetics, one has a right to expert uniformity, consistency and accuracy in the premises. In this work, however, not a few words which are decorated with accentual honors upon certain syllables, appear in other places quite differently, while the great mass of words of equal dignity march from page to page without any ornament whatever. Why not bestow the honors of accentuation upon all non-monosyllabical words, so that in the Republic of Letters at least, "all shall be one way or all the other," from the dissyllables to the most elongated polysyllables? But in any case, a capricious, vicious, or self-contradictory accentuation is not desirable in text-books. A few examples will serve for illustration : "Sphe'noidal" (twice) 54, becomes "Sphenoid'al," 55 ; "Circum'flex," 374, is "cir'cumflex" 396, 397, 398 ; "obtu'rator and obtura'tor," contradict each other, 246, 392, 574, 124–5 ; "pharyn'geal and pharynge'al," clash 295, 553, 583, 557 ; there are but very few words in the language having three or more syllables ending in *eal* without having their accent on the antepenultimate ; Worcester *(quarto dict.)* allows of but one exception, in hymene'al,* which has the penultimate accented. Both Webster and Worcester accent the antepenultimate of laryn'geal ; while "the elements of anatomy" (356, 416, 557, 583) fall back on the penultimate, thus, larynge'al. "Pigment'ary" (606) is out of line ; Worcester accents the first syllable. The word *coccygeal* appears to be one of the slighted words, without accent. Here, however, analogy and perhaps usage indicate the antepenultimate. "Urin'iferous" (460) is objectionable.

Professor Leidy says, in reference to his anglicized nomenclature, that "A copious synonymy is added in foot notes." Leaving out of view for the present, the propriety and successfulness of his attempt to anglicify, it may be truly affirmed that he has "added in foot notes" "a copious" collection of equivalent or translatable words, but *no synonymy whatever.*

* There are, however, in the received orthoëpy of medical terminology, several words ending in *eal*, which are recollected as having the syllable before the last (the penultimate) accented, as *perineal, peroneal, peritoneal, popliteal, etc.*

Crabb, in his elaborate work on *English Synonymes*, "lays it down as a rule not to compare any words together which are sufficiently distinguished from each other by striking features in their signification, such as *abandon* and *quit*, which require a comparison with others, though not necessarily with themselves." *(Preface.)* Synonymes are restricted to words of similar, not of identical meaning, which ought not to be, but often are, confounded with each other: they must be words in the same language, whatever that may be.

The Greek word for synonyme, if rendered literally, can no more apply to the meaning of that word as now accepted, than the word artery (*ἀρτηρία*, arteria), which among the ancients signified an air-tube. Lunacy and lunatic, from *luna*, the moon, are no longer construed literally as a stroke of the moon and moon-madman. In the French, Latin, English, and other languages, words are not translated from one to another as so many synonymes; nor are the words of any one language comparable for this purpose with words of even the same language, excepting under the limitations already mentioned. These limits are fixed and known in the literature of all the cultivated and refined languages extant. M. Boinvilliers, in his able work on French Synonymes (founded on the principle as above defined), says concerning the delicate differences among these words, that their peculiarity consists in resemblance, as one brother resembles another. * * * "Se resemblant comme frères par une idée commune, sont néanmoins distingués l'un de l'autre par quelque idée accessoire et particulière à chacun d'eux: d'où naît, dans beaucoup d'occasions, une nécessité de choix, pour les placer à propos et pour parler avec justesse; qualité aussi rare qu'aimable, dont le goût, est capable de faire briller le vrai et de donner de la solidité au brillant."

As Professor Leidy, in his preface, has announced his purpose to anglicize the present nomenclature of anatomy "when admissible," it may be proper to look upon this phase of his work.

An attempt at innovation in the nomenclature of anatomy is visible in almost every page of this work. The language of science is what the wheels are to the rail car. When the progress of sience demands new terms, these should be modeled upon existing analogies, avoiding as much as may be consistent with perspicuity, such as are vague, colloquial and trivial, while such as are firmly planted should not be rooted out, even though their original etymology may

not be appropriate, nor should they be rejected because their origin may have been due to mythical accounts or fancied resemblance to certain objects totally dissimilar. As a general rule, hybrid terms, half English half classical, should be avoided in the construction of necessary neologies; at least, they should not be substituted for pure Greek, Latin, or English terms already accepted and infixed; they may be allowed to drift on until lost in oblivion.

The following nomenclatural specimens, taken at random from Dr. Leidy's book, will serve to illustrate his notions of both synonymy and anglicifying in the language of anatomy. The anglicized text is given in roman, and the synonymy or foot notes in italic characters: "The larger straight muscle; *M. rectus major; m. rectus capitis posticus major; m. axoido-occipitalis; m. spini-axoido-occipitalis;* larger posterior straight muscle. Straight muscle; *M. rectus abdominis; m. pubio-sternalis.* Lacerated foramen; *foramen lacerum; f. lacerum medius.* Arcuate ligaments; *Ligamenta arcuata.* Lesser terete; *M. teres minor.* The upper surface or back of the tongue; *dorsum.*" [Here are eight words given to anglicize one that is neat and short.] "The anterior scalene muscle; *M. scalenus anticus; m. s. prior; m. costo-trachelius;* the middle scalene muscle; *m. scalenus medius; m. s. secundus.* The straight muscles of the eye-ball; *musculi recti oculi.*" There are numerous "straight" and "terete" muscles, some "serrated," "the complex muscle," "vaginal ligaments" of the hand, "the geminous muscle," "the transverse muscle," together with many similarly anglicized phrases, at once low, trivial and vague, which are substituted for precise, simple, fixed and well-known terms. Every art or science has special and peculiar terms. The printer, the sailor, the carpenter, the farmer, and-so-forth, have a nomenclature more or less peculiar to each, but unknown to a great extent to one another. If usage has associated with any word, be it Greek, Latin or Choctaw, a definite idea or exact meaning, any attempt to anglicize it, that is, to unsettle it, is a step backward. When a label is affixed to a thing, there is no need to change or anglicize it.

If a second course student under examination for a degree, were asked to describe "the straight muscle," "the terete muscles," "the arcuate ligaments," "the vaginal ligaments," "the geminous muscle," "the serrated muscle," "the complex muscle," "the lacerated foramen," and the like, he would not be able to give intelligible

answers to questions propounded in this unintelligible style. If he be an English scholar, he cannot answer, because these terms are not in popular use, nor in dictionaries. The people know not the thing any more than the name of the straight, complex, transeverse, terete, serrate, or geminous muscle; neither does the classical scholar, though he may, like Porson, think in Latin and Greek. In order to anglicize intelligibly in anatomy, two fundamental conditions are essential, namely, a known thing and a known name already current.

One of the hardest names in anatomy is that of the great muscle of the neck, *M. sterno-cleido-mastoideus*, which is sometimes shorn of the middle part of the term. There is no popular term for this muscle, even in the ponderous quartos of Webster and Worcester. Anatomists have sometimes given this term a somewhat anglicized form, which Dr. Leidy adopts in his text, namely, the sterno-mastoid muscle. Good things, including names, are often hard, and the technical name of this muscle is one of them. The original term, composed of three Greek words, signifying *sternum, key or collar bone*, and *mastoid process*, indicate the origin and insertion of the muscle with a precision and brevity, before which an English translation "must pale its ineffectual fires." Although the collar and breast bones are popular terms, the mastoid process has not as yet been baptized and known in English. The term "sterno-mastoid" is fundamentally imperfect, seeing that it omits the key or collar bone altogether, and is no better known to the English scholar than *sterno-cleido-mastoideus*. The student having seen the thing, and adopted this name, cannot easily forget the former so long as he retains the latter. The name will suggest to his memory and understanding that this muscle is fixed at one end to the sternum and clavicle, and at the other to the mastoid process of the temporal bone. Here the nomenclature is perfect. The cavicle has its constitutional rights as well as its associates.

The Parthians, it is said, adopted a singular system of military tactics, namely, that of retreating and occasionally wheeling around to send their arrows with deadly effect at their pursuers, thereby throwing the latter into confusion. Whether after all that has been recently said, if not actually done, to elevate the standard of medical education, some in high places are retreating and occasionally shooting Parthian arrows at the reformers, may be more or less con-

jectural. But the character and scientific attainments of Professor Leidy are guarantees which place him above such a suspicion; nevertheless, his efforts to popularize the nomenclature of anatomy, unsuccessful though it must prove, seem like a retrograde movement —a secession from classical learning. A little classical "learning is not a dangerous" but a most useful thing for the medical student in reference to terminology; even though he may not be able to decline, conjugate a word, or construct one sentence in the dead languages, he may with a moderate capital of this kind of knowledge, become better qualified to understand his mother tongue, which is probably the most composite, difficult and grand of modern languages.

It is true, that among the French, medical terms are usually restricted to the French language, although the latter has a marked affinity with the Latin. There is little advantage in this, because professional *things* not being known to the public, professional *names* convey no positive knowledge. *Canal thoracique*, and thoracic duct, convey to the uninitiated no more knowledge of the vessel named, than the Latin, *ductus thoracicus*. French terminology being chiefly planted in its native soil is a law unto itself. The scientific terms of the English language are generally derived from the ancient languages of Greece and Rome, and the best mode of anglicizing them is to learn them. Mongrel words, which are not already adopted, should not be. Dr. Leidy's phrase, "internal and external inguinal fossæ" (304), is partly English and partly Latin, though appearing in the text as a translation; would not fossas, or fosses, be more analogous to the former tongue?

The author of "*the* Elements of Anatomy," must regard medical education as being at a low ebb, seeing that he introduces both into his text and foot notes, explanations relative to the singular and plural terminations of very plain words, as "*fossa*, plural *fossæ*; *foramen*, pl. *foramina*; *renes*; singular *ren*; *testes*; sing. *testiculus*; *testis*; pl. of stones, *gemini*; *vena*, sing.; *venæ*, plural," etc.

Dr. Leidy, in his account of the ossification of the epiphyses or ends of the bones, which, before maturity, are united to the main body or shaft of the bone by cartilage only, affirms that "the presence of epiphyses, gives an important incidental *condition in the* protection of the body from injury at a period of life when it is most liable to falls or blows." By the way, the phrase—"condition in the" (put in italics, not by the author, however) is wholly redundant,

while the phrase "gives a condition" is hardly warranted by good usage. One may give money to the poor, or advice to the sick, but not the condition of poverty or sickness.

The author having advanced the general proposition concerning the final cause or purpose of the epiphyses, proceeds to the enumeration of particular examples in the domains of comparative anatomy, and concludes the whole by instancing the alligator and the turtle, which, according to him, have no epiphyses, not needing them. "Frogs and toads," he says, "which, from their remarkable leaping power might be supposed to be liable to violent concussions, retain epiphyses to the long bones of their limbs almost throughout life; while the alligator and turtle, which in their sprawling condition are not liable to falls, have the long bones of their limbs developed without epiphyses." (44.)

It may be remarked, before proceeding to the anatomical allegations in this passage, that "condition" is implied in sprawling. One may say, "the sprawling alligator is not," etc.; but "sprawling condition," allowing the latter word not to be redundant, is not an admirable phrase; a "sprawling" attitude, posture, or form, seems better, though equally redundant. Sprawl ("to spread or stretch the body or limbs about widely, particularly while in a horizontal or lying posture"—Worcester) does not apply to alligators young or old, being more applicable to babies and some of the inferior animals other than crocodilians.

The alleged anatomical fact concerning the alligator, whether "sprawling" or falling, is wholly mythical. The bones of young alligators, and even those of considerable size and age, have, as well as the young in the human species, epiphyses in the bones of the extremities, pelvis, shoulders and chest. The clavicle (the existence of which has been constantly denied) loses its epiphyseal cartilage by ossification at its scapular extremity much sooner than the distal extremity of the scapula itself.

Persons engaged in the bottling business have no good warrant to conclude that cork trees exist solely for the purpose of supplying corks for bottles; nor have physiologists as yet been able to apply final causes, so as to explain, except in a few instances, the purposes of structure and development. If the final cause, as assigned above, be valid for young animals in general, it is equally so for the young alligators in particular.

Dr. Leidy says: "The lungs are highly elastic, so that if the cavities containing them are opened, they collapse to about one-third of their previous bulk; and they again may be readily inflated by artificial means" (452). This proposition of the author requires considerable modification. The lungs sometimes even fill the chest and yet do not collapse when the cavities are opened; in other cases the lungs collapse before or immediately after death, independent of any disease attributable to these organs; so that, the opening of the chest is followed by no further collapsion. The antecedents of these opposite and unexplained conditions, are probably the following: first, some persons *die with the lungs fully distended;* they *inspire* more than they *expire* during the agony; again, others, particularly after exhausting diseases, with a very feeble respiration, *literally expire nearly all of the air from their lungs* before life ceases—an *ante-mortem* collapse.

The author estimates the weight of the lungs at "two and a half pounds." If this estimate be an average one, and the result of the actual weighing of these organs, a different estimate, not based on this procedure, is of no value; but "two and a half pounds" seem to be the full normal mean weight. Meckel, one of the highest authorities in anatomy, estimates the weight of the lungs at four pounds!

"The pancreas is less consistent and of looser texture than the salivary glands" (320). The consistence of organs in relation to pathological anatomy, is of very great importance. The normal consistence of this gland very nearly approaches the type of incipient scirrhus, being probably less frequently altered by disease than any of the other abdominal viscera. There is probably no salivary gland which surpasses the pancreas in firmness, unless the former be diseased.

"The fibrous coat" of (the alimentary apparatus), a term substituted by the author, for the sub-mucous coat or tissue, is neither so descriptive nor so generally accepted as the latter; moreover, the fibrous tissue is distributed to many organs from the periphery to the centre.

The stomach is described as "a receptacle in which the food is submitted to the chemical action of liquids elaborated in its walls." This view will be more acceptable to chemists than vitalists.

"The bile is a thin, glairy, dark, yellowish-brown liquid, of a bit-

ter taste, and nearly neutral in reaction when fresh" (329). The color of bile is usually yellow when the liquid is diluted, or thinly spread over a white surface; its consistence is quite variable, being often almost gelatinous, or so ropy that it may be drawn out into long filaments.

"The urinary bladder, when empty, lies in the pelvic cavity, appearing as flattened," etc. (462). In diseases attended by suppression of the urinary excretion, which is often the case in cholera and yellow fever, the bladder contracts into a globular, not a "flattened" form. This is probably the normal form when empty during health.

"The human brain is larger than in any other animal, except the species of elephants and whales" (514). Cuvier, in his *Anatomie Comparée*, gives a number of examples quite to the contrary. Dr. Leidy himself, in the same paragraph quoted from, invalidates his own statement by admitting, that in relation to the size of the body, the brain is larger in several of the inferior animals.

Dr. Leidy says that "at the approach of the end of pregnancy, the symphyses of the pelvis undergo a slight degree of relaxation, which facilitates child-birth" (128). Dr. Morton's Anatomy contains a similar statement, namely: "The symphysis pubis admits of a slight degree of motion and extension in the parturient state" (129). Although authorities may be found to favor this postulate, as well as many errors long since exploded or of doubtful verity, yet "elementary treatises on anatomy" should exclude all such. That relaxation, separation and mobility of the anterior and posterior symphyses of the pelvis are the normal effects of pregnancy, cannot now be accepted as anatomical facts upon mere traditional grounds.

If the asserters of these facts have verified them by actual dissection or observation, the reader should be so informed. The changes above mentioned, without any qualification or abnormality, appear incompatible with the mechanism or natural state of the structures concerned. The osseous structure of the periphery of the pelvis, from the solidity of its articulations, is virtually one bone, having an enormous hole or cavity for the reception of its viscera, and for the passage of fœtal head; while the entire trunk rests and is fixed upon the sacrum. Any mobility or relaxation of the anterior symphysis in child-birth, to be available, must equally extend to the posterior articulations or symphyses, and it may reasonably be supposed render the pregnant or recently delivered woman incapable of either standing or walking for a long time before and after parturition.

For the most part anatomists and obstetricians either ignore or deny the postulates under consideration ; John Bell whose lucid and impressive style gives a charm to even anatomy, denied the alleged separation of the symphyses altogether : " I know," said he, " that tales are not wanting of women whose bones were separated during labor ; but what is so absurd, that we should not find a precedent or parallel case in our annals of monstrous and incredible facts ? Or, rather, where is there a fact of this description which is not balanced and opposed by opposite authorities and facts ? I have dissected several women who have died in lingering labor, when I found no disunion of the bones. I have seen women opened, after the greatest violence with instruments, and yet found no separation of the bones." (*Anat.* i, 67.)

Even Meckel, who vibrates among the authorities, instead of testing them by dissection, concludes thus : " Finally, this change does not necessarily imply a *real* separation of the pubic cartilages, but only the softening of the fibro-cartilage, a state in which the articular cartilages do not seem to participate. Tenon has maintained the contrary, but he is wrong : if the cartilages have sometimes been found really separated, this state must be considered as congenital or morbid ; since this arrangement has been observed even in very young girls, or the loose surfaces of the cartilages were likewise rough, or pus has been found in the cavity." (*Anat.* i, 45.)

It may be doubted whether the separation of the symphysis pubis would " facilitate childbirth." What might be gained in one diameter might be lost in another.

Dr. Gooch, in his Midwifery, says of the section of the symphysis pubis : " This operation has been recommended in deformity of the pelvis, as a mode of facilitating the birth of the child. The objections against it are decisive. If you divide the symphysis pubis by an incision through it, you will find that you do not increase the diameter of the pelvis, in the direction in which it is contracted, which is generally from sacrum to pubes. The room which this operation gives is in the lateral direction ; you therefore gain no increase of the capacity of the pelvis, where it is chiefly required. Further, the bones after being thus divided may not unite ; and the bladder is liable to be injured. The operation has been performed in this country but once ; and strange to say it succeeded ; but in ten days afterwards, the woman died, not from the operation, but from drinking porter and brandy." (214. Edit. of 1849.)

This, as compared to other elementary works on anatomy, is entitled to be called the inconographic (εἰκών, image, γράφω, to describe), while the paper and typography are worthy of the pictorial tableaux, constituting an article of *virtu* for the lover of the fine arts, and a useful book for the lover of the hard sciences.

It was Sidney Smith who said, "Review a book and then read it." The remaining space of this Journal, and a pressure of business, will not permit further comment on, or a thorough reading of, "the elements." In glancing at the work, it appears probable that, without inconveniently augmenting its size, more might be said of the differential and developmental history of the infantile, adult, senile, and sexual systems; races; teratology; anatomical deviations; philosophical and surgical anatomy, and more particularly comparative anatomy, wherein Dr. Leidy is a highly distinguished investigator; doubtlessly the learned author could improve the arrangement so as to give the work a less fragmentary character. For example, neither the general nor the special anatomy of the fasciæ can be so profitably taught in isolated parts as in their integrity or oneness.

This "Elementary Treatise on Anatomy" often fails in the giving of the fundamental elements of anatomy, as enumerated in the citation from Celsus, at the commencement of this review. The "elements of volume, form, cohesion, weight, density, vascularity, color, and the like, should be estimated with approximate, if not absolute certainty, being the land-marks between normal and pathological anatomy. Thus, in the "elementary treatise," the size of the glands is generally omitted, even when the organs are compared with one another. The sub-maxillary is said to be "a third the size of the parotid;" but no account is given of the size of the latter. From the nature of the case, no one expects exactitude in estimating the line which separates the normal from the abnormal, the congenital deviations from acquired or morbid alterations. The want of this kind of knowledge is felt at every step in pathological anatomy, and, also, on many occasions in medico-legal investigations. The student will look in vain for a full enumeration of "the elements" of the fœtal anatomy and circulation. Of organs named, some are meagerly or not at all described.

This review of "the Elements of Human Anatomy" has been written under the belief (perhaps even a bias) in favor of Dr. Leidy's ability to produce a text-book of superior excellence—superior to the one now under consideration. His reputation as a naturalist, comparative anatomist, and scholar, is national and not unknown in foreign lands. Elected, eight years ago, at the early age of thirty, Professor of Anatomy in the oldest medical school in the Republic, he has a brilliant future before him, and as he has no need of flattery, let him look upon flatterers with becoming disesteem, as being the least reliable of his friends.

B. DOWLER.

Review II.—*Annual Report of the Board of Health, for* 1860 : By Dr. C. Deléry, President.

The position of Dr. Deléry in reference to the existence of yellow fever in New Orleans, and the means by which it is to be excluded, is made evident by the following quotation :

"The logical conclusion we may draw from the facts which we have cited, is, that it is of the utmost importance to protect the city from the *importation* of yellow fever, since the *imported* fever tends evidently to become *epidemic*, whilst the *indigenous* yellow fever appears, on the contrary, to assume a *sporadic* character."

A logical conclusion becomes an indisputable fact, if the premises from which it be deduced be correct. Hence, in consideration of the importance of this conclusion, we are induced to detail these premises, that is, "the facts which we have cited."

Dr. Zehender reports a case of yellow fever originating June 27th, and terminating in death July 6th. Dr. Maas reports a second case one month later. Dr. Chastant has another on September 14th ; and about the same time Dr. Bayon has a fourth. In regard to these, "the Board of Health have the certainty that these few *sporadic cases originated spontaneously on the soil, without the help of importation*." The remaining fifteen cases of 1860 had a similar local origin.

The ninety-two deaths (which lead us to infer the existence of at least five hundred cases) in 1859, had, according to Drs. Axson and Deléry, a similar origin.

In 1859 and 1860, then, the disease was sporadic and of local origin, and not epidemic and imported.

In 1839, 1847, 1853 and 1858, "the number of yellow fever patients assumed formidable proportions."

In April, 1854, a yellow fever patient arrived from Havana, died in New Orleans without communicating the disease, in regard to which "there is nothing strange, since the conditions of development of the typhus were completely wanting." "The medical annals of Louisiana do not give a single instance of the typhus-icterode having broken out in the month of April."

In this same year (1854), a vessel arrived "from Havana, having on board several persons attacked by yellow fever." Prior to these cases, sporadic cases had occurred some two miles distant from this vessel. But, says Dr. Fenner, quoted by Dr. D., "it is true that immediately after the arrival of this vessel from Havana, the yellow

fever broke out on board the neighboring vessels, and became epidemic in that portion of the city, long before it had become so in the section where the first case originated."

Finally, in 1857, "the French man-of-war, Le Tonnere, arrived at the quarantine, having on board several sailors with yellow fever; the vessel is kept there, and thirty-two sailors fall victims to the disease. Thanks to the quarantine, the city was exempted from the typhus-icterode during the year 1857."

Such is a full and fair list of all the facts cited by Dr. D., and constitute the premises from which he deduces the "logical conclusion" that only *imported* yellow fever becomes epidemic; and hence the importance of quarantine.

We cannot refrain from expressing our astonishment that Dr. D. should deem such facts sufficient to establish such a "logical conclusion." If yellow fever may originate in New Orleans, as it unquestionably does; if yellow fever imported into New Orleans may often terminate without being communicated, which is indisputable; if in 1854 the yellow fever did first become epidemic near a vessel from an infected port, and if, in 1857, a vessel arriving with cases of yellow fever on board lost thirty-two of her crew, who had all been exposed, *prior* to her arrival, to the same sources of infection, what are the *logical* inferences? First, that the causes which engender this disease exist in New Orleans; second, that importation is not a sufficient cause, while the unknown causes which "develop it are often wanting;" third, that these causes were, in 1854 (if Dr. Fenner's statement be correct), present near the vessel from an infected port; and wanting where the first sporadic cases occurred; and fourth, that the crew of the Le Tonnerre had all been subjected to the causes of the disease prior to its arrival at Quarantine, and sickened in consequence.

Dr. D. admits that something else, in addition to importation, is requisite to produce an epidemic, and it is plain that this *unknown* "something else" is quite sufficient to explain all the facts cited by him, without resorting to the unnecessary and *il*-"logical conclusion" "that imported yellow fever tends evidently to become epidemic." True, his gratuitous supposition would explain the fact cited for 1854, but to establish such a supposition as a *logical conclusion*, it would be necessary to prove that *all* our epidemics have first prevailed near vessels from an infected port. We have failed to satisfy ourselves that this has been the case, and trust that, if Dr. D. desires to convince his professional brethren of the correctness of his position, he will attempt to accumulate the facts requisite to establish it.

The present President of the Board of Health, like his predecessor, indignantly calls attention to the large number (334) of stillborn children, and attributes it, no doubt justly, to "the deplorable incapacity of our midwives." The sale of adulterated and poisonous medicines is also brought to the attention of the Governor, and some legal protection demanded.

The Board of Health wisely solicits that, for these and other evils,

the Medical Board, which some years since "vanished under the breath of an evil genius," be reörganized.

We are now inaugurating a momentous revolution upon the principle that a government owes to its citizens *protection* to property and life. It is totally inconsistent with this principle that ignorant and innocent citizens should be still left to be cajoled and plundered by quacks, and their offspring to be murdered by midwives, who then bury them with the signature of the holy cross, as a sign-manual of their barbarous ignorance.

We much regret that the report of 1860 should be defaced by many errors, which would appear to indicate great carelessness on the printer's part, and something worse on the translator's—"practician," "vomited black," "was arriving," "efficacity," are all bad enough. But these verbal defects are less objectionable than sentences thus constructed: "Midwives of deplorable incapacity, not to say of grossest ignorance, are called every day near women in confinement, *who, thanks to their imprudent and ill-timed manœuvres*, give birth to still-born babes." These hints should suffice to inspire Dr. Delery with great distrust in future of the scholarship of his translator.

Chaillé.

Mortality of the Year 1860 in New Orleans.—[*Compiled from the Annual Report of the Board of Health, kindly presented by Dr. G. W. Dirmeyer, Secretary.*]

Population of New Orleans, 178,000.

Whites	5,884
Blacks	758
Mulattoes	421
Not stated	278
United States	3,260
Foreign	4,081
Total deaths	7,341

Deaths under 5 years of age	2,716
" from 5 to 20 y'rs of age	612
" " 20 to 50 "	2,659
" " 50 to 100 "	763
" over 100 "	3
Months of greatest mortality—	July, 789; June, 730
Months of least mortality—	Feb., 514; Oct., 520

PRINCIPAL DISEASES.

Apoplexy	164
Bronchitis	100
Casualties	100
Drowned	88
Killed or murdered	28
Suicide	20
Cholera	30
Cholera Infantum	108
Convulsions, Infantile	409
Congestion of Brain	122
Consumption	826
Croup	79
Diphtheria	145
Inflammation of Throat	22
Delirium Tremens	114
Intemperance	61
Diarrhœa	352
Dysentery	239
Dropsies	152
Dengue	4
Epilepsy	22
Fever, Scarlet	200
" Typhoid	163
" Miasmatic	48
" Congestive	114
" Pernicious	136
" Yellow	15
Gastro-Enteritis and Colitis	136
Heart, Disease of	108
Inflammation of Liver	40
Inflammation of Lungs	153
Inflammation, etc., of Bowels	155
Measles	60
Marasmus, Infantile	154
Pleurisy	15
Pneumonia	154
Still-born	334
Teething	154
Trismus Nascentium	99
Tetanus	132

Statistics of the Charity Hospital for 1860: *From the annual report presented by Dr. W. C. Nichols, House Surgeon.*

ADMISSIONS.

Total number	14,000
Males	11,623
Females	2,377
Total from United States	1,655
" Southern Confederacy	617
" Free States	1,207
" Louisiana	433
Foreign birth, exclusive of U. S.	11,702
Of these from Ireland	6,416
" " Germany	2,279
Uncertain	26

DEATHS.

Total number	1,390
Males	1,144
Females	246

BIRTHS.

Total	134
Males	74
Females	60
Still-born	1

Number of patients remaining in the Hospital, January 1st, 1861 891

Principal Diseases.	No. of Discharges.	No. of Deaths.	Principal Diseases.	No. of Discharges.	No. of Deaths.
Bronchitis	194	19	Fever, Yellow	2	...
Delirium Tremens	160	77	" Congestive	11	27
Intemperance	313	32	Congestive Chills	10	28
Diarrhœa	1068	218	Phthisis	236	195
Dysentery	361	89	Pneumonia	110	112
Dengue	458	...	Pleurisy	71	11
Fever, Bilious	31	7	Rheumatism	485	9
" Bilious Inter.	75	...	Syphilis	532	4
" Intermittent	2961	16	Ulcers	481	3
" Remittent	617	9	Fractures	167	17
" Continued	37	2	Wounds	702	34
" Typhoid	104	74			

Mortality Statistics of New Orleans, from December 31st, 1860, to February 10th, 1861, compiled from the Weekly Reports, politely furnished by Dr. Dirmeyer, Secretary of the Board of Health.

Time.	*Total Deaths.*	*Children under 2 yrs.*	*Under 20.*	*U. States.*
January (4 weeks)	518	128	247	237
February (2 weeks)	256	73	133	114

Principal Diseases.	*January (4 weeks).*	*February (2 weeks)*
Abscess of Liver	6	0
Apoplexy	6	8
Bronchitis	12	4
Cholera Infantum	2	1
Congestion of the Brain	4	1
Consumption	48	30
Convulsions, Infantile	26	13
Croup	3	3
Diarrhœa	20	14
Dysentery	6	3
Diphtheria	10	6
Dropsy	14	8
Fever, Miasmatic	14	2
" Scarlet	33	7
" Typhoid	12	5
Gastro-Enteritis	4	2
Inflammation of Lungs	3	2
Marasmus, Infantile	7	4
Measles	7	0
Pneumonia	31	21
Still-born	35	20
Teething	11	2
Trismus Nascentium	13	4
Tetanus	8	6

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Quarter page,	"	15;	"	"	3.

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MAY, 1861.

NEW MEDICAL JOURNAL.

The New Orleans Medical Times: A Monthly Journal: Edited by Anthony Penistón, M. D., Professor of Anatomy, New Orleans School of Medicine: Visiting Physician, Charity Hospital. No. 1, March, 1861. New Series.

BOOKS AND PAMPHLETS RECEIVED.

Researches upon the Venom of the Rattlesnake: with an Investigation of the Anatomy and Physiology of the organs concerned: By S. Weir Mitchell, M. D., Lecturer on Physiology in the Philadelphia Medical Association. Pp. 145. 4to Washington City: Published by the Smithsonian Institution. Jan., 1861. New York: D. Appleton & Co. From the Smithsonian Institution.

Quarantine Regulations as approved by the National Quarantine and Sanitary Association of the U. S. 1860. Pp. 39. Boston.

Colloquy on the Duties and Elements of a Physician: By Thomas S. Powell, M. D., Professor of Obstetrics in the Atlanta Medical College. Pp. 68. 24mo 1860.

A Report on Epidemics and Endemics: By O. C. Gibbs, M. D. of Frewsburg, N. Y. Pp. 24. Philadelphia: 1861. From the author.

A Treatise on Human Physiology; designed for the Use of Students and Practitioners of Medicine: By John C. Dalton, Jr., M. D., Professor of Physiology and Microscopic Anatomy, in the College of Physicians and Surgeons, New York, etc., etc., etc. Second edition, revised and enlarged: with 271 illustrations. Pp. 690. 8vo. Philadelphia: Blanchard & Lea. 1861. From Mr. T. L. White, bookseller, 106 Canal street, N. O.

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MEDICAL AND SURGICAL JOURNAL.

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ORIGINAL COMMUNICATIONS.

ART. I.—*Cæsarian Section:* By I. J. NEWTON, M. D., Hamburg, Arkansas. Reported by J. M. OWENS, M. D.

INASMUCH as the Cæsarian section is an operation, in itself so simple, and one so generally known to the profession, I deem it unnecessary to report the case under consideration in detail; but, however simple the operation; however well-known to the profession, it is nevertheless an operation that has ever been attended with fearful mortality; and when the mother and child are both saved, as in this case, it can but be regarded as preëminently successful.

On the morning of the 7th January, I was called to see Ann, a negress, belonging to Col. Waddell, of Hamburg. I found the girl in labor with her first child. After an examination, I found that it would be impossible to deliver the woman *per vias naturales*, owing to pelvic deformity. The head could not even enter the pelvis; it could not pass the sacral promontory. The deformity resulted mainly from curvature of the lumbar vertebræ, the promontory of the sacrum jutting into the basin of the pelvis, and partly from depression of the pubic bones, making the space between those bones so small, as to altogether, in my judgment, to preclude the idea of craniotomy or evisceration.

Viewing the case in this light, I requested Drs. Dickinson, Wilson, and Owens, to see the case, who, after an examination, agreed with

me that the Cæsariam section was the only method that afforded any chance or hope for the successful delivery of the mother, or preservation of the child.

To make this report a brief one, as it should be, I will only add, that the operation was performed in the usual way, and the woman was delivered of a male child, at full term, in a state of asphyxia; the child, however, revived after an hour's perseverance in Marshall Hall's method of resuscitation. The after treatment consisted of opium in full doses, for several days, with mercury in sufficient quantities to produce slight ptyalism.

The mother and child are well, and there now remains no visible trace to show that the child is a Julius Cæsar or Æsculapius, or that the mother has been the subject of hysterotomy.

HAMBURG, February 7th, 1861.

ART. II.—*Contributions to the Pathological Anatomy and Natural History of Yellow Fever:* By BENNET DOWLER, M. D.

NUMBER FOUR.

[EVEN as late as the great epidemic of 1841, Broussais's pathology and therapy of fevers were probably more generally received and sanctioned in practice in New Orleans than in Paris itself. Uniformity, however, there was none. If some who viewed yellow fever as a pure gastric or gastro-intestinal inflammation, treated it with gum-water, and repeated venesections carried to fainting, and followed with cups and leeches, the hepatic pathologists, on the other hand, gave large doses of calomel and active cathartics to expel bile. Some, abhorring these active measures, and viewing this disease either as a nervous one or one of debility only, gave opium and quinine, or porter,* brandy and wine. Others, viewing the

* September 25th, 1841. An intelligent and experienced physician, by no means bigoted in favor of any curative method in yellow fever, kindly showed me a large number of patients whom he was treating for this malady by giving each, as he said, on an average two bottles of porter per day. Nevertheless, the doctor was reputed to be an advocate of the Broussiasan school. Many similar instances might be mentioned, not as reproaches, but as proofs of independence in theory and an irrepressible desire to save life by a surer plan than that of depletion.

cause, pathology and mode of treatment as wholly unknown or hypothetical, gave no medicinal agent whatever, preferring placebos, ptisans, sugared water and gummed solutions, while others restricted their therapy to one or more prominent symptoms as they arose, without adopting any systematic method whatever.

It did not require a quarter of a century's experience to convince enlightened and unprejudiced minds of their imperfect knowledge of the ætiology, pathology and therapy of this malady. Nevertheless, this disease appears to be the true type of the entire group of continued idiopathic fevers, the centre in which nearly all of the lines of the pyrexiæ meet—being the point of departure for the study of inflammatory fever (synocha) on the one hand, and typhus on the other—touching the borders of the phlegmasiæ upon one side, and exanthemata on the other. Yellow fever being more rapid in its course than synochal, phlegmasial, typhus, and typhoid fevers, must for that reason be preferred for the study of pathological anatomy. Its characteristic lesions, if it have any, are likely to be of a primary character, and not secondary—such as may be attributed to many maladies of long duration. Hence, yellow fever being a fundamental study in febrile pathology, ought to be investigated with the utmost attention.

It is not the purpose of this series of papers (only a small portion of which will appear in this journal), to prove either that this fever has lesions common to other fevers or that it has lesions peculiar to itself; nay, it is not intended to show that it has any lesions whatever, as its sole animus consists in giving a faithful protraiture of facts without selection, classification, or theory, leaving the reader free to make deductions according to his own judgment—a course which is fully justified on the ground that the mere opinions which have been hitherto advanced upon this subject, being variant and even contradictory, must be corrected, if that be possible, by a rigid and patient narration of facts and observations. It is moral and professional cowardice and neglect of duty to abandon an investigation of such vast import to the well being of society, because of its difficulties and the labor it involves. Of opinions there have been enough and to spare. In facts there is hope for the future, and even deferred hope is better than changeful and visionary theories.

If, therefore, the facts enumerated in these papers be wholly negative in regard to the special pathological anatomy of yellow fever,

this information would not be valueless. Should I be able hereafter to publish some hundreds of autopsies, including a series on each of the fevers of the South, I will be wholly indifferent whether they prove any theory or not.

From the brevity of these published autopsic histories (which are mere synopses) few readers will be able to comprehend the amount of labor which was required to enable me to describe not only what I saw, and what was originally written, but what has been suppressed for brevity's sake or implied under three words, namely, "*other organs normal.*" To name all of the glands, lymphatics, nerve-plexuses of the centres, and every organ internal and external, would have been both tedious and useless for the reader, though necessary for the dissector himself. When there is no assistant, the time required for a post-mortem examination, note-taking, copying, and revision (not to mention abbreviation), will, perhaps, average four hours to each cadaver, though as many minutes will be sufficient to make an autopsy after a certain fashion too often witnessed.]

XXX.

C. H., female, born in Ireland, aged twenty-five, last from St. Louis, resident in New Orleans ten months, sick four days, admitted August 28th, at eleven o'clock, A. M., and immediately died, after less than one hundred hours' illness.

Dissection, thirty minutes after death.

Body, warm, large, muscular; the chest and entire trunk capacious; the abdomen free from gaseous distention; the fatty tissues, abundant, being about an inch thick, over most part of the body, and every where free from serosity and flabbiness; muscles, brawny, firm, and red; the eyes, skin, and fat yellow; the veins, distended; blood, dark and fluid; no cadaveric gravitation or injection; though, the organs of animal life were massive, a just proportion reigned throughout the vital organs, indicating a most vigorous constitution, with a sanguine temperament. The body presented no marks of blood-letting, cupping, or external treatment.

Head.—Brain, of good consistence, dotting freely with blood, when cut; the arachnoid, firm and opaque; the pia mater, vascular and infiltrated with an albuminoid liquid; serosity, about two ounces.

Chest.—Right side of the heart and its vessels, much engorged, as if by a strong force; heart, large and fat.

Abdomen.—The stomach, contracted in the middle, contained a turbid liquid, its mucous tissue a little softened at the cardiac end. The small intestine, including the gullet, blanched, the entire canal (excepting the stomach), did not contain perhaps more than two ounces of fluid, not having any traces of bile or fæces. The large intestine was uniformly contracted to a white cord, but little larger than the thumb, being bloodless and empty. The ileum had an intussusception, which, though firmly invaginating about four inches of the tube, was not materially changed in consistence or color. The liver, marbled with yellow, milky, and mahogany colors; its substance, bloodless, brittle, a portion of which, adjoining the gall-bladder, was red and indurated; its coats slightly adherent; the bile, thin, turbid, and yellowish. One of the ovaries, had an empty flattened, dull, white sack, as large as a dime (corpus luteum); several small, thin, transparent vesicles (folliculi Graafiani) occupied the folds of the peritoneum, near the fimbriated extremity of the fallopian tubes, partially imbedded in the stroma of the ovary; the bladder was contracted into a solid mass as large as a hen's egg, and empty. Other organs natural.

XXXI.

W. B., born in London, aged twenty-three, steamboat cook, resident four months, sick three days; first fever in his life; was taken, July 29th, with chills, spinal, muscular, and frontal pains; the latter which, according to his own words, "like a rapid succession of blows," run back into the head; vomitings; hot skin; nocturnal delirium; cramps. The next day these symptoms grew worse; took no medicine.

August 1, M.—Bowels regular, stools yellow; urine free; skin dry and rough; roseate flushings of the face and neck; abdomen indolent; tongue white on its dorsum, red on its edges; breath fœtid; taste bad; pain and dullness on percussing the left lung; eyes injected; pain in the forehead; pain in flexing and extending the left arm; pulse soft, full, regular; countenance animated; senses regular; appetite voracious; affirms that he suffers from hunger. Cups to the nape; cold to the head; hot foot-bath; ten grains blue mass; which removed the frontal pain.

2d, M.—Tongue moist, its dorsum yellow, its edges red; abdomen supple; respiration quiet; involuntary muscular twitchings of the

whole body during sleep; free from pain; skin dry, hot, branny; stools thin; no abdominal tenderness. Mind animated; apprehends no danger; boasts of a sound constitution. Treatment: anodyne enema; cold to the head; foot-bath.

3d.—Furious nocturnal delirium; skin slightly yellow on the chest, but rather cool and dry; face dusky red; eyes injected; respiration easy, not full, being rather abdominal; pulse soft, regular; tongue faintly red, clean; says he has no pain except from the blister (though this has not drawn); says he is weak only; rails at blisters, curses "blistering flies;" occasionally falls into delirium, picks at the bed-clothes, talks incoherently. Blisters to the legs; cataplasms; elix. vit.

4th, 2, P. M.—Breathing and tongue nearly natural; skin yellow; eyes red; pulse quick, soft; answers rationally, but acts like a madman; is tied down in bed; abundance of black vomitings, like dirty, diluted coffee.

5th, 4½, A. M.—Died.

Dissection, five hours after death.

Body warm, rigid; skin, eyes, and fat, yellow; muscles natural; purplish discolorations along the sides of the neck, face, body, and back; blood in the mouth; blisters appeared to be drawing.

Mouth, posterior fauces, gullet, trachea, and tongue natural, except small contusions or ecchymoses along the margins of the latter.

Head.—Serosity, two and a half ounces; tenacity of the arachnoid and pia mater, a strip of which, an inch and a half wide, suspended nearly the whole brain; subarachnoidal sanguineous infiltration, on the summits and sides of the hemispheres, almost concealing the brain, having a pink-red hue; vascular turgescency of the pia mater.

Chest natural; the lungs somewhat loaded with blood; sanguineous distension of the right cavities of the heart; the cavas discharged much blood.

Abdomen.—The stomach contained drinks only; its mucous tissue thick, firm, roseate, and dotted with punctiform injection; submucous vascularity; the small intestine contained blood; about six feet of the lower part of the ilium had its mucous tissue of a pink-red, firm, vascular, with arborized and dotted injection, with a development of the glands of Peyer in elliptical and circular patches; the cæcum and colon had similar alterations of color, etc., with disseminated, sanguineous points (congested solitary glands), most distinctly seen

from the serous or outside, being of a flattened form, from the size of a flaxseed to double that size.

Bladder empty; kidneys saturated with blood, but of good consistence. The liver moderately enlarged, had numerous spots (ecchymoses) of a sanguineous hue in its subserous tissues; its parenchyma rather tenacious, excepting its central portion, which was somewhat diminished in cohesion, but not soft; the whole inclining to yellowness; the gall-bladder contained a little viscid bile. Other organs natural.

XXXII.

July 29, 3, P. M.—H. F., born in Germany, aged twenty-eight, steamboatman, resident more or less in New Orleans for six years; five days sick; intelligence natural; has no pain; countenance animated; face and neck flushed; eyes injected; skin hot, dry, dusky, like sun-burn or tan; abdomen supple; throws up black vomit and mucosity; tongue moist, tumid, margins red; dorsum coated with white fur; thirst; fœtid, febrile odor; abdomen undistended and not painful on pressure; respiration panting; pulse quick, soft, small; moral, mental and physical sensibilities unimpaired; held the bowl when he vomited; brushed away the musquitoes, and spoke with ease.

30th.—Died tranquilly, at 7, A. M.

Dissection, four hours after death.

Body stout and muscular; skin and fat somewhat yellow; muscles normal and contractile; fingers and toes flexed and rigid; limbs nearly stiff; blood abundant, coagulable; skin free from purplish spots and stripes, except slight discolorations along the back.

Head.—Serosity, one to two ounces; brain firm, dotting freely upon cutting; the arachnoid firm; pia mater moderately vascular and turgid.

Chest.—Red petechial or hæmorrhagic points in the subserous envelope of the heart.

Abdomen, etc.—Mouth pale; tongue coated with white fur. The stomach of moderate size, its coats being thickened, contained a chymous fluid, with mucosity; the mucous coat at the cardia and along the lesser curvature, thick, red, indurated, loaded with blood, but peeling freely; the same appearances prevailed at the lower end of the ileum, and in some portions of the cæcum and colon the bowels contained a chylous or milky fluid; kidneys loaded with

blood; bladder contracted, empty; the liver of good consistence, inclining to a cork color; gall-bladder small, contained a small quantity of thick green bile. Other organs normal.

XXXIII.

G. M., born in Ireland; aged twenty; last from New York; resident one year; more or less sick ten days.

August 3d, M.—Talks freely and rationally; apprehends no danger; feels no pain; turns in, and rises from the bed with facility; has large scabby incrustations on the neck, breast, and lower lip, which he ascribed to prickly heat, and exposure to the sun; skin faintly yellow, dry, not hot, emitting a disagreeable febrile odor; hæmorrhages from the lower lip, and from the abdominal walls where cupping had been performed; tongue and respiration natural; pulse soft. Treament, sulph. magn. for an enema; sinapisms; cups.

In the evening he became delirious; urinated in his pitcher of drink; on being reproved for this act, he apologized by saying that he "must have been crazy."

4th, 9, A. M.—Expired suddenly in a convulsion. Thirty minutes after death the body hot; muscles of the trunk and arms contractile; light blows caused the forearms to be flexed on the trunk repeatedly, for three hours, though with diminished activity towards the last.

Dissection, three hours after death.

Body of moderate size, well proportioned; skin yellow, with purplish discolorations of the face and neck; bloody liquid in the mouth; abdomen depressed, hot; eyes yellow; fluid blood oozing freely from a little wound at an elevated point over the deltoid; fat yellow; muscles natural.

Chest.—Cavas and right side of the heart distended with fluid blood.

Abdomen.—The stomach contained liquid like gum water; the mucous tissues of the cardia a little softened; much dotted with red punctuations closely approximated, extending to half the stomach, giving it a scarlet hue, with some thickening; a few vascular points in the duodenum, and in the small intestine; the mucous tissue generally of a leaden hue; no fæces, except a white chylous paste; large intestine in several places contracted into cord; liver enlarged one-third, its coats feebly adherent; bile, about half an ounce, was green, tenacious; other organs natural. Head not examined.

XXXIV.

R P., born in Hanover, aged thirty-nine; resident in the United States fourteen years; last from St. Louis; resident in New Orleans four months; sickly for three weeks; but took no medicine but one dose of castor oil. He went to the hospital August 1, where, during the day, he was cupped over the epigastrium, had an enema, and took a solution of morphia and bi-carb. soda.

August 2d, M.—Rational when aroused by a question, but looks fatuitously, staringly, soon falling into a sleep resembling coma; the respiration, always laborious or stertorous, accompanied with groans; when he awakes his whole body jerks spasmodically; seems affrighted for a moment, but laughs at himself, and apologizes, saying he was asleep; feels no pain; talks with difficulty, but not reluctantly; white objects appear yellow to him; mind exhilirated; face dusky; chest lemon-colored; eyes yellow, injected, ecchymosed, prominent, closing naturally when asleep; tongue tumid, dry, red, smooth, tremulous, protruded with difficulty; pulse small, soft, irregular, rapid; vomits water mixed with blood, and a substance of a dark fawn color, mixed with mucosity; nasal hæmorrhage; trembles on rising; breath offensive; resonance of the chest diminished; cold applied to the forehead. The coma and difficulty of respiration increasing, he expired at half-past seven, P. M.

Dissection, fifteen hours after death.

Body large; muscles much developed, natural; fat abundant and yellow; eyes yellow; abdomen distended by gas; purplish discolorations of the back; blood abundant.

Frontal sinus filled with a yellow mucosity. The mouth, tongue, palate, and posterior fauces, pale. The larynx and glottis red; this color extended to the air-passages, not diminishing on maceration.

Head.—Vascular turgescence of the dura and pia mater, and of the cerebral substance; choroid like a bunch of transparent grapes of different sizes, but perfectly round, filled with serum; serosity about five ounces, chiefly in the arachnoidal sack; subarachnoidal albuminous exudations.

Chest.—Lungs but little crepitant, engorged with blood, their weight augmented about three times, without hepatization, yet cutting like jelly; several bloodless pleural adhesions; heart large, its cavities dilated, flaccid, itstissues generally pale and brittle, sub-

serous petechial or ecchymosed dottings on its exterior, enlargement and induration of one of its semilunar valves.

Abdomen.—Omenta much developed. The stomach contained black vomit, of a dark brown color, mixed with specks of a charcoal hue; the coats generally dark, as if dyed with this matter in the stomach; the mucous coat firm, velvety, but little wrinkled, nearly bloodless, tenacious, peeling, but dotted at the cardia with bloody points; the jejunum contained slate-colored black vomit; the submucous tissue of the large intestine contained several patches of sanguineous infiltration; the intestines inclined to a slate color, contained much gas, but no bile or fæces; the liver large, of good consistence, its parenchyma yellowish, dotting with blood from incisions; the gall-bladder contained green bile; the mesenteric portion of the peritoneum had several patches of rough granulated surface. Other organs normal.

XXXV.

B. G., born in New York city, aged twenty-eight, last from Cincinnati, resident seven days.

August 3d.—Coma; speechless. Treatment: cataplasms; cold to the head; hot foot-bath.

4th, 10, A. M.—Died.

Dissection, thirty minutes after death. In ten minutes after death the entire body was so completely rigid, that it could not be flexed; it was moved and turned by the wrist, without bending the forearm; it was very hot; of medium size; skin, eyes, and fat, yellow; abdomen concave; blood fluid, coagulating strongly, with a buffy coat; muscles normal.

Head (opened last).—Blood from the sinuses and dura mater about two ounces; serosity, chiefly in the arachnoidal sack, four ounces; vascularity of the pia mater; tenacity of the arachnoid, with a sub-infiltration or bloody exudation along the convexity of the hemispheres; substance of the brain unaltered.

Chest.—A few reddish spots in the sub-serous tissue of the right ventricle of the heart; liquor pericardii yellow.

Abdomen.—The lower third of the gullet denuded of its epithelium in long stripes, leaving a raw, red, injected surface; the mouth, fauces, and upper part of the gullet natural. The intestines, with some exceptions, contracted into small, round cords, including the cæcum, colon, and rectum. Stomach natural, except excessive

mamillation, contained about twelve ounces of thick, jet-colored black vomit, untinged with bile or blood; this glossy, black liquid, abounded in portions of all the intestines, where not contracted, assuming, in some places, the consistence of an extract, and on following the canal a considerable distance, it became greenish; the mucous tissue of the ileum was, in its lower third, dotted with red points, and the sub-tissue injected. The liver small, loaded with blood, its consistence and color but little changed, until after maceration, it assumed a flax-seed hue; the gall-bladder thickened, infiltrated, contained about a teaspoonful of bile; the ducts in the parenchyma contained bile of a yellow color. Other organs unchanged.

XXXVI.

July 29th.—E. D., a German, aged nineteen, last from New York, resident two years, sick two days, stout, fat; had chills at first; headache, vomiting, hot skin quickly followed. He took one purge, but no other medicine. Senses natural; mind anxious; face and neck flushed with a dirty red; eyes injected; skin hot and of a dusky hue; tongue white, bordered with red; thirst; abdomen soft; respiration panting, imperfect, unequal, accompanied with dull pains in the chest; headache continuous; pulse corded, hard, regular.

30th, 1, P. M.—Black vomitings; wants water and food, but refuses ice; said he "had black vomit in the night, but is not sick now;" walked about the ward in the morning; skin dusky and cool; said my "hand felt hot to him;" the upper side of the limbs and trunk much cooler than the lower; eyes injected; breathing imperfect; pulse quick, soft, irregular; external veins collapsed; tongue tumid, red; its protrusion difficult, requiring repeated trials. In an hour he became delirious; got up, but soon laid down and began to pick the bed clothes. Treatment: cups; poultices; foot-bath; chlor. ox. sod.

31st.—Delirious; tied in bed; laborious respiration. Death at 1, P. M.

Dissection, twenty hours after death.

Body somewhat rigid; abdomen distended; bloody foam in the mouth, nostrils, and trachea; muscles large and natural; skin and eyes moderately yellow.

Head.—Serosity two ounces, chiefly at the base and in the ventricles; arachnoid tenacious, sub-infiltration of this tissue with serum; vascular turgescency of the pia mater; substance of the brain natural, dotting freely upon incision.

Chest.—Mucous tissue red; heart enlarged, flabby; right auricle of a dark pink red; the heart contained fibrinous polypi; lungs loaded with blood.

Abdomen.—Intestines distended with gas; the ileum loaded with black vomit; the stomach and bowels natural, except some isolated reddish spots in the mucous tissue; kidneys and spleen enlarged, and loaded with blood. The liver natural in size and cohesion, was of a dull yellow color; the gall-bladder small, contained a little thick, green bile. Other organs natural.

XXXVII.

August 13.—S. C., born in Italy, aged thirty-five, steamboatman, last from Mobile; died after a week's sickness.

Head.—Opacity and firmness of the arachnoid; vascular turgescency of the pia mater, with increased serosity.

Chest.—Left lung universally adherent by a strong, almost tendinous and bloodless tissue; right lung slightly adherent, all without injection or recent exudation.

Abdomen.—Softening, and bloody dottings at the cardiac end of the stomach, the residue of the mucous tissue being of a leaden color; this tissue in the duodenum, and upper portion of the jejunum, finely punctured with coal-black points, so small that a dime would probably cover 150 or 200 of them *(black vomit petechiæ);* these embedded in this tissue did not fade upon washing or friction, not being removable unless the tissue be disintegrated; the residue of the small intestine had numerous well-defined elliptical and circular patches, some being pustular and elevated, some depressed, softened, excavated, consisting of cells like a honey-comb, though round and not much larger than grains of barley, others being oblong, like grains of flax-seed, and nearly white, obliterating the *valvulæ conniventes,* augmenting in number on approaching the ileo-cæcal valve, being unattended with vascular turgescency, and redness; no change in the muscular and serous coats. The pustular elevations were brittle or softened; in many patches the pustules appeared to have given place to regular but small excavated ulcers. Liver of a pale dirty yellow color; bile thick and yellow. Other organs natural.

XXXVIII.

L. E., a German, aged twenty-eight, shoemaker, last from Bremen,

resident eight months, admitted July 15th, sick four days; was cupped and blistered, and had, as his physician and others said, every symptom of yellow fever, except black vomit, which latter symptom, however, one of the nurses observed before death, on the 19th. A medical student who attended him, observed in the last stage delirium, coma, difficult, noisy respiration.

Three hours after death, body hot; universally rigid; moderately yellow; stout, muscular; dotted on the surface with *mosquito petechiæ.*

Dissection, seventeen hours after death.

Body cold; muscles natural; arms supple; abdomen convex; skin, eyes, and fat, yellowish; external cadaveric injection of dependent parts; expression sad.

Head.—Serosity two ounces; the pia mater and substance of the brain, in the higher as well as in the lower parts, vascular, turgescent; arachnoid tenacious; a strip of these two membranes as wide as two fingers suspended the half of the brain without rupturing.

Mouth, gullet, and air passages natural, except a little reddening of the latter.

Chest.—The posterior parts of the lungs loaded with blood, supposed to be from cadaveric gravitation.

Abdomen.—Stomach; black vomit six to eight ounces of a tobacco color; the mucous cardiac thin, dense, silvery white, like the *fasciæ;* the residue of the mucous tissue tumid, marbled, with two or three longitudinal spots slightly excavated, and softened, without redness; the sub-mucous tissues of the duodenum was emphysematous, or puffed up with small bladders filled with gas (supposed to be a post-mortem change), some being as large as a hazelnut; the small intestines contained black vomit and healthy fæces, with some injected patches in the sub-mucous tissue, and two elliptical plates or pustular elevated patches near the valve; the ascending colon contracted, thickened, with mucous reddening; pustular patches in the cæcum, with redness. The liver, marbled with white, yellow, and brown; its convex portion loaded with blood, about two inches deep, the residue rather bloodless; the gall-bladder small, contained about half an ounce of thick, green bile. Other organs unchanged.

XXXIX.

H. M., Irish, aged twenty-one, sailor late of Com. Moore's fleet before

the town of Lerma (during the siege of Campeachy), where the yellow fever existed among the Texan forces; was taken sick July 6, 1843, one day before his arrival at New Orleans, and four before admission into the hospital, where he was treated with quinine, sinapisms, and a blister, and where he expired three days after, with delirium and black vomit, being the second reported fatal case of the great epidemic of this year. [J. R., of Maryland, was taken the same day, that is, July 6th, when as yet the present subject had not reached the city: both died on the same day. (I made an autopsy of this man also.) L. L., born in France, aged thirty-two, the first reported victim of the season, died four days previously.]

Dissection, eight hours after death.

Body stout; skin, adipose, and subconjunctival tissue, more or less yellow; free from blotches; muscles well developed and natural; blood coagulable, somewhat thick and dark.

Head.—Considerable serosity; brain of good consistence; there was cerebral vascularity, with much enlargement of the veins of the pia mater, with moderate turgescency.

Chest.—Right lung adherent at its base and posterior surface, by firm, red, injected tissue; the lower half of its parenchyma engorged, heavy, denser than a clot of blood, but less firm than hepatized lung, breaking without crepitation; left lung less engorged, but more crepitant.

Abdomen.—Stomach distended with black vomit, like a strong infusion of tobacco and coffee grounds, its mucous tissue wrinkled, and of a deep, dark red, firm; this color and consistence, with vascularity and dirty mucosities and chylous matter in small quantities, occurred in the lower part of the ileum, and in the large intestine; this latter intestine was more or less contracted; liver large, its coats feebly adherent; its parenchyma diminished in cohesion, rather anæmic, was of a dull cork color; the gall-bladder contained a green, thick liquid. Other organs natural.

XI.

J. B., Irish, aged thirty, resident ten years, drayman; sick two weeks with fever; occasional chills, pulmonary pain, difficult respiration; when admitted to the hospital, was supposed to have pneumonia; had taken quinine, antimony, morphia, and several doses of castor oil, from 12th to 17th July; after which he took no active medicine.

July 20.—Senses natural; manner hurried and uneasy; tongue moist, yellowish; vomits often; liver tender, tumid, greatly enlarged; respiration quick, painful, unequal; trembles; skin hot and moist; eyes injected; headache; pulse extremely rapid; turned on his face with facility to be cupped on the back of the head; arose to be bled from the arm; blood flowed well; soon after became delirious; vomited black matter like charcoal powder mixed with mucosity; skin assumed a purplish, blotched appearance, with some yellowness. Died about midnight.

Dissection, twelve hours after death.

Body stout, muscular; rigid, except the neck; the face was turned down on one side, which became nearly as black as a negro's; abdomen concave; skin, eyes and fat moderately yellow; muscles natural; a dark liquid running from the mouth.

Head.—Cerebral serosity, about six ounces, chiefly in the arachnoidal sack; collapsed vascularity of the pia mater; arachnoid thickened, increased in tenacity, one inch of these tissues suspending half of the brain; the dura mater adherent extensively to the convexity; the right side of the brain and its envelopes injected (the subject's face rested on the right side).

Mouth, tongue and gullet natural; the mucous tissues of the larynx and trachea, tumid, red.

Chest.—Right lung adherent to the costal pleura by red cellular tissue, filling the cavity completely, even tensely; about one-seventh of its parenchyma, at the apex, crepitant and elastic, but nearly black; the residue dense, increased in weight perhaps ten times, sinking rapidly in water; the pulmonary pleura thickened two lines or more, shaggy, spongy, tenacious, partly white, with some red stellations radiating from centres, and infiltrated with serosity, pus, and putrid, brown blood—the whole being an indurated, yet a brittle, gangrenous mass, lacking the firmness, cohesion and elasticity of hepatization; from three to four ounces of serous effusion in the pleuræ; the left lung adherent in like manner, was loaded with blood, being elastic and crepitant; the pulmonary arteries filled with fibrinous, adhesive cylinders or polypi, planted in the right side of the heart, which was distended with similar masses.

Abdomen.—Stomach nearly empty, its mucous tissue reddish, thin, and without rugosities; the intestinal mucous tissue every where pale, except in the cæcum, which was faintly red; spleen natural,

except great elasticity; liver enlarged, estimated at ten pounds—its parenchyma yellow, somewhat brittle, and bloodless—its large vessels dilated with clots of blood—its coats brittle; the gall-bladder contained about one ounce of serosity, like gamboge water. Other organs natural.

XLI.

C. C., a German female, aged thirty-six, last from St. Louis, admitted with black vomit, August 22d, and died at 5, A. M., next day.

Dissection, five hours after death.

Muscular and adipose tissue well developed; skin and eyes yellow.

Head.—Brain slightly softened, its envelopes vascular and tenacious, with some serous effusion.

Chest.—Mouth, neck, gullet, trachea, natural.

Abdomen.—Stomach and duodenum dotted with bloody points in several places, with injection of the submucous tissue; some similar patches in the small intestine, with chylous matter and small clots of blood; the large intestine loaded with the most healthy fæces, of good consistence; liver yellow, brittle, anæmic, its coats feebly adherent; the gall-bladder contained green bile, and several gray, friable, irregular gall-stones, nearly as large as grains of corn (maize), one as large as a partridge's egg. The pelvic and other organs natural.

XLII.

E. C., Irish, aged seven, last from New York, resident eighteen months, sick five days (during the latter period delirious, throwing up black vomit). Died at 6, A. M., August 25th.

Dissection, four hours after death.

Body plump; skin yellow; muscles natural; limbs flexible; abdomen depressed.

Neck.—Lymphatic glands enlarged moderately.

Chest.—Bloodless cellular adhesions of the pleuræ of the right cavity.

Abdomen.—Mesenteric glands enlarged; the elliptical patches of Peyer were hypertrophied from the size of a water-melon seed, to that of a senna leaf, being in some places pustular, generally red, often softened, thickly strewed on the mucous tissue of the ileum, diminishing gradually from the cæcal valve upward; the Brunnerian glands of the duodenum enlarged; the small intestine contained

both mucosity and black vomit; the stomach contained the same; its mucous tissue thickened, punctuated with a few bloody dots or ecchymoses, in several places excavated in minute points; kidneys enlarged; the liver of a dull olive yellow; the gall-bladder collapsed, contained a little greenish thin liquid. Head not examined.

XLIII.

M. A., a female, born in Ohio, last from Arkansas, aged twenty-three, resident about four weeks; had suffered some time from an intermittent; miscarried about the 15th of August, near the end of the month, took the yellow fever, but appeared to suffer little during her illness which lasted a week; but little fear was felt for the result of her case, until she began, very unexpectedly, to throw up black vomit. Treatment: during the last four days of her life, sod. bi carb.; morphia; porter; infus. cinchon. et serpent. virg. Died September 4th, 4, P. M.

Dissection, eighteen hours after death.

Body free from emaciation; cold; supple; muscles a little softened; eyes, skin, and fat yellow; corneæ glassy and relaxed; abdominal convexity; cadaveric congestion of dependent parts; faint putrefactive odor; groins a little greenish.

Venous System.—The cavas, the splenic, vena portal, hepatic, and pulmonary veins, though large, were totally empty; even the heart contained no blood; the blood appeared to have leaked or transuded (by exosmosis) from both veins and arteries, yet the body was far from being anæmic, as the lower parts were saturated with blood.

Chest.—The heart, like the muscles, diminished in firmness, was collapsed, non-elastic, flattened; the pleuræ peeled freely in large sheets; cadaveric infiltration of the posterior or spinal portions of the lungs.

Abdomen.—Stomach, much distended with gas, was about twenty inches long, and as many in circumference; thin; contained black vomit, and a lumbricoid worm; the heart, as well as the entire intestinal canal, presented few marked changes except such as might be referred to cadaveric alterations; the Brunnerian glands somewhat tumid; several contractions were found in the intestines alternating with enlargements which contained masses of healthy fæces; the latter were rounded, indurated, and as large as a hen's egg. A

little black vomit was met with in the small intestine; the kidneys were much enlarged; the spleen softened and hypertrophied about four times; the liver much softened, anæmic, was straw colored; the gall-bladder contained a spoonful of dark green liquid, much liquid of this color appeared to have transuded from this organ, dyeing the surrounding organs black.

The Uterus, enlarged six to eight times, was lined with a soft, spongy, velvety, mamillated, yet rather tough tissue, nearly one-third of an inch thick; the uterine walls thickened, and somewhat dark. Head not examined.

XLIV.

* *, a female, born in Germany, aged thirty-six, last from St. Louis, resident six months, sick seven and a half days; died with black vomit, August 23, 5, A. M.

Dissection, five hours after death. Body free from emaciation; skin, fat, and eyes yellow.

Head.—Brain a little softened, its envelopes tenacious, pia mater moderately vascular.

Chest, mouth and neck natural.

Abdomen.—Stomach and duodenum dotted with bloody points (ecchymoses) in the mucous tissue; sub-mucous injection in the form of arborizations. Other organs natural.

XLV.

J. E., born in Ireland, aged twenty-five, last from Cincinnati, resident in New Orleans three months, sick three days; admitted into the hospital September 25; took no medicine before admission.

Oct. 1st.—Senses regular; countenance calm; free from restlessness and acute pain; liver tender upon pressure; skin dry; breathing and circulation accelerated; gums and teeth covered in many places with black sordes; tongue dry and broad; thirst intense; urinates freely.

Oct. 2d.—Mind unclouded; vital forces failing; hæmorrhage from the nose.

Oct. 3d.—Slightly delirious during the last night (for the first time); attempts to get out of bed; lies on his right side, with the knees drawn up towards the chest; motionless; features tranquil, as if in a sleep; the respiration, becoming less and less perfect, retroceded from the chest to the windpipe—from the latter to the lips,

which ceased to move, gradually, at 2 o'clock, P. M. During his last hour, not a muscle moved, except those employed in respiration.

Dissection, five minutes, more or less, after death.

Body, of medium size, muscles normal, without being large; eyes, skin, and fat, of an almost uniform, pale lemon hue.

Head (examined last).—Slight, subarachnoid pink discolorations, with but little vascularity or injection. The substance of the brain natural.

Chest.—Liquor pericardii abundant, yellow; the left lung had extensive, white, bloodless, cellular adhesions; lungs crepitant.

Abdomen.—Omenta dark red, diminished in cohesion; stomach, moderate in size, contained about one pound of black vomit, free from any bloody tinge; coats of the stomach non-vascular, bloodless, being nearly white, with a faint lemon tint, in several places. From the duodenum to the cæcum, more or less black vomit, from the cæcum to the anus, portions of pasty, logwood-colored matter; no bile; neither faeces nor offensive gases. The intestinal follicles and glands natural. The ileum had a complete intussusception; one portion of the bowel had descended several inches into another, so firmly, as to require some force to disembarrass it, the invaginated portion being little changed. The bladder, distended; the peritoneum, with its subtissue behind the liver and along the spine for several inches, was red. The spleen, estimated at double size, was of an inky color, being softened. The liver moderately enlarged, its cohesion diminished, appearing rather brittle than softened, its coats slightly adherent, its color like dark iron, its substance and vessels engorged with thin, claret-colored blood. The liver being perforated with the finger, discharged, in a few minutes, three pounds and a half of blood, chiefly before its removal from the body. This blood did not clot firmly. The gall-bladder had undergone an oyster-like degeneration, being enlarged, thickened, its coats infiltrated; it contained a black, adhesive jelly, which could not be forced through the common duct, and which, when drawn out into a cord a yard long, lay on the floor, scarcely spreading out. Other organs natural.

XLVI.

J. K., an Irishman, aged twenty-one, last from New York, resident in New Orleans one week; admitted October 9th; sick two days. The day before his attack he worked on the Levee, wheeling up the

alluvial deposit. He took no medicine before his entrance into the hospital. The day after his admission, he took chlor. ox. sod. cum tinct. opii.; Oct. 11th, lime water and laudanum, for an enema; he was cupped and blistered—this being the entire treatment.

The day before his death.—Countenance dull and indifferent, though not "foolish," as the nurses aptly term the idiotic expression so common in yellow fever; answers every plain and direct question rationally, but often fails in a continuous or circumstantial story. He is positive that the only pain he feels is from the cups and blister; this occupies his attention far more than his malady. Skin yellow, moderately warm, being neither clammy nor dry. On all exposed parts he has musquito-petechial extravasations, with dark, red, circular spots, as large as barley grains; these are chiefly on the chest, at the opening of the shirt bosom, also on the neck, feet and ankles. Respiration quick; chest, on percussion, appeared natural; pulse small, soft, about 100; eyes suffused with red and yellow, but (even in the light) free from pain; pupils natural; no throbbing of the temporal arteries, or heat; no frontal, spinal or muscular pains; says his belly feels tight (costive); there is fullness of the liver, and tenderness from pressure or a deep inspiration; has hiccough; lies on his side for convenience in vomiting, holding a bowl for this purpose; vomits, very often, five or six times in an hour, and apparently without pain, effort, or nausea. The vomiting has continued for two days; the substance thrown up is small in quantity, about two or three ounces at a time, resembling coffee grounds and a strong infusion of that substance, together with a little thick mucosity, slightly tinged with blood, apparently from the windpipe or posterior fauces. The tongue clean, moist, natural; emits scarcely any febrile scent; turns in bed readily; seems easy; does not moan or complain; he requested the nurse pressingly, to cleanse his bowl; when any of the black vomit fell on the bed-clothes, he wiped it off with care. Twenty hours after the examination, and five days after the inception of his disease, he breathed his last, having in the meantime become slightly delirious.

Dissection, two hours after death.

Head.—Brain natural.

Chest natural, except some white, cellular adhesions between the costal and pulmonary pleuræ.

Abdomen, etc.—Mouth and velum palati reddish; gullet natural;

stomach empty, contracted, wrinkled, and very small; the mucous membrane, everywhere of a pale claret color, being thick, tough, non-vascular; the reddish color disappeared, gradually, on scraping away the inner portion of the membrane; the submucous tissue being of a dull white color. On peeling the submucous from the muscular coat, the latter presented a contrast of colors, the inside reddish, the outside whitish; this tissue, without any marked induration or puffiness, was unnaturally thick (hypertrophied). Both the small and large intestines presented a series of slight dilitations and firm contractions; the latter accompanied with thickening, blanching, solidity, and comparative non-vascularity. The large intestine was, with few exceptions, a consolidated cord; the enlargements contained masses of solid, black, adhesive fæces. The dilated portions of the small intestine contained ink-like black vomit, with slight softening of the mucous membrane in a few places. The lower portion of the ileum wasted, attenuated and collapsed. In the mucous tissue of the large intestine, and chiefly in the colon, were found from one to two hundred petechial dots, which were about as large as grains of barley, and perfectly circular, being quite isolated; some were elevated, others excavated, with well-defined margins, varying in color from red to black; no bile in the bowels; liver yellow, bloodless, brittle, its membranes easily detached; gall-bladder half an inch thick, firm, infiltrated with gelatinoid matter, intersected by multitudinous and very delicate white fibres, having an œdematous, oyster-like appearance, but discharging no serosity from incisions; subserous coat injected; the gall-bladder contained a few drops of yellow water; the spleen large, but of healthy consistence. Other organs natural.

[This patient, who took no cathartic, persisted in declaring that his "belly was tight." The contraction of the intestinal tube, and particularly that of the large intestine, together with the indurated fæcal lumps (scybala) in the latter, indicate a constipation of considerable duration, at the same time confirming the subjective symptom of which the patient complained from time to time. The smallness of the black vomitings (which were very frequent) may be attributed, with reason, to the extreme and firm contraction of the stomach, the cavity of which did not permit an accumulation exceeding a few ounces.]

XLVII.

H. H., born in New Jersey, aged twenty-seven, last from St. Louis, resident in New Orleans one week, sick two days, admitted September 6th; being addicted to ardent spirits, his treatment was not based upon antiphlogistics, but on opiates, etc. At eight o'clock, on the morning of the 10th, a little over five days from the commencement of his attack, he died.

Dissection, six hours after death. Skin, eyes, and fat, yellow.

Head (examined last).—Pia mater, excessively vascular, the calibre of its vessels enlarged; arachnoid, firm, thick, tough. A strip of these membranes an inch broad, suspended, without breaking, the hemispheres; they peeled entire from the deepest furrows of the brain without rupture.

Chest.—The heart was flabby, and contained yellow polypi.

Abdomen.—The stomach, pale, contained a turbid water; the cardiac third of the mucous membrane had disappeared; this denuded spot, as large as the hand, was traversed with a few vascular arborizations, the vessels lying bare for one or two inches around the borders of this denudation, the mucous tissue yellow, soft and ragged. The liver was small, indurated, and of a pale straw color; its substance anæmic; the gall-bladder contained a little thin, yellow liquid; spleen, very small; the urinary bladder contracted into a solid lump, the size of a hen's egg. Other organs, natural.

XLVIII.

G. S., an Irishman, aged twenty-two, resident in New Orleans one year, sick two days, admitted September 12th; was treated by bloodletting, cupping, etc. Died early on the morning of the 14th, after an illness of four days.

Dissection, thirty-six (?) hours after death. Eyes, skin, and fat, yellowish; muscles scarcely changed; abdomen elevated to a level with the breast bone; its muscles, as well as those of the body generally, were rigid; greenish discolorations of the skin in the groins.

Head.—The dura mater and pia mater, excessively vascular and loaded with blood upon the upper, as well as the inferior or dependent parts; a portion of the latter membrane and of the arachnoid, three-fourths of an inch wide, opposite the temporal suture, was detached; a knife-handle was thrust under it, and one hemisphere including half of the cerebellum, was suspended by it, without rupturing.

Sanguineous serosity, chiefly in the ventricles, one ounce; the substance of the brain of good consistence, was traversed by capillary vessels, loaded with red blood.

Chest.—The left lung, extensively adherent. The right and left auricles of the heart, together with the left ventricles, the valves of the aörta, including several inches of its serous coat, were of a deep pink color, supposed to be due to post-mortem dyeing.

Abdomen.—The stomach contained a few drops of bloody serosity, and some gas. The duodenum, large; the intestines contained a little whitish serosity; the whole tube, including the gullet and stomach, blanched; its consistence, good, being free from even cadaveric injection. Liver, nutmeg and straw color, with central brittleness, its membranes but slightly adherent; gall-bladder, distended with bloody serosity. Other organs natural.

XLIX.

H. V., born in Germany, aged twenty-one, last from St. Louis, resident in New Orleans one month, was admitted into the hospital September 20th, in the fourth day of his malady. During the first and second days after admission, he took small doses of calomel and blue mass. On the last day of his life (23d), he was blistered over the stomach, and took small doses of morphia and carb. ammon.

Dissection, fifteen hours after death.

Body cold; muscles natural; skin, eyes and fat yellow.

Head.—Dura mater and pia mater vascular and turgid with blood, alike on elevated as on dependent parts; arachnoid firm and slightly opaque; the brain was of good consistence.

Spinal Marrow.—Serosity from half an ounce to an ounce; near the cauda equina, a little softening, for half an inch.

Chest.—The mucous tissue of the air-passages claret-colored; the left lung adherent to the costal pleura near the spine, where the connection was loaded with blood; lungs crepitant. Each of the pleural cavities contained about four ounces of serosity. Both auricles of the heart had their serous membrane and valves claret-colored; in the left ventricle, and along the arch of the aörta, a delicate vermilion tint prevailed.

Abdomen.—The gullet had slight denudations of its epithelium; the posterior fauces reddish; stomach large; the serous coat, under the legs of the diaphragm, and for two inches below, infiltrated with

yellow gelatinoid exudation; along both curvatures, the same coat had several spots of extravasated blood. The cardiac third of the mucous tissue infiltrated with a reddish gelatinoid exudation, being puffy and like a bruised texture; the residue of this tissue had isolated ecchymosed or petechial spots of a dark red color, at intervals, not unlike mosquito-bites, together with from twenty to thirty dull whitish spots, varying from the size of a pea to that of half a dime; circular in shape, of a soft consistence, in some places excavated, but free from marginal thickening, redness, and surrounding arborizations. The stomach contained about one-fourth of a pound of dark liquid. The small intestines contained shredy black vomit; the lower portion of the ileum, for about twelve inches; had a thinning of the mucous coat; the whole tube nearly empty, and but little moist within. Mesenteric glands enlarged, red, with surrounding red discoloration. Liver enlarged about one-third, of a pale straw color, bloodless, with central loss of cohesion; its membrane adherent, except the size of the palm, at its fissure. Other organs normal.

L.

G. M., born in the District of Columbia, aged thirty, carpenter, resident six months; worked on the roof of a house in the hot sun, July 14th; slept well at night; awoke July 15th, but finding himself too weak and sore in all his muscles to rise from bed; had frontal pain; heat; thirst; cramps; no chilliness.

17th, 3, P. M.—Skin dry, hot, dusky; eyes injected; tongue dry, red, pointed, clean; gums and lips dry; respiration irregular, laborious; pulse weak, soft, small, quick; tenderness and tumefaction of the liver; forehead hot and slightly painful; temporal arteries throb; watery purgations; no urination for twenty-four hours; has felt nausea and a desire, without the power to vomit, until a few hours since when he vomited for the first time; senses accurate; mind dejected; conversation coherent. His malady is owing, he says, to exposure to the solar heat. Cups to the abdomen.

18th, 12, M.—Breathing quick, noisy, laborious; pulse quick, small, soft; musquito petechiæ; liver tender; skin warm, dry, bronze-colored; tongue tumid, dry, red, smooth, stained with blood; blood dried on the lips, teeth, gums, and membrane of the mouth; quiet, though not absolute delirium; answers plain questions. Treatment: Sinap., quinine, carb. am. Died tranquilly during the night.

Dissection, eight hours after death.

Body rigid; muscles natural; skin yellow, except where discolored by purplish blotches about the face, neck and dependent parts. Head not examined.

Chest.—Lungs collapsed; liquor pericardii, yellow.

Abdomen.—The mucous tissue of the stomach at the cardia marbled with sanguineous spots; the Peyerian and Brunnerian glands tumefied, the former in elliptical patches. Other organs natural.

[If there be no omissions in the notes of the post-mortem appearances of this case, it will be (as in some instances) very difficult, from an anatomical point of view, to account for the cause of death, since no strongly marked lesions were found. In fact, it may be doubted whether this be a case of yellow fever. For this reason, the synopsis made from the original notes of the symptoms in this case is more extensive than is consistent with the general plan which has been adopted in preparing for this Journal a small part of my researches on yellow fever.]

LI.

D. K., born in Ireland, aged twenty-two, resident in New Orleans fifteen months; admitted October 19th. The same day he had a foot-bath, and took a dose of castor oil; the following day he was blistered on the back of the neck and on the thighs. On the 21st, at noon, he expired. For two weeks before his admission, he had suffered from intermitting fever.

Dissection, fifteen minutes after death.

Body every where warm, except the tip of the nose and the insteps; black vomit running from the mouth and nostrils; from incisions in the scalp, much logwood-colored blood was discharged, clotting feebly; physiognomy sad, expressive of recent pain; subcuticular yellowness; cellular membrane and fat yellow, as was the serous tissues and fasciæ; chest apparently distended and tympanitic.

Head.—Dura mater yellow; serosity, an ounce or more.

Chest.—On opening this cavity, the air escaped with a hissing noise; the lungs were collapsed so as scarcely to fill more than about one-tenth part of the chest;* the mediastinum was largely infiltrated with an orange-colored exudation.

* The lungs, when collapsed during the agony (as sometimes seems to be the case), may leave a partial vacuum, so that on opening the chest the air rushes in with a noise, which latter does not ordinarily occur in the gradual collapse which commonly follows from exposing the cavity of the chest to atmospheric pressure.

Abdomen.—Stomach pale, contained half a pound of intensely colored black vomit; gray mammillation of its mucous coat; the colon and rectum were contracted to a solid cord, excepting a few portions, which contained indurated fæces; spleen black, of moderate cohesion, was enlarged three fold. Liver double the natural size; its coats adherent; its substance nearly all black, and much saturated with dark blood, which flowed from every cut; its surface had wavy lines and spots of a brown color; its cohesion diminished; its gall-bladder contracted, contained a few drops of black liquid. The sub-peritoneal tissue along both sides of the spine, behind the rectum, over the kidneys, in the posterior folds of the mesentery, and about the groins, was infiltrated with yellow serosity, like urine, five or six ounces of which had been effused into the abdominal cavity. The urinary bladder thinned, injected, adherent to the peritoneum above the pubes and on both sides as far as the groins, contained about four pounds of urine. Other organs natural.

LII.

S. F., born in France, aged twenty-eight, a peddler, resident in New Orleans seven months, last from Havre, sick two days, was admitted Sept. 21st. During his illness he was quiet, though somewhat delirious, chiefly at night; he vomited often, and at length threw up small quantities of black vomit; eyes red; skin slightly yellow; no hæmorrhages; bowels constipated. From the time of his entrance until his death, a period of four days, he was treated as follows: The first day, a foot-bath, an infusion of Peruvian bark and Virginia snake-root; the next day, twenty grains of quinine, a mustard plaster; the day following, quinine and morphia, a blister over the stomach; on the last day of his life, quinine, by injections. On the night of the 25th, he had a severe convulsion, with delirium and noisy respiration, and seven hours after, at four o'clock in the morning, he expired, one week from the commencement of his malady.

Dissection, eight hours after death.

Body of moderate size; abdomen depressed; jaws clenched; fingers contracted; trunk warm; extremities cool; skin, eyes, and fat, yellow; muscles natnral; blood issuing from the mouth and nose.

Head.—Dura mater loaded with blood; opacity of the arachnoid, below which there was a gelatinoid, semi-transparent exudation, with vascularity of the pia mater, some of its vessels being nearly

one-fourth of an inch in width, though collapsed; these latter membranes were so tough, a strip one inch wide suspended one half of the brain; serosity, chiefly in the ventricles and base of the brain, about three ounces; the consistence of the brain normal.

Chest.—Mucous membrane of the air passages somewhat red; the pleuræ of the lungs had on their inner surface a few bloody stains, or ecchymoses.

Abdomen, etc—Mouth, tongue, gullet, natural. Stomach contracted, contained a little gray liquid, being bloodless in all its tissues; its serous coat yellow; its mucous coat tough, and slate-colored. The small intestine, which was free from bile, stools, and everything but a little mucosity, had two firm intussusceptions; the superior portions of the bowel had descended into the inferior, three or four inches, the parts being thickened, and of a dark color, though not softened or brittle; some portion of the bowel was contracted into a small solid cord; other parts were small, flat, collapsed, yellowish and white. The great intestine was, in some places, as large as the arm, in others, contracted, cord-like, difficult to open with the scissors, with here and there an indurated lump of fæces, but without change of color or consistence; kidneys firm; bladder injected and much distended with turbid urine. Along the sides of the spine, a copious, yellow, gelatinoid, infiltration of the sub-peritoneal and cellular tissue; spleen moderately enlarged; liver discolored with yellow and milky waves; its coat peeling in large flakes; its substance brittle; the gall-bladder contained a green, gelatinoid, tough exudation; the mucous tissue of the duodenum, for about three inches, was dotted with black points (black vomit petechiæ) like a fine charcoal-powder, which could not be removed by washing, and which was deeply imbedded; the cava extremely large; the porta admitted the points of four fingers. Other organs natural.

The blood, which accumulated in the cavities during the dissection, to the extent of about three pounds, coagulated naturally.

LIII.

J. B., born in Ireland, aged twenty-seven, a sailor, resident in New Orleans two months, sick one week, admitted Oct. 15th. The same day he took infusions of eupatorium. On the 16th, his senses were good; he talked, laughed, inquired for a friend that had promised to visit him; observed that formerly he had suffered much from ague,

which had caused him to be dropsical, especially in his legs; yet he was throwing up black vomit, and passing the same per anum. He was cupped, sponged, and took magnesia. His breathing continued easy and his senses good, until the morning of the 17th, when, after lying speechless a few hours, he expired.

Dissection, five hours after death.

Body warm, moderate in size, without emaciation; muscles natural in color and firmness; abdomen depressed; skin, fat, and eyes, yellow.

Head.—Brain natural; serosity, chiefly in the ventricles and cerebellum, about four ounces; arachnoid milky, pia mater vascular, with moderate increase of tenacity in both; the mouth and neck natural, except much enlargement of one of the bronchial glands, which was infiltrated with calcareous matter, cutting like half-dried lime-mortar.

Chest.—Lungs collapsed, filling about one-tenth of the cavity, being pale, bloodless, but otherwise normal. The heart flabby, its cohesion diminished, its surface dotted with petechial patches; small points of extravasated blood beneath its serous membrane.

Abdomen.—The stomach contained clots of blood and turbid serum; its mucous coat wrinkled, free from arborizations, was of natural consistence, of a dull white color, except portions dotted with red, bloody, petechial points, which were few, minute, and isolated. The intestinal tube, including the gullet, of good color and consistence; a dark liquid found in the duodenum, and much black vomit, of the consistence of molasses, in the small intestine; the large intestine was, generally, contracted to one-fourth of the natural size, being, in some places, cord-like, containing ink-colored black vomit, in a solidified state; kidneys moderately enlarged; urine, about six ounces; bladder natural; sub-peritoneal infiltration, of a gelatinoid consistence, and of a yellow color, extending along both sides of the spine, chiefly in the course of the lymphatics. Liver enlarged about twice, engorged, having a slight purplish tinge, and two undulating white and yellow stripes, as wide as the finger, in the left lobe; gall-bladder nearly obliterated, contained a solid string of gelatinous matter an inch long, and half the size of a quill; spleen enlarged about ten times, being slightly increased in cohesion, but not engorged with blood. Other organs unchanged.

On removing the organs of the chest, about three pounds of blood collected in that cavity, and, in coagulating, formed two layers or

columns—the upper one was a mass of solid fibrine, of a dull, whitish color, semi-transparent; the lower one was red and solid, as usual, after bloodletting.

LIV.

A. F., female, born in Ireland, aged twenty-seven, resident in New Orleans one year, sick two days, admitted September 25th, in the advanced stage of yellow fever, being delirious; her delirium increasing to fury; she soon fell into a comatose sleep, in which she expired, on the morning of the 27th, after an illness of three days and a half.

Dissection, about thirty minutes after death.

Body, warm, free from rigidity; muscles massive and natural; fat, abundant, firm, and yellow; abdomen, depressed, slightly; skin, yellowish, with purple spots in the face and neck; the eyes, yellow, prominent, pupils dilated. Tongue, teeth, and fauces, natural.

Head (examined last).—Cerebral arachnoid, firm, resting on a reddish, buffy, semi-transparent exudation, with which the pia mater was infiltrated; the latter, vascular, and turgescent, having roseate patches upon much of the convexity and sides of the brain.

Chest.—White cellular adhesions of the pleuræ; liquor pericardii abundant and yellow; heart, and the great vessels of the right side, distended with fluid blood.

Abdomen.—Stomach distended with nearly two pounds of black vomit, its sub-mucous tissue being of a reddish mottled appearance [which disappeared after a maceration during the night]; the sub-mucous tissue of the duodenum, vascular; the large intestine contained a dark fluid, and was contracted in some, and dilated much in other portions, especially in the rectum; the latter partly denuded of its mucous membrane; urinary bladder, contracted to the size of a hen's egg, and entirely empty. Liver, somewhat chocolate colored, inclining to yellow, being firm, brittle, and bloodless; the gall-bladder, distended with an inky fluid.

Two ovarian vesicles, perfectly round, smooth, semi-transparent, filled with a pellucid liquid, the one as large as a pea, lying nearly within the grasp of the fimbriated extremity of the fallopian tube, the other more than half that size, being prominent, as if about to escape from, yet partly imbedded in the ovarium; the fallopian tube of this side was redder and more injected than the other; the uterus was

somewhat above the average size, and of a red coloration, with traces of hæmorrhage. Other organs normal. The body and all its tissues, free from disagreeable gasses, and cadaveric injection.

LV.

H. R., a creole of Louisiana, aged eighteen, sick three days, admitted August 25th. He never spoke after admission, having been insensible and comatose. On the fifth day of his disease, and the second after his admission, he expired.

Dissection, two hours after death.

Body, warm, flexible, yellow; the scalp covered with a blister plaster, which had not vesicated.

Head.—Dura mater vascular and turgid with blood; the arachnoid and pia mater firm and tough—the latter vascular, resembling close net-work, some of its vessels dilated to the size of a writing-quill; this vascularity extended to the ventricles, to the medulla oblongata, and a portion of the spinal cord; upon the convexity of the hemispheres, a pink coloration of this membrane prevailed; the ventricles contained about one ounce of bloody serosity.

Chest.—The left lung every where gorged with blood, and brittle in consistence, adhered firmly to the lining of the ribs; right lung, air-passages and heart natural.

Abdomen.—The stomach, which contained a large quantity of black vomit, was attenuated; its mucous tissue, chiefly along its lesser curvature, pink-colored, softened, and in some places shreddy and ragged; the duodenum reddish, inclining to a dark hue, having a black excavation in its mucous tissue as large as the finger nail; the ileum contained black vomit in some places, and in other places black vomit and blood, in large quantities; the mucous membrane of the small intestine, in several places, softened and claret-colored; mesentery vascular; the colon contained solid, dry, dark balls, or scybala; the liver, slightly enlarged, was firm, yet brittle and bloodless, being of a pale, variegated milky and yellow color; urinary bladder injected. Other organs natural.

Art. III.—*Case of Caries of Cervical Vertebræ:* By J. F. Bell, M. D., of New Orleans.

The history of this case is furnished from notes taken at the time the case was treated. That portion of the history previous to my taking charge of the case, is from my own observation, being an intimate friend of the family, and visiting the house frequently in that capacity.

I talked with the patient previous to his seeing any physician, and advised him to send for his family physician, at the same time refusing to give my opinion, but told a medical friend after leaving the house, my convictions in regard to the case, which afterward proved to be correct, with the exception that there was no disease of the mastoid cells, as I, at that time, expressed fears of.

A portion of the history is given four months after the removal of the seton; and finished eight months after its removal. Some six months after the last record, I heard from the patient who was still enjoying good health, and attending to his business, that of grocer. Mr. G——., æt. forty-five, a native of Philadelphia, a large muscular man, of a healthy family; but having some tendency in himself to strumous habit; never had articular rheumatism.

Sometime during the month of November, 1857, in sitting down, he struck his elbow against something behind him, at which time he felt considerable pain in the neck, which continued for a few days, and which continued to trouble him in a chronic form up to the first of February, 1858, when it became so severe as to confine him to bed, and cause him to ask medical advice.

At this time, the pain was situated high up on the right side of the neck and extended up over the mastoid cells of the same side; sometimes down along the anterior border of the trapezius, occasionally following the course of the sterno-cleido-mastoid muscles.

He was treated by several physicians for nearly four months for muscular rheumatism. Locally, the treatment consisted of tinc. aconite, acupuncture needles, blisters. etc. The constitutional treatment consisted of iodide potassium, preparations of iron, colchicum, etc. Exercise in the open air was insisted upon, notwithstanding the erect position, and especially the act of rising, gave him great pain.

About the 25th of May, I was requested to see him professionally in consultation, when, after a careful examination, it devolved on

me to give a name to his disease, which I called "Pot's Disease," or caries of the cervical vertebræ; proposing as a remedy, perfect rest in the recumbent position, and the seton; believing, as I did, that it would produce as much drain as his system would bear, and being inclined to first try a milder remedy than the actual cautery.

Accordingly, on the 28th of May, the seton was introduced between the spinous processes of the sixth and seventh cervical vertebræ, at which time I might say the patient was given into my charge—as the other physician lived some distance off and was busy, whilst I was near at hand and not so closely engaged; I refusing, however, to take charge of the case until the former physician had informed the patient's wife that he would probably die, as I then felt sure he would.

The other physician occasionally saw him, and always approved of the course I was pursuing.

The general treatment consisted in iodide potassium in small doses, cod liver oil, good brandy, and insisted on a nutritious diet; for, in connection with the other treatment he received previous to falling into my hands, he had been strictly dieted, until he was now quite feeble and having night-sweats.

Under the treatment mentioned above, in connection with aromatic sulphuric acid, both internally, and by sponging the surface, these symptoms were soon checked. The iodide of potassium was continued but a short time, some three weeks, as I wished to preserve all the powers of his stomach.

The discharge produced by the seton was profuse; some three weeks after its introduction, he complained of some difficulty in swallowing, and breathed so badly when asleep, as to excite considerable anxiety in the mind of his wife, who was his constant attendant.

The difficulty of breathing, I attributed to pressure on the phrenic nerve where it passes through the inter-vertebral foramin, that of swallowing, I was unable to answer satisfactorily to myself.

About this time he commenced complaining of a tingling sensation in the back of his hands, which I attributed to pressure on some of the roots that go to form the axillary plexus of nerves.

The tingling continued for near three weeks, after which it, and the difficulty in breathing, gradually disappeared.

A slight cold, contracted at this time, produced a cough, principally laryngeal, but which I heard with fear, as he was rather in-

clined, as previously stated, to disease of the lungs. I also feared evil consequences on the disease of the neck. It was allayed, however, by mucilaginous lozenges allowed to dissolve slowly in the mouth.

The seton remained between twelve and thirteen weeks, and until within a few days of the time it was removed, the discharge continued abundantly. Only once during the time, was there any unpleasant odor, which was readily removed by a wash of chlorinated soda.

At the time the seton was removed, there was no pain on the right side, but a slight one on the left, which disappeared in the course of three weeks.

He was now allowed to sit up, at first twice a week, afterward every day, the head being supported by an instrument I had made for the purpose, which consisted of a steel frame to fit the shoulders, with an upright curved over the head from behind; the head being suspended to this by means of two straps, one passing under the chin, the other beneath the occiput.

During the time the seton remained, he was only up when it was positively necessary to have the bed reärranged, and then his head was supported by the instrument above named, and during the most urgent symptoms I never allowed him to arise, only when I was present.

I had never seen, nor heard of an apparatus like the one I have described, but after describing it to my friend, Professor Gross, he informed me he had used something similar.

For some weeks after he commenced walking about, there was considerable œdema of the feet and legs; this gradually disappeared, and his general health was better than it had been for several years.

Four months after the removal of seton.—The only visible deformity to a casual observer is, that his head seems to have settled down between his shoulders. A close examination, however, will show a marked depression in the cervical region, with a seeming want of several of the spinous processes; that of the seventh cervical vertebra still remains; the atlas and axis seem to be more prominent than normal.

The neck is perfectly stiff so far as rotation is concerned, the antero-posterior or nodding motion still remaining.

His neck is considerably shorter than before he was attacked, his height having decreased an inch. The pomum adami is found in the

angle of the inferior maxillary bone, so that he opens his mouth with difficulty. The teeth cannot be separated more than three-fourths of an inch, and would not be that far, but for the fact of his having artificial teeth both above and below, which are short. He swallows with some difficulty; says his food seems to get into a place, at first, which is too large for it, and where it has a tendency to remain; this is gradually being remedied by Nature wisely adapting herself to circumstances.

The above case is unique as regards age, at least so far as I know, never having seen the disease in one so old, nor have I seen any account of it so late in life. In the late valuable work of Professor Gross on Surgery, he says in regard to the age of the patients, "I have met with it so early as the fifteenth month, and cases are occasionally observed as late as the thirtieth or thirty-fifth year, but these are rare.

Another peculiarity of the case was connected with an affection of his heart. For about three years he had an intermittent pulse, with a perfect cessation of the heart's action at the time of intermission; any excitement always increasing the difficulty.

On percussion there was dullness over a larger space than normal for the heart; both of the heart sounds were normal. The intermission was tolerably regular, one breath wanting in every four or five; occasionally it was not so frequent. The impulse against the chest was decidedly increased.

During his confinement to bed, and about the time the tingling was disappearing from his hands, he could lay perfectly quiet on his back, and tell when there was an intermission in the pulse, by a severe pain felt, at each intermission, in his neck; this state of things lasted five or six days, then passing off, never returned. This may have been simply a coïncidence; if not, I am unable to give a philosophical explanation of it, but would kindly receive one sustained by pathology and common sense.

Eight months after removal of seton: He says the affection of his heart does not trouble him at all. Both sounds normal. The impulse against the chest greater than normal (I find nothing in my notes in regard to the point where the apex infringed against the chest, but feel confident, had it done so abnormally, it would have been recorded). There is still an occasional intermission of the pulse accompanied by a cessation of the hearts's action.

My reason for using the seton in preference to any other local remedy, I have already given. I have given no "formulæ" used in the case, because I consider recipes a curse to the profession. The medicines given were used to fulfill indications, for which purpose alone should medicines ever be given, and not because some doctor has *found* that certain formulæ are good in certain *named* diseases.

Art. IV.—*Historical Sketch; Professors and Alumni of the Medical Department of the University of Louisiana:* By Stanford E. Chaillé, M. D.

The history of an institution from which a large number of our subscribers have received their diplomas, and with whose labors and reputation all of them are familiar, needs no apology for its publication. The author's connection with the University, and his personal relations to the members of the present Faculty, forbid him to violate good taste by according to each that praise which is deserved, and which his own feelings prompt him to bestow. So reluctant is he to be classed among those, whose words of indiscriminate laudation, where self-interest is concerned, are framed to build up reputations which no *acts* have ever substantiated, that he invites the reader's attention to an article which has been compiled for reference rather than uninterrupted perusal, and which has been limited, for the reason suggested, to an unadorned record of names, with a statement of tedious dates, and a dry summary of statistical data.

The present Dean, Prof. Hunt, has permitted free access to the records of the Faculty, and has courteously contributed much information, and furnished every means in his power to render accurate the facts cited. From his Reports to the Legislature, I have freely quoted. Thanks are due to all the members of the Faculty for valuable aid.

The Medical College of Louisiana, which was the predecessor and parent of the present Medical Department of the University of Louisiana, was organized in New Orleans, in September, 1834. The

prospectus of that year announced that the session would begin on the first Monday in January, 1835, and would terminate four months thereafter. The founders of the College, who constituted its first Faculty, were

Dr. Thomas Hunt, Professor of Anatomy and Physiology;
Dr. John Harrison, Adjunct [Demonstrations in Anatomy by]:
Dr. Chas. A. Luzenberg, Professor of Surgery;
Dr. J. Munroe Mackie, Professor of Practice;
Dr. T. R. Ingalls, Professor of Chemistry;
Dr. Aug. H. Cenas, Professor of Midwifery;
Dr. E. Bathurst Smith, Professor of Materia Medica.

Professor Hunt, the Dean, delivered the first introductory lecture in the presence of the friends of the undertaking, and some eight medical students. In the circular issued by the Dean at the close of the session, it was deemed a cause of congratulation, that *eleven* students had matriculated during the course. During the first session, no duties were discharged by Dr. Harrison, in consequence of indisposition, and Dr. Stone demonstrated anatomy. Dr. Smith withdrew from the Faculty before the session began, and Dr. E. H. Barton was substituted.

A charter was granted to the Medical College by the Legislature, on April 2, 1835, "and in March, 1836, the first degrees in science ever conferred in Louisiana, were conferred by the Professors of the unendowed Medical College. This remarkable epoch in the scientific history of the State was succeeded by seven years of unrequited and unaided professional labors by the Faculty, for the advancement of medical science." On October 20, 1838, the Faculty established a School of Pharmacy for conferring the degree of Doctor of Pharmacy.

In 1843, the Legislature passed a bill granting a *lease* of a lot for ten years, on the following conditions: 1st. That "the Faculty of the College should discharge the duties of Attending Physicians and of Surgeons to the Charity Hospital, for the term of *ten years, without* compensation." [This condition was complied with, thereby saving the State $24,000, since it had, prior to this time, paid $2400 per annum for this service.] 2d. That the Faculty should "receive as students, without fee or charge of any kind for their professional services, one indigent person from each Parish in the State," etc. [Under this condition, and to the present time, one hundred and fifty students have been educated, at a cost for their education and di-

ploma of $280 each; making a sum total of $42,000.] 3d. "That the building erected on the lot should become the property of the State at the expiration of the said term of ten years." [This building was erected by the Faculty, and when it became the property of the State, its estimated value was $15,000.] The edifice erected is now designated the Law Department of the University of Louisiana, and in it the lectures of the Medical College were delivered during the session of 1843-4, and until 1847. Prior to the session of 1843-4, the lectures had been delivered in different years at different places—at No. 41 Royal street, No. 14 St. Charles street, No. 239 Canal street, and some always at the Charity Hospital, in which the present amphitheatre now the property of the State, was erected by the Faculty in 1844, at a cost of $2500.

"In 1845, the success and fame of the College induced the Convention to establish, by the Constitution, an University in New Orleans, and to constitute the Medical College, as then organized, the Medical Department of the University." In 1847, the Legislature appropriated a lot, and $40,000 to erect upon it a suitable building for the Medical Department; and since the session of 1847-8, this building has been occupied by the Faculty as designed.

In March, 1850, $25,000 were appropriated by the Legislature for a museum, apparatus, etc.; and subsequently, $6000 more for the same purpose. In 1857, $12,500 were given for repairing the buildings, etc.

The State has thus contributed in money to the Medical Department, $83,000.

On the other hand, the *pecuniary* benefits conferred upon, and the value of the property transferred to, the State, by the Medical Department, may be fairly estimated as follows:

Attendance upon the Charity Hospital for ten years, $24,000; amphitheatre in the same Hospital, $2,500; west wing of the University buildings, $15,000; library, apparatus, preparations in the museum, etc., $20,000; repairs, insurance, etc., on the College edifice, belonging to the State, $16,000; education of indigent students, $42,000—amounting in all to $119,500.

"Besides these contributions to the cause of medical education, and to the establishment and advancement of the Medical Department of the University of Louisiana, the Faculty have matriculated four thousand and twenty-four students in the State Medical College.

Each student expends annually (at a very moderate calculation), in board, lodging, books, clothes, etc., $500. Multiply 4024 by $500, the expenses of each, and the result is the sum of two millions twelve thousand dollars, which has been introduced into and remained as part of the wealth of the State, through the agency of the Medical Department alone."

Although all the appropriations of the State have been enumerated, the Legislature has at various times manifested its appreciation of the Medical Department of the University, and bills to augment its resources and increase its usefulness have from time to time passed one of the legislative houses without receiving the approbation of the other. This occurred in 1860, when a bill passed the Senate, but never reached the House in consequence of its adjournment. It is confidently believed that at no distant day the Legislature will respond favorably to the prayer of the Faculty and the report of the Administrators, who state that "the Faculty represents that the institution has outgrown its accommodations—that it stands in need of additional rooms for lectures, for dissection, etc., and it prays your honorable body to aid them in this respect; and further, to supply them with the means of enlarging and perfecting their museum, for the purposes of illustration, and of repairing and adding to the clinical apparatus, and of renewing and increasing their specimens of materia medica, etc."

Surely an institution which, originating twenty-seven years ago with a class of eleven students, has continued to augment annually its success and usefulness until it has surpassed in the numbers of its class nearly all of its competitors, now ranking as third in North America, deserves the patronage of the citizens of the Confederate States, the pride felt in it by every enlightened Louisianian, and the fostering aid of the State. With liberal and judicious assistance from the State, with the continued energy and ability of its Faculty, it is destined to surpass the enviable position it has already acquired, and to permit few if any of its rivals to outstrip it, either in the number of matriculates or in the educational advantages bestowed upon its graduates. What other city contains such hospital privileges — what other such facilities for dissection, as New Orleans? And after all, it is in the hospital and dissecting room that the medical student must make himself *really* a physician. Seven years ago, New Orleans contained less than two hundred

medical students, and these were all which were in the cities on the Mexican Gulf. In 1861, there were seven hundred medical students in Mobile and New Orleans, and of these, four hundred and four in the Medical Department of the University of Louisiana, which has pioneered the road that is destined to make our city a great and reputable medical centre.

On March 20th, 1861 (since the above was written), a bill passed both houses of the legislature, was approved by the Governor, and has become a law, by which the imposing and commodious edifice known as the East Wing of the University buildings, formerly assigned to the Academic, was transferred to the Medical Department. This building lays but a few yards distant from, and by the side of the central building now used by the Faculty. These two buildings will probably be united by suspension bridges connecting the corresponding stories, and will give accommodations unequalled by any similar institution in the world, for the anatomical department, museum, and library. In addition, there will be rooms to devote to the study of operative surgery and obstetrics, pathology, histology, microscopy, etc.; and each will be furnished with all the requisites needed to indoctrinate students in these essential and practical branches of their profession. Thanks to our legislature! the demonstrators will now be forced to turn none from their doors for want of sufficient room and vacant tables; and will besides be enabled to assign separate apartments to their confrères who may become matriculates of the University, and to furnish them agreeable as well as efficient facilities in the prosecution of their anatomical studies.

Every friend of the old University, and of education, will rejoice at this wise munificence of our legislature; which, with the inclination to add an appropriation for such purchases and repairs as are needed, deemed it wiser to reserve for *arms* that which otherwise would have been bestowed on science. Louisiana has done much for our profession, will do more, and all that is needful, in that future, not far distant, when "all the clouds that lower o'er our house are in the deep bosom of the ocean buried."

The names of the members of the first Faculty have been already detailed. It is now proposed to record the connection of each of the members of the present Faculty with this institution, and to append that also of the different Professors who have filled the respective

chairs. The order adopted has been made to accord with the dates of the appointments of the several Professors. The chair occupied by the professor longest in service, is the

Chair of Practice of Medicine.—Dr. James Jones, the present occupant of this chair, was elected to fill it on April 10th, 1839, having been transferred from the Chair of Obstetrics, which he had occupied since March 2, 1836, on which day he accepted the appointment to which he was elected by the Faculty, on February 26th. On June 14th, 1837, the duty of lecturing on clinical medicine was added to his duties as Professor of Obstetrics. His appointment to a professorship (February 26th, 1836), and his uninterrupted service in the discharge of its duties, antedates those of any of the members of the present Faculty; he has labored in the College during twenty-five of its sessions, and a large portion of the session of 1835–6 in addition.

The first Professor of Practice was Dr. J. Munroe Mackie, who discharged the duties of this chair during the first course. His connection with the College was continued until August 29th, 1838, when he resigned. During the three years preceding his resignation, he filled the Chair of Materia Medica, having made, in May, 1835, an exchange with Dr. E. H. Barton, who filled the Chair of Practice for four years. Dr. Barton, however, served the College six years, four as stated, and during the sessions of 1835, and 1839-40 as Professor of Materia Medica. To the latter chair he was appointed on April 10th, 1839, when he resigned the Professorship of Practice, to which Dr. Jones was then appointed. Dr. Barton resigned the Chair of Materia Medica, June 26th, 1840. Professors Mackie, Barton and Jones have been the only occupants of this chair.

Chair of Chemistry.—Dr. John L. Riddell, who now occupies this chair, received his appointment on Oct. 15th, 1836, and has discharged its duties uninterruptedly for twenty-five years. In addition to his duties as Professor of Chemistry, he gave one course of lectures (session of 1838–9) on Materia Medica.

Dr. T. R. Ingalls was the first occupant of this chair, which he resigned after the first session; and on June 8th, 1835, he was appointed Professor of Midwifery, the duties of which chair he discharged until his final resignation, on February 25th, 1836. Dr. W. B. Powell was the second occupant of this chair; he served but one year, resigning October 12th, 1836. Professors Ingalls, Powell and Riddell have been the Professors of Chemistry.

Chair of Surgery.—Dr. Warren Stone has discharged the duties of this chair since January 28th, 1837. He has, however, been connected with this institution from its first sessfon to the present day; yet, in professorial age, he is outranked by both Dr. Jones and Dr. Riddell. During the first and second sessions, and while Surgeon of the Charity Hospital, he discharged the duties now performed by the Demonstrators. On July 27th, 1836, he was appointed "*Lecturer* on Anatomy;" on January 28th, 1837, he was elected "Professor of Anatomy and *Lecturer* on Surgery; "and on May 31st, 1837, he became Professor of Surgery, for on that date it was resolved by the Faculty that Dr. Stone fill the chairs of both Anatomy and Surgery. He discharged the duties connected with both chairs until April 3d, 1839, at which time the chair of Anatomy was otherwise filled. Dr. Chas. A. Luzenberg was Dr. Stone's only predecessor in the chair of Surgery, which he occupied during the first two sessions and part of the third, *i. e.*, until January 28th, 1837, when he resigned, and was succeeded by Dr. Stone as "Lecturer on Surgery."

Chair of Obstetrics.—Dr. Augustus H. Cenas has filled this chair since April 10th, 1839. He was also the first occupant of this chair, discharging its duties the first session, and resigning on June 8th, 1835. He has thus served the College twenty-three years. The second course was delivered in part by Dr. Ingalls, who was succeeded on February 25th, 1836, by Dr. Jones, who continued in discharge of the duties of this chair until April 10th, 1839, when he was transferred to the Chair of Practice, and when Dr. Cenas became again connected with the College. The occupants of this chair have been Professors Cenas, Ingalls and Jones.

Chair of Materia Medica.—Dr. Gustavus A. Nott was elected to this chair on October 27th, 1848, and has filled it since that date. Dr. Nott also filled the Chair of Anatomy during two sessions, having been appointed April 3d, 1839, and having resigned the Professorship of Anatomy March 16th, 1841. He has thus served the College fifteen years. Dr. E. B. Smith was the first Professor of Materia Medica: he however never discharged the duties of this chair, which was filled by the appointment of Dr. E. H. Barton, who filled it also the sixth session, *i. e.*, 1839–40. Dr. Mackie was Professor of Materia Medica for three sessions, from that of 1835–6 to August 29th, 1838, when Drs. Harrison and Riddell were appointed to discharge the duties of

this chair, which they did during the session of 1838–9, Dr. Harrison lecturing on "Therapeutics," and Dr. Riddell on "Materia Medica." Dr. S. W. Ruff was appointed in 1840 to fill this chair. Dr. Ruff delivered two courses of lectures, and died in 1842. He was succeeded by Dr. W. M. Carpenter, who was appointed June 7th, 1842, served six years, and until his death, in 1848. Dr. Carpenter was the only graduate of this institution who has ever filled one of its professorships. He was graduated in 1836, *i. e.*, the first year in which diplomas were conferred by this College. Dr. Carpenter was succeeded by the present occupant, Dr. Nott, who was appointed October 27th, 1848. This chair has been filled by Professors Smith, Barton, Mackie, Harrison and Riddell conjointly, Ruff, Carpenter and Nott.

Chair of Physiology and Pathology.—Dr. Thos. Hunt has occupied this chair since his appointment, on March 28th, 1849. He was also the first occupant of the chair of "Anatomy and Physiology," having Dr. Harrison as his adjunct, to whom was assigned the duty of "Demonstrating Practical Anatomy." Sickness prevented Dr. Harrison from serving, and thus it was that Dr. Hunt appointed Dr. Stone to demonstrate anatomy. In May, 1835, at the close of the first session, Dr. Hunt resigned. He resumed his connection with the College in 1836, when, on October 15th, an especial chair was constituted by the Faculty, and Dr. Hunt was elected Professor of "Pathological Anatomy and Clinical Practice." The duties of this chair he discharged during the session of 1836–7; and at its close he again resigned, and did not resume his connection with the College until March 28th, 1849. He has thus served fourteen years. Dr. Hunt was the first Dean, and delivered, in 1835, the introductory and first lecture of this institution. He and Dr. Cenas are the only members of its first Faculty now connected with it. In April, 1852, he was elected "Dean of the Faculty," an office which he has continued to occupy to the present date.

The only other occupant of this chair has been Dr. John Harrison, who, during the first session, was an "Adjunct Professor;" in 1835, he was appointed to fill the Chair of Physiology and Pathology, and from that time until his death, in March, 1849, he discharged the duties of this chair. The duties of his successor, Dr. Hunt, were augmented by his appointment as "Professor of Physiology, Pathology, and Special Pathological Anatomy." Dr. Harrison was

connected with the institution fifteen years, and in addition to his usual duties, he assisted one year in discharging the duties of the Chair of Materia Medica, lecturing on Therapeutics during the session of 1838–9. He also performed the duties of the Chair of Anatomy during the session of 1841–2.

Chair of Anatomy.—On April 19th, 1858, Dr. T. G. Richardson was appointed to this chair. Dr. Richardson had filled the same chair, for two years, in the Medical Department of the Pennsylvania College in Philadelphia, and served two years as Assistant Demonstrator, and eight years as Demonstrator, in the Louisville Medical College. The duties of Professor of Anatomy were discharged during the first session of this College by Dr. Hunt, who was then "Professor of Anatomy and Physiology." Dr. Harrison held this title during the session of 1835–6, but Dr. Stone lectured on Anatomy. Dr. Stone did not, however, receive from the Faculty the appointment of "Lecturer on Anatomy," until July 27th, 1836. On January 28th, 1837, he was elected Professor of Anatomy, and discharged the duties of this chair until April 3d, 1839, when Dr. G. A. Nott succeeded. The latter filled it two sessions, resigning March 16th, 1841. During the session of 1841–2, Dr. Harrison discharged the duties of this chair. On June 7th, 1842, Dr. A. J. Wedderburn was appointed Professor of Anatomy, and filled this chair fourteen years. He was succeeded by Dr. J. C. P. Wedderstrandt on July 3d, 1856, on which day Dr. Wedderburn was appointed "Emeritus Professor of Anatomy." Dr. Wedderstrandt filled this chair during one session, and in addition to its duties, he was appointed by the Faculty, on October 25th, 1856, to lecture once a week on "Auscultation and Percussion." On April 4th, 1857, he resigned, and on April 22d, Dr. Josiah C. Nott was appointed his successor. He served one session, 1857–8, resigned in 1857, and now fills the Chair of Surgery in the Mobile Medical College. On March 20th, 1858, the Faculty tendered their thanks, etc., to Dr. Wedderstrandt for a course of lectures delivered by him in the Charity Hospital on Auscultation and Percussion, during the session of 1857–8. The present occupant succeeded Dr. Nott. The duties of the Chair of Anatomy have thus been discharged by Professors Hunt, Stone, G. A. Nott, Harrison, Wedderburn, Wedderstrandt, J. C. Nott, and Richardson.

Demonstrators of Anatomy.—Drs. Stanford E. Chaillé and Wm. C.

Nichols were elected by the Faculty on March 20th, 1858, and have served during the last three sessions.

The duty of demonstrating Anatomy was assigned during the first session to Dr. Harrison, then Adjunct to the Chair of Anatomy and Physiology, filled by Dr. Hunt. The duties were, however, discharged by Dr. Stone during the first, and several subsequent sessions. Dr. Wilcox demonstrated Anatomy for one or more sessions prior to 1839, in which year Dr. George Morgan was appointed Demonstrator by Dr. G. A. Nott, then Professor of Anatomy. Dr. Morgan served one session, 1839–40, died in 1840, and was succeeded by Dr. V. A. Drouillard, who also served but one session, 1840–1, and died in 1841. In 1841–2, Dr. Harrison discharged the duties of Professor of Anatomy, and had some assistants in the demonstrating rooms, but no regularly appointed Demonstrator. Dr. J. F. Eustis was appointed Demonstrator in 1842, by Professor Wedderburn, served two years, and until his death, in 1844. Dr. Y. R. Lemonnier was appointed October 28th, 1844, and served nine years. In May, 1853, Drs. Beard and Choppin were appointed by Dr. Wedderburn, and served three years. On July 3d, 1856, this office was made a Faculty appointment, and Dr. Gilbert S. Vance was elected to fill it. He resigned Dec. 30th, 1857, having served but one complete session; during the remainder of the session, 1857-8, his duties were discharged by Dr. Compton.

The present Demonstrators succeeded Dr. Vance, who died a few months after his resignation.

The following Schedule embraces many of the facts already detailed at greater length, and will enable the curious to observe, at a glance, who were the members of the Faculty for any year since the foundation of the College.

Session of	Practice.	Chemistry.	Surgery.	Obstetrics.	Materia Medica.	Physiology.	Anatomy.	Demonstrator of Anatomy.	Number of Matriculates.	Graduates in Medicine.	Honorary Degrees.	Graduates in Pharmacy.
1835	J. M. Mackie.	T. R. Ingalls.	Chas. A. Luzenberg..	A. H. Cenas.....	E. H. Barton.....	Thomas Hunt...	Thomas Hunt.....	Warren Stone	11	...	....	....
1835–6	E. H. Barton	W. B. Powell	do ..	T.R. Ingalls (& J. Jones after March 2, 1836)	J. M. Mackie	John Harrison ..	Warren Stone.....	do	16	12	2	....
1836–7	do	J. L. Riddell.	Luzenberg (and Stone after Jan. 28th, 1837)	James Jones	do	do ..	do	.....	22	8	....	....
1837–8	do	do	Warren Stone.....	do	do	do ..	do	—— Wilcox.....	26	9	....	....
1838–9	do	do	do	do	Harrison and Riddell.	do ..	do	.....	26	7	1	1
1839–40	Jas. Jones ..	do	do	A. H. Cenas	E. H. Barton.....	do ..	G. A. Nott.....	George Morgan.....	22	2	....	....
1840–1	do ..	do	do	do	S. W. Ruff.....	do ..	do	V. A. Drouillard	26	9	....	....
1841–2	do ..	do	do	do	do	do ..	John Harrison.....	.....	34	10	....	....
1842–3	no ..	do	do	do	W. M. Carpenter.....	do ..	A. J. Webberburn....	J. F. Eustis	38	6	....	....
1843–4	do ..	do	do	do	do	do ..	do	do	62	12	1	1
1844–5	do ..	do	do	do	do	do ..	do	Y. R. Lemonnier	92	15	1	....
1845–6	do ..	do	do	do	do	do ..	do	do	100	19	....	....
1846–7	do ..	do	do	do	do	do ..	do ...	do	166	28	...	....
1847–8	do ..	do	do	do	do	do ..	do	do	163	36	....	....
1848–9	do ..	do	do	do	G. A. Nott.....	do ..	do	do	141	28	....	....
1849–50	do ..	do	do	do	do	Thomas Hunt....	do	do and Hamilton	175	35	....	2
1850–1	do ..	do	do	do	do	do	do	do	188	39	....	2
1851–2	do ..	do	do	do	do	do	do	do	184	44	....	....
1852–3	do ..	do	do	do	do	do	do ...	do	219	70	...	2
1853–4	do .	do	do	do	do	do	do	C. C. Beard and S. Choppin...	192	52	....	....
1854–5	do ..	do	do	do	do	do	do	do do ...	226	54	....	1
1855–6	do ..	do	do	do	do	do	do	do do ...	223	65	...	....
1856–7	do ..	do	do	do	do	do	J. C. P. Webberstrandt	G. S. Vance	258	64	....	1
1857–8	do ..	do	do	do	do	do	J. C. Nott	do	276	67	....	....
1858–9	do ..	do	do	do	do	do	T. G. Richardson....	S. E. Chaillé and W. C. Nichols.	333	96	....	1
1859–60	do ..	do	do	do	do	do	do	do do	402	112	....	1
1860–1	do ..	do	do	do	do	do	do	do do	404	136	....	1
								Totals	4024	1026	5	15

N. B. Dr. Thos. Hunt served as Professor of Pathological Anatomy and Clinical Practice during the session of 1856–7.
Dr. L. M. Lawson served as Lecturer on Clinical Medicine, with the title of Professor, etc., during the session of 1860–1.
Dr. Lawson was appointed July 6th, 1860.

Total Graduates.....1046.

The list of the alumni of the Medical Department of the Universit of Louisiana, which succeeds, is the first complete one ever pul lished. So many pages of names have been introduced in this jou nal with reluctance; which, however, has been overcome by the con viction that they would be more than welcome to many of our read ers, and that such lists serve the profession at large, by the assist- ance they give in detecting impostors, and in other ways

Many annoyances have been encountered, and much labor ex- pended, to render this list as accurate as possible. It would be strange if some slight errors had not crept in, which it is desirable should be corrected in a future publication of this list, in more authoritative form, by the Faculty. It is, therefore, hoped that all interested will correct such errors as they may detect. With the assistance of our alumni, the list might be made perfectly accurate: deaths might be designated, the postoffices of those still living added, and such other information given as would be interest- ing to them. Their aid is respectfully solicited, and any informa- tion, contained in letters addressed either to the Dean of the Faculty or to this journal, will be gladly received, and treasured up for fu- ture use.

Graduates of 1836.

W. M. Carpenter .....
R. S. M. A. Delatule.....
Alphonse Delavigne.....
George Ed. French .....
Walter Fosgate.....
Alexander Hart .....La.
Albert Simeon Kostki.....
Ogden D. Langstaff .....
John C. Lawhon.....
John H. Lewis .....
F. J. B. Romer .....
Cornelius Traweek.. .....
Total.....12

HONORARY DEGREES.

Charles Barnes.....
Benj. O. Carpenter.....Ohio
Total.....2

1837.

W. D. Anderson .....La.
E. B. Donnelly .....La.
G. G. Harris.....Ala.
R. H. Leech.....La.
J. G. McGee.....Miss.
J. W. Mueller .....La.
W. Wilcox .....N.Y.
W. C. Williams .....Miss.
Total.....8

1838.

S. P. Baskin.....Texas
L. W. Boyer.....Miss.
George Colmar.....N. C.
Edwin Hughes.....Ohio.
T. F. Mitchell.....Ala.
G. M. Ormond.....Ala.
A. R. Remburt .....Ala.
S. S. Simmons.....Ala.
S. P. Smith .....Ala.
Total.....9

1839.

L. S. Beverley.....Ala.
L. P. Depoorter .....La.
W. B. Lindsay.....Miss.
John Macarty .....La.
D. L. Phares .....La.
James T. Reese..... ..Ala.
S. W. Smith.....Miss.
Total.....7

HONORARY DEGREE.

Thomas O. Meux.....La.
Total.....1

GRADUATE IN PHARMACY.

Mr. Serres.. .....La.
Total.....1

1840.

V. A. Drouillard.....La.
W. R. Sims.....Miss.
Total.....2

1841.

Reuben W. Fox .....La.
E. J. Harwell.....Ala.
Paul L. Hiriart .....La.
Joseph Jackson.....La.
Wm. O. King .....La.
J. Lovie .....Miss.
Robert C. Martin.....Miss.
A. G. Newport.....La.
A. T. Norwood.....La.
Total.....9

1842.

John Calderwood .....La.
Timothy Fay.....La.
J. P. Fox .....La.
J. B. Hacker.....La.
K. Kowaleski.....Poland.
John Nicholson.....La.
G. W. Pickering.....La.
W. M. Rainey .....Ala.
Benj. Shields.....La.
Joseph D. Smith.....La.
Total.....10

1843.

F. A. Bates .....La.
L. L. Bruur .....Miss.
Chas. F. M. Dancey...Ala.
G. W. Davis .....Vermont.
J. B. Pujol .....Cuba.
J. A. Williams.....La.
Total.....6

1844.

R. L. Armstrong .....Ala.
J. S. Bacon .....Ala.
Barlow Baldwin .....Miss.
M. H. Bird.....Ala.
Trasimond Dupuy.....La.
Caspar W. Field .....La.
James C. Grant...Canada.
W. G. Gordon .....Miss.
Robt. R. L. Hargis ..Miss.
George Harris.....La.
B. R. Holmes .... .. .Miss.
Levi Whitted .....Ala.
Total.....12

HONORARY DEGREE.

Bonemy Power .....
Total.....1

GRADUATE IN PHARMACY.

E. A. Davis .....La.
Total.....1

1845.

J. L. Call.....Fla.
Marsden Campbell.....La.
R. H. Chinn.....La.
Thomas Chowning....Miss.
J. W. Dickason .....Miss.
D. Raymond Fox.....Miss.
F. C. Gray.....Miss.
H. L. Graves.....Miss.
Thomas J. Heard ...Texas.
Allen McClatosh.....Ala.
W. A. McClure..... Miss.
C. H. Porter .....La.
R. H. Reading .....Tenn.
Clement Remes ....La.
V. H. Tugate.....Miss.
Total.....15

1846.

R. D. Barker.....La.
M. F. Bonzano.....La.
John M. Butt.....Miss.
Thos. Cody.....Mo.
H. M. Emerson.....La.
Henry Field.....Miss.
Winfield S. Gibson ...Miss.
Antonio M. Hidalgo..Cuba.
Francisco V. Labarria "
Alonzo Lancaster.....Miss.
D. A. J. Lee.....Miss.
Nelson K. Leslie .....Miss.
Charles McManus.....La.
G. T. M. McGahee ...Miss.
Charles Oliver.. .....Ala.
John B. Read.....Ala.
A. F. Scott..... .....Miss.
Joel K. Stevens.....Miss.
John B. Vandegriff.....La.
Total.....19

1847.

Francis Barnes.....La.
Thos. B. Benedict.....Miss.
Edwin D. Byrne .....Ala.
Milton C. Comer.....Ga.
Thos. W. Compton .....La
Thos. L. Cotten.....Miss
John B. Crockett.....Tenn.
James M. Downes.....La.
Alfred Dupérier .....La.
Floyd Earbee.....Ala.
Alonzo Fallen.....Miss.
Francis M. Fitzhugh .Miss.
Henry A. Fourniquet...La.
Samuel Y. Giffen.....La.
John M. Hadden.....Miss.
Wm. C. Hedrick.....Miss.
Irwin E. Lewis .....Miss
Joshua Marks.....La.
Wm. R. Norton.....La.
George P. Ogden.....Miss.
Joseph A. Piernas.....La.
Benj. B. Poellnitz.....Ala.
Wm. E. Rapp.....La.
Augustus Rowlett .....Miss.
Russell B. Shelby...Miss.
F. B. Shuford .....Miss.
Lewis A. Webb.....La.
Wm. H. Williams.....Ark.
Total.....28

1848.

Alexander Brissett .....La.
Wm. D. Burt ..... Miss.
P. N. Cilley .....Ala.
David Cohea.....Miss
Jas. L. Cole .....Miss
Robert H. Davis .....Miss.
Saml. L. Grier.....Miss.
Jas. F. Heustis .....Ala
Jno. A. Hollinger.....Ala.
D. D. Jackson .....Miss.
Thos. G. Jenkins.....Ala
John L. Johnson.....La.
N. E. Larche .....La.
Green B. May.....Miss.
I. Marchesseault...Canada.
Robert McCracken.....La.
Hardy McGuffee.....La.
Wm. H. Pickett.....Ala.
David B. Pierce.....La.
Wm. Reynaud.....La.
James G. Rhodes .....Tex.
Geo. Riddell.....N. Y.
Stephen C. Russell.....La.
John Y. Scott.....Miss.
Jas. Shiel.....La.
Achille Sigur .....La.
Thornton A. Snider...Miss.
Daniel C. Ward.....Va.
Wm. H. Winn.....Va.
Wm. Woodward .....La.
Total.....30

1849.

F. C. F. G. Allain.....La.
L. L. Alston .....Ala.
D. S. Ball .....Ala.
C. C. Beard .....La.
E. L. Beaumont.....Miss.
N. Boagni .....La.
J. A. Bradbury.....La.
J. W. Breedlove .....La.
W. T. Brown.....Miss.
T. S. Clapp.....La.
J. T. Coit.....La.
J. J. Crawford.....Ala.
W. R. Felder.....La.
A. Hamilton .....La.
C. Hamiln .....La.
J. J. Higginbotham ...Ala.
J. W. Hunter.....La.
W. Irvine.....La.
L. W. Jenkins .....Ala.
F. W. Marshall.....La.
W. L. Mixon.....Ala.
E. Randal.....Ala.
A. J. Reese.....Ala.
T. H. Redditt .....Miss.
W. D. Smith ..... La.
H. Steubinger.....La.
G. W. Thornton.....Ark.
G. S. Vance.....La.
Total.....28

GRADUATES IN PHARMACY.

J. A. Florat.....La.
W. Hare.....La.
Total.....2

1850.

R. H. Arrington.....Ala.
W. M. Baker .....Ala.
W. H. Bridges.....Ala.
Allen Bridges .....Miss.
C. S. Brunson.....Ky.
E. R. Brownell .....La.
Wm. E. Buie.....Miss.
A. Cantrelle.....La.
Ed. Canter.....La.
Saml. Choppin .....La.
J. H. Dorsey.....Miss.
J. F. Eckford .....Miss
Geo. W. Files.....Ala.
A. D. Ferguson.....Ala.
W. B. Foster .....Ark.

L. W. Greenleaf.....Miss.
E. T. Henry.....Miss.
M. H. Harper .....La
A. S. Harmon .....Miss.
A. R. Hutchinson.....Ala.
J. H. Jones.....Ala
W. L. Lipscomb.....Miss
W. T. Lockridge .....Miss.
J. S. Maples .....Ala.
J. F. McLeod.....Miss.
John T. McLean.....N. Y.
Thos. J. Otts .....Ala.
S. G. Perkins.....La.
Wm. Reynolds.....Ala.
James Ray .....La.
D. C. Rhodes..... ....Ala.
H. S. C. Smith..... ...Ala.
James T. Webb .....Ala.
Wm. G. Wright.....Tenn.
F. E. Wilson .....La.
Total.....35

GRADUATES IN PHARMACY.

Henry Goldman.....La.
B. LaPlace.....La.
Total.....2

1851.

F. B. Albers.....La.
C. R. Brumly .....La.
T. J. Burrows.....Ala.
Thomas J. Barron.....Ala.
Edward Barge.....Ala.
William Bonner.....Ala.
John Butts.....Ala.
W. S. Coates.....Miss.
T. Covington .....Miss.
J. G. Calcote.....La.
Thos. A. Davis .....Ala.
Frederick Egan .....La.
Wm. D. Fisher .....Tenn.
W. C. Gilson.....Miss.
G. T. Gates.....Miss
Milton Gary .....Ala.
R. F. Hereford .....La.
W. P. Hughes .....Miss.
A. M. Harman .....Tex.
James C. Hill .....La.
Stirling H. Jones .....Ala.
T. W. Jones .....Ala.
J. Bachman Lee .....Ala.
W. H. Lowe .....Ala.
Richard H. Lockhart...Ga.
J. C. Mills .....La.
J. F. Matchett.....Ala.
E. F. Nichols.....La.
John E. Paine .....Miss.
E. Pollard .....La.
R. T. Royston .....Ala.
Jos. S. Rash .....Ala.
Wm. C. Red.....Miss.
Philip M. Ryan .....La.
R. G. Stirling.....La.
H. C. Stewart .....La.
Stanton Slaughter.....Miss.
Wm. A. Thomas.....Ala.
T. V. Whicher .....Iowa.
Total.....39

GRADUATES IN PHARMACY.

G. LeRoy.....La.
L. A. W. S. Wolf.....La.
Total.....2

1852.

W. A. Anderson.....Miss.
Spencer M. Ball.....Miss.
Jno. T. Banks .....Ala.
Jno. F. Blevins .....Ala.
R. S. Booth.....La.
P. C. Boyer .....La.
Jno. D. Callaghon . ....La.
Alcée Chastant .....La.
A. G. Clopton .....La.
W. F. Coorpender .....Miss
A. Donnaud..... .....La.
Jas. S. Evans.....Ala.
B. B. Fatheree.....Miss.
David Ford .....La.
Jno. D. Ford .....Miss.
Joseph A. Gibson .....Miss.
W. T. Gilbert.....Miss.
F. R. Gregory .....Miss.
D. M. Griffing .....Miss.
Joseph H. Guy .....Tenn.
R. Hood .....Ala.
J. J. Johnson.....La.
J. Welch Jones.....La.
P. M. Lambremont.....La.
Jno. Adrien LePrêtre...La.
Wm. M. May .....Miss.
Thaddeus C. McCurdy Ala.
Wm. H. McKinney ...Miss.
Joseph A. Nettles.....La.
J. E. Nicholson .....Miss.
A. R Nye.....La.
John P. Peterson .....Ala.
Rigdon Quinney .....Ala.
A. E. Richards .....La.
T. P. Richardson .....La.
A. C. Robertson.....Tenn.
B. J. Salles .....La.
Jerry Sanders .....Miss.
Ed. A. Semple.....Ala.
L. R. Sullivan.....Ala.
C. C. Thompson .....Tex.
Jno. R. Weatherly ...Miss
M. L. Werms.....Tex.
Chas. B. White .....Inda.
Total.....44

1853.

William Aills .....Miss.
Immer U. Ball.....La.
Jonathan N. Bedwell, Miss.
John C. Baskins .....Ala.
R. Cary Clarke.....Va.
G. G. Crawford .....Ala.
Hiram Clarke .....Ga.
James R. Chambers...Miss.
W. P. Craddock.....Ala.
W. Smith Chew ....Miss.
Stanford E. Chaillé .....La.
J. J. Doty.....Miss.
Isaac F. Delony.....Ala.
Ernest DeBlanc..... La.
Paul E. Delente .....La.
Levi H. Ficher .....Tex.
Philip Fitzpatrick.....Ala.
Frederick Fricke .....La.
John H. Gaines.....Miss.
H. L. Goodwin .....Ala.
Robert P. Grogan.....N. C.
Henry C. Gray .....Tex.
John L. Hebron .....Miss.
Urian Haynie .....Tex.
W. Harrison Hodnett...Ga.
Joseph E. Harvey.....Miss
Manly L. Hester.....Ala.
Lafayette D. Hill .....Tex.
William H. Hill .....Tenn.
Obediah Hendrick.....Ala.
D. Nathaniel Jones...Miss.
Joseph Lemly .....Miss.
Edward A. Ligon.....Ala.
Samuel E. Lauve .....La.
J. O. Magee.....Miss.
John McGee.....Ala.
William McCulloch...Miss.
James Moore.....La.
C. B. Mooring.....La.
A. M. Manning.....Ga.
Hudson J. Means .....Ala.
J. C. McIntyre.....Miss.
Wm. F. Mellon.....Miss.
Edw. McAlexander.....Ala.
W. S. Millar.....La.
Samuel E. Nunn .....Miss.
W. F. Newsom .....Ark.
John A. Owens .....Ala.
J. J. Ormond.....Ala.
W. S. Patton .....Ala.
D. Rawlins Pettit.....Miss.
Alfred S. Pickering...Ala.
R. F. Packer.....Ala.
John E. Pugh .....La.
Anthony A. Peniston...La.
E. G. Rawlings.....Miss.
Neal Smith .....Ala.
W. N. Sandell .....Miss.
John T. Sanford.....La.
J. G. Sallis.....Tex.
James L. Smith.....Mexico.
Robt. F. Thompson...Ala.
Alphonso T. Semmes, Miss.
Eugene F. Sabatier .....La.
Auguste Thibaut.....La.
Charles C. Tucker .....La.

George H. Walker .....La.
J. A. White.....La.
A. P. Waddell.....Tenn.
B. W. Wroten .....Miss.
Total.....70

GRADUATES IN PHARMACY.

Octave Anfoux .....La.
Cristoval Espinola. Yucatan
Total.....2

1854.

Wm. Bacot.....Miss.
J. D. Barkdull.....Miss.
J. W. Barrett.....Miss.
P. Bres.....La.
B. Brookes.....Tex.
W. W. Brown .....Tex.
A. Bruenn .....La.
J. W. Comfort.....La.
F. L. Cook.....La.
L. O. Dailey.....Ala.
S. Devore.....Ky.
J. M. Donald.....Ala.
J. G. Dowald .....Ala.
E. S. Drew.....La.
A. Dubourg .....La.
E. Dubourg .....La.
W. B. Erwin.....La.
H. F. Foote.....La.
J. E. Gourlay .....La.
H. H. Hubbard .....Miss.
H. C. Huff .....Miss.
C. W. Humphrey.....Miss.
W. K. Johnson .....Tex.
G. W. Jones.....La.
R. J. Kendrick.....Fla.
G. W. Leatherman ...Miss.
W. J. Love.....Tex.
G. P. Luster.....Miss.
M. J. Luster.....Miss.
J. Mathieu.....La.
W. C. McGown.....Tex.
D. McKnight .....Tenn.
J. S. McRaven.....Miss.
F. W. Moodie.....Ala.
E. Muckle .....Ala.
W. W. Perry .....Tex.
M. P. Quinn.....La.
J. Ray .....Tex.
H. O. Reed.....La.
J. H. Robbins .....Ala.
J. M. Silliman .....Miss.
Alexander Smith .....La.
C. R. Smith .....Miss.
N. C. Smith .....Miss.
W. A. Smith.....Ala.
Jas. E. Smythe.....Miss.
M. Talbott.....Ky.
D. L. Todd.....La.
A. A. Wall.....La.
E. M. Walker .....Tex.
Chas. H. Williamson ...La.
J. W. Woolverton.....Ala.
Total.....52

1855.

John G. Allen.....Tex.
Walter Bailey .....La.
Benj. F. Barry.....Miss.
Wm. B. Booth.....La.
H. F. Bowen .....Miss.
Oscar F. Bright .....Va.
Saml. H. Brown .....Miss.
Jas. M. Callaway.....Ark.
Jules Cartier .....France.
David D. R. Cole..... Ala.
W. L. DeGraffenreidt...La.
Orren L. Ellis .....Miss.
A. S. Fox .....Miss.
Jno. A. Gilmore .....La.
Thos. B. Grayson.....Tex.
J. Y. Hicks..... Ala.
O. J. Hood.....Ala.
Wm. R. Horn.....Ala.
P. B. Houston.....Ala.
Jno. J. Hulse.....Fla.
Thos. J. Lockett.....La.
Wm. L. Magee.....Miss.
Hugh M. D. Martin.....La.
L. Martinez .....Ala.
Cicero C. Meredith.....La.
J. C. Milner.....La.
Antoine Monchet .....La.
J. F. Moore .....Ala.
Joseph T. Moreau .....La.
Angus McKinnon .....Ala.
R. W. McLean.....Miss.
S. S. Nettles .....La.
Saml. R. Olliphant... Miss.
Horatio A. Parsons...Tex.
T. B. Perkinson.....Va.
A. K. Ramsay .....Ala.
Lyman J. Rice.....Tenn.
John M. Rogers .....Tex.
Robt. L. Seale .....Ala.
Hiram D. Shaw.....Miss.
Robert B. Shields.....Miss.
Orlando V. Shurtleff..Miss.
Henry C. Snodgrass..Miss.
Charles Stevenson.....Tex.
William Stewart .....Miss.
James E. Sutton.....Tex.
Frank L. Taney .....La.
James M. Thomson...Miss.
Henry W. Waters.....Tex.
William J. Watson.....Ala.
W. H. White.....Miss.
Robert Wood .. ..Miss.
J. D. Worthy.....La.
Philip Wyche.....Tex.
Total.....54

GRADUATE IN PHARMACY.

Edward Aleix.....La.
Total.....1

1856.

Washington C. Allen..Miss.
Boulds B. Baker.....Tex.
John Y. Baylis .....Miss.
Elias J. Beall .....Tex.
William H. Berthelot...La.
Charles J. Bickham ...La.
Robert O. Butler.....La.
Louis A. Burgess.....La.
Albert H. Cage.....Miss.
John J. Castellanos.....La.
Lewis T. Chapman...Miss.
John W. Clement.....Ala.
Washington F. Coates..Ark.
Nicholas A. Corry.....La.
John W. Crisler.....Miss.
Dorsinos DeBlanc .....La.
James M. Doby.....Ala.
Barrey Y. Egan.....La.
Joseph L. Estorge.....La.
John S. Fenner.....Tenn.
James G. Forster.....Ala.
George W. Friou.....La.
E. N. Gary.....Ala.
William P. Gibson.....La.
Rufus F. Gill.....Ala.
Elijah M. Graves.....Mo.
Josephus F. Griffin.....La.
Marion M. Griffin ...Miss.
Benjamin S. Haw.....La.
Charles O. Helwig .....La.
James D. Hendrick .....La.
Joseph A. Landry.....La.
Spartan Q. Leister.....Tex.
John A. Livingston...Ark.
B. A. H. Massingale..Miss.
Joseph R. McAfee.....La.
Alexander McCaskill..Ala.
Douglass L. McEvers...La.
William M. McGill.....Ala.
Daniel F. McInnis...Miss.
William W. McMillan..Ala.
Robert W. Mitchell...Miss.
William M. Mobley...Ala.
John W. Moore.....Tex.
John S. Murphy.....La.
William W. Morgan...Ala.
Allen Newton .....Ark.
James P. Odineal.....Miss.
Andrew J. Odom .....Ala.
Robert W. Payne.....Miss.
T. H. Pennington.....La.
J. B. W. Penrose.....La.
W. R. Perkins.....Ala.
William P. Riddell.....La.
G. W. A. Robards.....La.
Lucius F. Rowland...Ark.

Henry P. Sauvé.....La.
Howell H. Shields...Miss.
Edmund E. Smart.....La.
James D. Terrell.....Miss.
A. E. Thompson.....Miss.
Maryatt H. Watkins..Miss.
Francis Whicher.....Iowa.
Andrew V. Woods.....La.
Francis D. Young .....Ky.
Total.....65

1857.

John C. Adams .....La.
J. J. Alford .....Miss.
Edward C. Ashford...Ala.
Lewis G. Blanchett.....La.
William D. Bragg.....Ala.
Charles A. Buxton...Miss.
Robert P. Boulware.....La.
Joseph B. Camp.. .....Ala.
Joseph P. R. Cloutier...La.
John W. Cockerham...La.
Joshua A. Collins.....Miss.
William Davis.....Tex.
David H. Dement.....Miss.
Wm. C. Dixon..... .....La.
Emile Doumeing.....La.
Wyly W. Dunn.....La.
Fred. Duperier .....La.
Elijah Y. Flemming...Miss.
Drury P. Gibson.....La.
Alonzo Givens.....La.
Thomas J. Gordon...Miss.
W. Brunner Griffin...Miss.
Richard D. Haden.....Tex.
Alfred Hall.....S. C.
Gustave S. Hebert.....La.
Robert H. Henderson..S. C.
James M. Holloway..Miss.
James F. Houston.....La.
Louis O. Huard.....La.
Arthur F. Hunter.....Ga.
J. R. Humble.....La.
George W. Inge .....Miss.
Alva E. Jackson.....La.
Dudley W. Jones.....Miss.
John A. Jordan .....Tex.
Jackson G. Knox.....Miss.
Arthur Kohn.....La.
William A. Lloyd.....Miss.
Thomas W. Lilly.....La.
Jeptha McKinney .....La.
John N. McNeely .....Ala.
Thomas L. Mills.....La.
John M. Mobley.....La.
John Morrison..... .....La.
Edward M. Morse.....La.
Elijah B. Mosely.....Ala.
Abdon A. Overton.....Tex.
Samuel M. Parry.....Tex.
William L. Phillips.....La.
James C. Richardson...La.
William S. Royall.....Miss.
Hillary Ryan.....Tex.
John Sims.....Miss.
Henry J. Snow .....Tex.
Duncan M. Spencer...Tex.
John C. Spinks .....Miss.
Benj. R. Springfield.....La.
Rice B. Tate.....Tenn.
Charles F. Thatch.....Ala.
F. M. Thomas... .....La.
James B. Wier.....Miss.
James D. Wilson .....S. C.
Sandford Wood .....Ky.
Alexander Yates.....Miss.
Total.....64

GRADUATE IN PHARMACY.

Ferdinand Meyer.....La
Total.....1

1858.

William P. Andrews...Ga.
William Baker.....Ala.
John Paul Barbot.....La.
James N. Beck.....Miss.
Alex. Porter Brown.....La.
John R. Brown.....Ark.
Aug. J. Cammack.....La.
Saml. W. Campbell...Miss.
Auguste Capdevielle ...La.
James Carroll .....Miss.
Thad. B. Collier.....Texas
Samuel G. Compton.....La.
Edward Connor .....Texas
Oscar L. Cook.....La.
John Coburn.....Penn.
Jamas B. Davis.....La.
Gilbert T. Deason.....La.
Chas. M. Dougherty..Miss.
Marcus C. Edwards...Miss.
Robert A. Felton.....Ga.
William B. Field.....Miss.
Robert W. Foster .....Ala.
Peter F. Fitzgerald...Miss.
James J. Goode.....La.
William A. Griffin...Texas.
Napoleon L. Guice ...Miss.
Edward L. Hamilton..Ark.
Theophilus Harrison...Ala.
William B. Harrison...Ala.
George W. Hendrick ...La.
Robert E. Hill.....Texas.
Oliver Hoff .....Ga.
Thomas O. Hynes.....La.
Julius T. Kerel.....La.
Alexander Lane .....La.
Benson M. Lockwood..Miss.
J. Humble Lowe.....La.
Jarvis M. McCary.....Ala.
William R. McCreight..La.
Andrew F. McLain.....La.
William McPherson...Ala.
Thomas S. Moore ...Texas.
Henry W. Morgan.....La.
Henry F. Mullen .....Ala.
Eli W. Needham.....Miss.
Isaac J. Newton.....Ark.
Henry J. Nott.....S. C.
Robert Beale Payne.....La.
Willis T. Penny.....La.
James Rowan Percy...La.
David M. Perkins.....Miss.
Dunklin Pierce .....Miss.
Fabius H. Reader.....Ark.
D. H. Robertson.....Texas.
Edward P. Roby.....Miss.
Leonidas Shackelford.Miss.
Isaac A. Shelby.....Miss.
W. Rufus Sherrard.....La.
W. Francis Shine .....Fla.
Samuel Slay..... ...Ark.
W. D. Simmons.....Ala.
J. R. Stewart..... .....Ala.
John Taylor.....Md.
Elijah Thigpen.....La.
Isaac R. Whitaker...Miss.
R. Dunbar Whyte.....La.
Samuel J. Youngblood..La.
Total.....67

1859.

Benjamin B. Barnett..Miss.
William J. Barron...Miss.
James W. Bennett...Miss.
Alexander P. Breda ...La.
Geo. O. Brosnaham.....Fla.
Charles E. Buck.....Miss.
James Burns.....La.
Edward Caire .....La.
Ralph C. Callaway.....Ala.
Thomas H. Castleton...La.
Pinkney D. Chrisman..Miss.
Daniel S. Chessher ...Tex.
John W. Cothran .....Ala.
Charles G. Cowan.....Miss.
John H. Davis.....Miss.
Samuel R. Davis.....Miss.
John P. DeJarnette...Ala.
Richard L. Dunn.....Miss.
Charles M. Erwin.....Ala.
James C. Fears.....Ala.
William P. Finley.....Miss.
Edmund H. Fournier..Ala.
Thomas Gaddis.....Miss.
John S. Gardner.....La.
John Goodman .....Ky.
Patrick H. Griffin.....Ga.
Wm. T. Haddock.....Ala.
Alexander P. Hall.....Ala.
Peter L. Hammond...Ala.
Elisha M. Harris.....Tenn.
James M. Haynes ...Miss.
Lewis H. Hill.....Miss.
Samuel A. Hill.....Ala.

Lucius L. Holcombe...Ala.
Alexander T. Howe ...La.
Wm. D. Jennings...Texas.
John P. B. Johnston...Ala.
James A. Jones.....La.
William L. Jones .....Fla.
Rufus H. Kilpatrick...Ala.
James B. Knowles.....Ga.
Numa Lambert .....La.
Thomas H. Lanier.....Ala.
Wm. W. Leggett.....Miss.
Charles D. Lewis...Texas.
John J. Lyons.....La.
Virgil V. Madden...Texas.
Jas. H. McDonald...Miss.
Daniel F. McEacham...La.
Samuel Meeker.....La.
William M. Mercer.....La.
John G. Mestayer .....La.
George W. Monroe.....Ala.
Aug. H. Moore .....Ala.
James Moore .....La.
John F. Moodie.....Texas.
John M. Morrison.....La.
Martin D. Morgan ...Miss.
Samuel C. Murphy...Miss.
John J. Oatis .....Miss.
William Offutt.....La.
James P. Oliver .....La.
Cornelius F. O'Neil.....La.
James W. Oswald.....Miss.
James M. Owens .....Ark.
Harry Percy .....La.
Marshall Pope.....La.
William P. Powell...Texas.
James M. Quinney ...Ala.
James E. Reeves.....Texas.
John J. Roberts.....Ala.
James W. Saunders...Miss.
Zach. J. Scott .....Miss.
Calvin W. Silliman...Miss.
Eben. M. Smalley .....La.
John D. Smith.....La.
Wiley P. Smith .....Miss.
David J. Smith.....La.
And. W. Smyth .....La.
Henry Snow .....Ala.
Joab B. Spears .....Miss.
J. G. W. Steedman.....Ala.
Joseph Stevens .....Texas.
John S. Stephens...Texas.
Robert A. Stewart .....La.
Sheldon Stringer .....Fla.
James W. Talbert ...Miss.
Chas. L. Tarleton .....La.
Peter Taylor .....Miss.
Alfred G. Tebault .....Va.
Francis M. Traylor.....La.
David B. Turner.....Ala.
Henry F. Wade.....La.
William A. Walton.....Ala.
James W. Wingate .....Ala.
Rufus H. Wooten.....Tenn.
Total.....96

GRADUATE IN PHARMACY.

Auguste Leicher.....La.
Total.....1

1860.

Jones C. Abernethy ...Ala.
Alfred A. Alston.....Ala.
Richmond P. Austin..Miss.
Benj. J. A. Avent...Miss.
George Badger.....N. C.
Cicero C. Bates .....La.
Edwin A. Bonneau.. ...Ala.
Samuel L. Bonner.....Ala.
John H. Brack .....Miss.
Ephriam A. Brevard...Fla.
Edward W. Britton..Texas.
Benj. F. Brown .....La.
Preston E. Buckner ...La.
John Cameron .....Texas.
Samuel N. Caston ...Miss.
Sidney R. Chambers ...La.
John W. Collins.....Ala.
James V. Cook.....Miss.
Thomas B. Cook .....Miss.
Wm. H. Cunningham.Miss.
Stephen E. Cuny .....La.
Charles M. Curell .....La.
Alexander S. DeLee ...La.
Moses R. Denman...Texas.
John P. Davis .....Miss.
Aug. L. East .....La.
Aug. W. Egan.....La.
John N. Elliott .....Miss.
Peter R. Ford .....Ark.
James W. Frazer .....Ark.
John Frost.....Miss.
William G. Gamble ...Ala.
John J. Gardner.....La.
Fontaine D. Garrett...Miss.
Charles W. Gibson...Miss.
Franklin M. Gilbert...Miss.
Jackson M. Gilbert...Miss.
John B. Ginn.....Miss.
Miles W. Goldsby .....La.
Erasmus F. Griffin ...Miss.
John W. Guerrant ...Tenn.
William M. Guice .....La.
James Harper.....Ark.
Thomas B. Harwood...Ala.
Charles W. Hill .....Miss.
Orlando A. Hobson...Miss.
James M. Holcombe...Ark.
Titus T. Holliday.....Miss.
Elam J. Hope .....Miss.
John B. Howell.....La.
Leander G. Hunt.....N. C.
James W. Jackson .....La.
Derrick P. January, Jr..La.
Franklin G. Johnson..Miss.
James T. Johnson .....Ala.
John W. Jones .....La.
John Jordan.....Tenn.
Nathan B. Kennedy...Ala.
Eugene M. Kidd.....La.
Wm. B. King .....Miss.
Robert A. Lee .....Ala.
William J. Lee.....Ala.
Samuel P. Lewis .....Miss.
Walter Lewis.....Texas.
Jefferson J. Little.....Miss.
Robert L. Luckett .....La.
Sherrod G. Luckett...Miss.
Wm. E. Maddox .....Texas.
Thomas M. Marks .....La.
William H. McCord..Tenn.
John A. McCreary .....Ala.
John R. Montgomery...La.
Robert F. Moody .....Ala.
Wm. C. Murphy .....Ala.
Frank Nailer .....Miss.
Vandy M. Neal .....Ala.
Samuel S. Noel .....Miss.
John M. Nuckolls..... Ala.
Rich'd T. Packwood...N.Y.
Daniel Parker .....Ala.
Samuel Parker .....Ala.
Benj. F. Passmore.....Miss.
Jack Phillips .....Ala.
Wm. A. Portwood .....Miss.
George W. Posey .....Ala.
James Purviance .....La.
Frank Rainey .....Texas.
Lemuel Rhodes.....La.
Sanford S. Riddell.....La.
Wm. F. Robertson, Jr..La.
Wm. A. Robertson.....La.
Lemuel Richardson...Miss.
William T. Sawyer .....Ala.
Fred. L. Sherrer .....Ark.
Bisland Shields.....Miss.
John P. Smith.....Ala.
Martin L. Smith.....La.
William H. Sprague ...La.
Wm. H. Statham.....Miss.
Rufus K. Stevens .....Miss.
John A. Stewart.....La.
Jonathan H. Stroud.....La.
Uriah O. Tate .....Miss.
Joseph W. Thompson..Ala.
William C. Trabue.....La.
Richard G. Turner..Texas.
Peyton W. Vining...Texas.
John L. Wagley .....La.
Wm. Weathersby.....Miss.
James W. Wright .....Miss.
Patrick H. Wright.....Ala.
George Wyche.....Texas.
Total.....112

GRADUATE IN PHARMACY.

Joseph A. LaNeuville...La.
Total.....1

1861.

Thos. W. Abington.....La.
Wade Allen.....S. C.
C. S. Andrus.....La.
Benj. F. Archer .....Miss.
John H. Arthur .....La.
L. Manning Austin...S. C.
George H. Bailey.....Tex.
Samuel H. Beaty.....S. C.
Henry Bethea .....Ala.
Alfred Y. Bettis.....Ala.
Thomas J. Bettis.....Ala.
Thomas J. Black.....Miss.
John B. Blackshear...Tex.
Jesse J. Booles.. .....La.
Andrew J. Borroum..Miss.
David W. Booth.....Miss.
Junius N. Bragg.....Ark.
Walter L. Bridges...Miss.
Elias J. Brock.....Miss.
Lawrence L. Brumby...La.
James H. Bryan.....Ga.
Thomas S. Burke.....La.
Armistead Burt.....S. C.
Charles C. Cage.....La.
Giles W. Cain .....Tex.
James G. Campbell.....La.
Benj. H. Cheney.....La.
J. Jerome Cherry.....Va.
Thomas C. Clark .....Miss.
Orlando L. Collins.....La.
Chauncey P. Conerly.Miss.
Benj. F. Crowell.....Ala.
William E. Dailey.....Tex.
William B. Dale .....Ala.
James M. Davis.....Ala.
Joseph R. Dinkins...Miss
Edward Duffel.....La.
Joseph W. Eckford...Miss.
Christopher P. Ezell...Ala.
Julian C. Feild.....Ark.
James M. Ferguson...Miss.
Oscar Gaudet .....La.
John Gerdine.....Miss.
Claude M. Gibson.....Miss.
William Gilliam.....Miss.
Gilbert E. Gordon...Miss.
Leander M. Graves...Miss.
Jeptha V. Harris.....Miss.
Robert L. Harris.....Tex.
William V. Harris.....Miss.
Lewis C. Harvey.....Miss.
William H. Hayes.....Miss.
Samuel B. Haynes.....La.
S. S. Herrick.....La.
James M. Hicks.....Miss.
John R. Hicks.....Miss.
J. Eberle Holden.....Miss.
Hugh L. W. Hollis...Tenn.
John T. Holman.....Miss.
Seth R. Hurd.....N. Y.
James M. Hunt.....La.
Henry J. Hunter .....Tex.
Ashbury L. Jarratt...Miss.
Clement F. Jones.....Md.
John Wm. Jones.....Ga.
William O. Jones.....Miss.
Henry G. Land .....Va.
Robert G. Lane.....Tex.
William C. LeMay...Miss.
Francis M. Letcher...Ala.
Benj. H. Lipscomb...Miss.
J. Randolph Lowther.Ark.
Thomas Manning .....La.
James Martin .....Miss.
J. W. McBane... .....Ill.
T. W. McClanahan ...Tex.
George W. McDade ...La.
John T. McDowell.....La.
Allen E. McGraw.....Ala.
Phlegie R. Mélançon...La.
Thomas D. Meritt.....Miss.
John Joseph Meylor...La.
James H. Moncrief...Ark.
William A. Moss.....La.
Rufus J. Murphy.....Miss.
Marion M. Myers.....S. C.
J. W. Naul.....Miss.
Robert M. Neely.....Miss.
Jason F. Norman.....S. C.
J. F. T. Paine .....La.
John B. Pease.....Miss.
Charles Pelaëz.....La.
Lovick N. Phillips .....Ala.
Christopher C. Post.....La.
L. Emile Profilet.....Miss.
Edwin S. Ray.....S. C.
Chas. W. Reames.....La.
Robert V. Reid.....Ga.
Wm. H. Richardson.....La.
William H. Riley .....La.
John Roach .....Miss.
James R. Roby .....Miss.
Francis M. Rushing...Ala.
Sebe D. Schwing.....La.
Henry Shiff .....La.
Augustus B. Sholars...La.
Charles M. Sitman.....La.
Horatio N. Smith.....Miss.
James H. Southall.....Va.
Achilles P. Sparkman.Miss.
Wm. T. Spencer ..... La.
Lewis Stevens.....Miss.
John C. Stickney .....Ala.
David H. Stringfield ...La.
Wm. T. J. Sullivan...Miss.
Hardy H. Thompson..Miss.
Edwin L. Tillinghast...S.C.
Charles H. Todd.....La.
Stevenson W. Turpin..Miss.
Philo G. Valentine.....Ky.
James B. Vann .....Ala.
Alonzo H. Varner.....Ark.
John A. Vinson.....Texas.
Tandy A. Walker .....Miss.
Wm. Hamilton Walker..La.
Alexander E. Wall...Miss.
James Walshe .....Texas.
Marcus B. White .....Ga.
John B. Whittaker.....La.
Melvin E. Williams.....La.
Oswald R. Willis .....La.
Geo. L. Witherington..Ala.
Thomas Word .....Miss.
Total.....133

GRADUATE IN PHARMACY.

Florian T. Landry .....La.
Total.....1

The Annual Commencement of the Medical Department of the University, took place at Odd Fellows' Hall, on March 20th. Degrees in Medicine were conferred on one hundred and thirty-three gentlemen, and in Pharmacy on one. The list of names will be found above, under the year 1861. Prof. Richardson delivered an address, and Dr. J. R. Hicks, of Vicksburg, Miss., who was the valedictorian of 1861, modestly, ably, and eloquently represented his class.

ART. V.—*Vienna Correspondence of the Journal.*

VIENNA, January 19, 1861.

DEAR CHAILLÉ: I fear that you are reproaching me with neglecting my promise, in consequence of my long silence; but I have only delayed writing to you in order that I might allow myself full time for becoming acquainted with the advantages of Vienna as a medical school, and of the system of teaching pursued here.

I devoted my first month entirely to the study of the language, as I found I had still much to learn before I should profit from an attendance upon the hospital. When the lectures began, on the first of October, I found no very great trouble in understanding them, and of course every succeeding day diminished my difficulties. I was strongly recommended by a medical gentleman whose acquaintance I was fortunate enough to make, to devote the earlier part of my stay here to obstetrics, for the study of which Vienna offers peculiar advantages.

I therefore at once took a practical course of obstetrics upon the dead body; we were shown and exercised in all the operations of this branch of our science. Every student who takes Braun, the professor's, course, is entitled, according to turn, to assist in delivering the women who seek the clinic; but those who have taken the above course, have the privilege of performing the minor operations, such as the application of the forceps at the inferior strait, delivery of the head and arms in breech presentations, reposition of the umbilical cord, etc. The operations of more importance are always, where practicable, performed by Braun or one of his assistants, in the presence of the class. Last year there were nearly four thousand women delivered at this clinic, and of course, in this number, very many interesting and instructive cases must occur. I have no doubt that I have seen more operations than many an old physician at home. The opportunity for touching and diagnosis are invaluable.

The two professors of clinical medicine, Skoda and Oppolzer, lecture every morning from eight to ten. Much may be learned from either; but the latter is by far the more agreeable, and, I think, the more instructive lecturer, and in consequence his clinic is always uncomfortably crowded. In both clinics, a case, as soon as it arrives, is given to a student, whose duty it is to discover the previous history, present symptoms, necessary treatment, and prognosis: these notes are always read before the commencement of the lecture, and the professor then questions him in reference to the above points,

much stress being laid upon differential diagnosis. I think, in this way, the attention of the class is better sustained than it would be were a long lecture delivered. In addition, Oppolzer generally visits his wards Saturday (which by all the professors except him is observed as a holiday) at nine o'clock, and if there are any interesting cases, lectures till eleven.

Between ten and twelve, the two professors of surgery, Schuh and Jommreiche, give their clinic: these are both fair operators and lecturers, but their clinics are not so good as those of Nélaton and Velpeau, in Paris. At the same hours the two eye-surgeons lecture, Arlt and Jaeger. I have not visited the wards of these gentlemen as frequently as I intend to do, but I believe the opportunities for studying the diseases of the eye are very fine here.

From twelve to two, Braun gives his lecture upon midwifery, and from two to three, upon diseases of women. He is a tolerably good lecturer—especially so, if something interesting has occurred between his visits.

From half-past two to four, Helva lectures upon cutaneous diseases; and at four, Sigmond upon syphilis. There are also many private courses, among which I know those upon pathological chemistry and anatomy to be especially good. Besides these, the assistants of the various professors give courses upon various subjects, which are at least as good as similar courses in Paris. The theoretical lectures are also said to be very good—those of Hyrtl, the professor of anatomy, and of Brücke, the professor of physiology, being especially popular with the students.

There is plenty of material here for dissection, etc., and I believe it is much cheaper than in Paris.

In my opinion, the school of Vienna is better adapted to the wants of American students than that at Paris, as I think the clinical advantages greater—the visits of the various professors much more carefully made, and more pains taken to instruct the student; and then, too much stress cannot be laid upon the fact that every thing takes place under the same roof, whereby the student is spared those long "*courses*" of which he is the victim in Paris. It is also no small advantage, that the visits are not all made at the same hour, as at Paris; but that a student can employ himself, without intermission, from eight, A. M., till five, P. M., if he is so disposed. Of course, in a hospital which has usually two thousand beds occupied, there

is no lack of interesting and instructive cases. I forgot to mention that Rokitansky lectures at twelve, M.

I think that it may be safely calculated that a student's necessary expenses are only two-thirds what they are in Paris, and I find that there are many fewer occasions for spending money. To improve myself in the language, I have been living in a family, which, of course, most students will not do; so my expenses will be no criterion for others. I know, however, an Englishman, who has a tolerable comfortable room for twenty florins [less than $10] a month, and who says he dines well for a little less than a florin. A German student's expenses are much less; but I do not think that any American student would be satisfied with their way of living.

The lectures are not free, but extremely cheap, so that cannot be raised as an objection; they are usually ten florins for five months. The dearest are those of Helva, which are twenty-eight.

The professors are generally very friendly, and seem to take a pleasure in having their school visited by foreigners. There is enough amusement to make a visit to Vienna agreeable. You visited the opera, and I believe passed a pleasant evening, which has generally been my case whenever I have visited it. I have also gone to the principal theatre, which I have found tolerably good. Besides, there are concerts, balls, etc., enough for those who are fond of this class of amusement.

Very sincerely, your friend, Jas. H. Hutchinson, M. D.

Art. VI.—*Carbonate of Lead in Erysipelas.*

Alexandria, La., February 13, 1861.

Dr. Dowler—*Dear Sir:* Allow me through the columns of the *N. O. Med. and Surg. Journal*, to call attention to the use of carbonate of lead in the treatment of erysipelas.

When we were attending on the lectures at the University of Louisville, during the winter of 1853–4, Professor Gross, lecturing on this disease, remarked that he had found no remedy, equal as a local application, to the cream of white lead, which is made by rub-

bing the carb. lead with linseed oil, till it attains the consistence of thick cream. With this the inflamed surface is painted several times in twenty-four hours. We treated a severe case of this disease affecting the scalp and face, during the last month, and with such decidedly beneficial results, that we feel disposed to communicate it to the medical public, in the confident belief that it will be found equally beneficial in the hands of others.

In our case, the fever was running high, with intense pain in the head, with great tumefaction of the scalp; the right eye closed, and ulcerations of the forehead and scalp spreading rapidly. We painted the entire inflamed surface, ulcers also, and for some distance around. It acted like a charm. We painted the part over five or six times in the twenty-four hours. Its beneficial effects were manifest from the first application.

It should be borne in mind that our reliance on this remedy was only as a local application. Active constitutional treatment was also resorted to.

In conclusion, allow me to bear testimony to the beneficial effects of the cream of sub-nitrate of bismuth in the treatment of blisters indisposed to healthy action. In the January No. of the *Journal*, page 6, Dr. John E. Wright, of Caldwell Parish, directs attention to it. We have since used it, and, so far, with the happiest effects. I have it prepared in the same manner that I have the cream of white lead prepared for the treatment of erysipelas.

Respectfully,

GEO. S. D. ANDERSON, M. D.

V

ART. VII.—*Clinical Report of Six Cases of Pneumonia observed in the New Orleans Charity Hospital:* By L. E. PROFILET, M. D.

THE following six cases of pneumonia were admitted into Ward 29, between the months of January and April, 1861. They were noted daily, and present points of interest from several considerations, which will be alluded to under the respective cases. I have noted the physical signs and symptoms somewhat minutely, hoping thereby to enhance their interest.

Case I.—*Pneumonia affecting the Upper Lobe and upper half of the Lower Lobe of the Left Lung.*—January 18th. James Cunningham, aged twenty-three, Irish, laborer, admitted January 16th. He states that his general health is good. He is a robust man, and not intemperate. He has been sick five days. After working hard, he went to sleep in an exposed situation. When he awoke, he felt very stiff; all his bones ached. There was no notable pain in the chest. He immediately went to bed, and did not leave it until he came to the hospital. He took no medicine except five pills, which purged him freely.

When admitted, two days since, there was considerable febrile movement; pulse full. He had no cough. There was a circumscribed flush on each cheek, and an indescribable appearance which led me to suspect pneumonia. After a careful examination, I could discover nothing abnormal about his chest. The next morning he complained of pain, referred to left nipple. He had coughed considerably during the night, and expectorated quite freely. The sputa were mostly bronchial in character, but partly of a yellow tinge, and somewhat tenacious. Upon examination, I discovered relative dullness over the left scapular and interscapular spaces. In the same situations the respiratory murmur was prolonged. I ordered him half an ounce of the syrup of morphia, to be used as required for cough; beef tea for diet.

To-day he reports worse; he did not sleep well last night on account of the cough. The sputa are of the same character as yesterday. The pain in the side continues. The tongue is somewhat coarse, but moist. Respirations, 40; pulse, 112.

Physical Signs.—On percussion, there is dullness over the whole upper lobe of the left lung and upper portion of the lower. The respiration in the same situations is broncho-vesicular, and accompanied by a crepitant râle; the voice is bronchophonic. On testing the urine, I find the chlorides present only in moderate quantity.

Treatment.—One-sixth of a grain of acetate of morphia in half an ounce of solution of acetate of ammonia, every three hours; one ounce of brandy every six hours; essence of beef, and milk, for diet.

Night.—The physical signs indicate complete solidification of the upper lobe of the left lung.

January 19th.—The patient reports much better. He slept well after twelve o'clock, and has lost his anxious appearance. The pain

in the side continues when he coughs. The sputa are tenacious and somewhat rusty. Respirations, 20; pulse, 96. Tongue clean and moist.

Physical Signs.—There is a cracked-pot sound on percussion over the greater portion of the upper lobe of the affected lung anteriorly, and also tympanitic resonance. The cracked-pot sound is most marked directly under the clavicle. Posteriorly there is marked dullness over the upper lobe and upper half of the lower. There is a marked crepitant râle over the anterior portion of the lung; the respiration, as heard through it, is broncho-vesicular; the vocal resonance is exaggerated. Over the posterior portion there is more of the bronchial quality in the respiration than yesterday. No cardiac complication. Treatment the same, with the addition of a sinapised flaxseed poultice over the seat of pain. There is no trace of the chlorides in the urine.

January 20th.—He became delirious during the night, and left the ward. The pain in the side continues; the sputa are tenacious, but not rusty. Respirations, 24; pulse, 84.

Physical Signs.—There is dullness over the whole of the affected portion of the lung; the cracked-pot sound is not heard. There are crepitant and sub-crepitant râles anteriorly; there is less of the bronchial quality in the respiration; there is slightly exaggerated vocal resonance. Over the posterior portion the respiration is feeble in the upper lobe, but broncho-vesicular in character. In the same situation there is a slight crepitant râle. There is no trace of the chlorides in the urine. Treatment the same.

January 21st.—He reports much better; he rested well all night, and showed no signs of delirium; tongue moist and clean; respirations, 20; pulse, 84.

Physical Signs.—Anteriorly the dullness is more marked than behind, where it is only relative. There is a marked crepitant râle over the upper lobe anteriorly; the respiration over all the affected lung possesses still less of the bronchial quality. Resolution is evidently taking place, and there are no signs of advancing pneumonia. There is an excess of the urates in the urine, but no trace of the chlorides.

Treatment.—The stimulant is changed to two ounces of port wine three times daily; diet the same.

January 22d.—There is again marked improvement. The cough

and expectoration are comparatively slight; pulse, 68; respirations, 28.

Physical Signs.—The percussion resonance over the upper lobe anteriorly has considerable of the vesicular quality. Posteriorly over the affected lung there is only relative dullness. The respiratory murmur is nearly pure vesicular over the affected portion of the lung, accompanied by a slight crepitant râle anteriorly. There is neither bronchophony nor exaggerated vocal resonance. No trace of the chlorides in the urine; the urates are in excess.

Treatment.—One drachm of the syrup of morphia three times; stimulant and diet the same.

January 23d.—The patient reports progress. He expectorated a considerable quantity during the night of a bronchial character. Pulse, 60; respirations, 20.

There is scarcely any appreciable difference in the physical signs on the two sides of the chest; there are no râles; the chlorides are present in considerable quantity.

Treatment.—His diet is to be improved; stimulant the same; the syrup of morphia is continued. He is to sit up to-day.

January 24th.—The patient manifests still greater improvement. He sat up a short while yesterday; he has no notable cough. The affected lung has returned so near its normal condition, that I do not consider it necessary to examine it any more. Pulse, 60; respirations, 20. The chlorides are present in the urine in abundance.

Treatment.—The syrup of morphia is continued; full diet; port wine three times.

January 25th.—There are now no symptoms of his having been sick, except that he is somewhat feeble. Treatment the same, without the syrup of morphia.

January 29th.—He is discharged to-day at his own request. He has gradually regained his strength.

Remarks.—This case is reported at considerable length, as illustrating several points of interest. In the first place, it is interesting to note the rapidity with which complete solidification and resolution of the upper lobe and half of the lower lobe of one lung took place, and apparently not influenced by the medicines given—at least, "resolution of inflammation" is not one of the properties ascribed to them. On the sixth day after the first positive signs of pneumonia were discovered, there was no notable difference between the two lungs, as determined by physical signs.

Another point is the existence of a well-marked cracked-pot sound over solidified lung. This sound is generally supposed to be indicative of a cavity, and is seldom spoken of in other conditions of the lungs. I consider it one of the least important diagnostic points of a cavity. I have repeatedly produced it both over solidified and healthy lung, especially by percussing over the roots of the lungs.

Still another point of interest is in regard to the chlorides in the urine. Simon and Reutenbacher first stated that the chlorides were absent from the urine during the onward progress of pneumonia, and returned to it when absorption of the exudation was about to commence. This is true only to a certain extent; it is not true that it marks precisely the two stages of the disease. The present case furnishes an instance in which it was almost the contrary. When the existence of the pneumonia was manifested by positive signs, the chlorides were present in moderate quantity; the next day there was no trace of them, and the physical signs showed that the pneumonia had advanced. But from this time, they were entirely absent until the 23d, when there was scarcely any disparity between the two sides of the chest. Resolution must have gone on in the meantime.

CASE II.—*Pneumonia affecting the whole of the Right Lung. Fatal.*—Mike M., aged twenty-three, Irish, laborer, admitted January 23d. He had been sick six days. I saw him first on the morning of the 24th. He attributes his sickness to a wetting he got a few days before, while on a steamboat. He remained on the boat until he was brought to the hospital. He first had nausea and vomiting; these were soon followed by cough, and pain in the right side. He took no medicine, and only ate some gruel; he had some wine the the last three days he was on the boat.

Present Condition.—The pain in the side is not so severe; he coughs considerably and expectorates freely; the sputa are semi-transparent, tenacious, and somewhat rusty; tongue dry, not furred. Respirations, 28; pulse, 120, feeble.

Physical Signs.—Vesiculo-tympanitic resonance on percussion over the upper lobe of the right lung; well-marked dullness over the lower lobe of the same lung; the interlobar fissure can be readily marked out, both by auscultation and percussion; well-marked bronchial respiration over the lower lobe, with bronchophony and an acute bronchial whisper; crepitant râle in the same situation. There is no trace of the chlorides in the urine.

Treatment.—One-sixth of a grain of acetate of morphia in half an ounce of solution of acetate of ammonia; one ounce of brandy every six hours; essence of beef, and milk, for diet.

January 25th.—He reports a little better; he slept well during the night; tongue, moist and clean; pulse, 112; respirations, 22. The physical signs indicate that the pneumonia is extending to the middle and upper lobes. There is marked vesiculo-tympanitic resonance over the upper lobe; broncho-vesicular respiration over the upper and middle lobes in front; posteriorly over the upper lobe, there is nearly pure bronchial respiration, where yesterday it was vesicular; no notable change in the lower lobe. There is no trace of the chlorides in the urine.

There is no change in the treatment, except that the stimulant is increased to one ounce of brandy every four hours.

January 26th.—His condition is much worse. He was very restless all night, and has now an anxious, troubled appearance; tongue moist, and somewhat furred; he is perspiring profusely; there is great capillary congestion about the face and prolabia. Respirations, 32; pulse, 128, and very feeble. The pneumonia has extended over the whole of the upper lobe, and the physical signs indicate complete solidification; the middle lobe is partly solidified. There is no trace of the chlorides in the urine.

Treatment.—The morphia is increased to one-fourth of a grain every four hours, and the brandy to one ounce every two hours.

January 27th.—There is no hope of recovery. Pulse, 140—very feeble; respirations, 24. The whole right lung is completely solidified; pure bronchial respiration is heard over the whole lung. He presents much the appearance of those patients in whose hearts after death white clots are found in the ventricles.

Treatment.—Five grains of carbonate of ammonia and one-fourth of a grain of sulphate of morphia every three hours; brandy, one ounce every two hours.

January 29th.—The patient succumbed at three o'clock yesterday

Autopsy, half an hour after death. The right lung was completely solidified. There was a small quantity of fresh lymph near the base of the lung posteriorly, but there was not more pleurisy than usually accompanies pneumonia. The right lung was perfectly healthy. On separating the lungs, and weighing them, I found the weights to be: of the right, 81½ ounces; of the left, 15½ ounces; the right

weighing 66 ounces more than the left. What a small proportion of the exudation in pneumonia is expectorated!

The heart was increased somewhat in size and weight; weight, 12½ ounces. There were no white clots in the heart, as I suspected; but it was distended with recently coagulated blood. The only evidence of disease was in the aörtic and pulmonary semilunar valves. These were extremely thinned, and in several places ruptured. There was no evidence of any cardiac affection during life.

CASE III.—*Pneumonia affecting the lower lobe of the Right Lung, and Pericarditis.*—Jessie Raymond, aged seventeen, American, laborer, admitted Feb. 6th. His health is generally good, and he is temperate. He was taken sick four days ago, after having got wet. He first had a chill, which was followed by fever, headache, general lassitude, and pains in all his bones. He was in bed two days before coming to the hospital. The pains and lassitude have continued all the time. During a portion of the time, he had a stitch in the right side, referred to the right nipple. He took no medicine, and ate his usual food. He has none of the physical signs of pneumonia.

February 7th.—Last night, he got ten grains of Dover's powder.

Present condition.—He has a dull aspect, and does not readily answer questions. There is considerable capillary congestion about the face, and he has a circumscribed flush on each cheek; tongue moist, but coated; he has just vomited; he craves cold drinks; he has pain in all his bones, and a stitch in the side; some cough, sputa-bronchial in character. Respirations, 36; pulse, 160, and very feeble. There is a slight cardiac murmur heard with the first sound near the apex.

Physical signs.—Notable dullness over the lower portion of the lower lobe of the right lung; respiration in the same situation, nearly pure bronchial, accompanied by a slight crepitant râle; voice bronchophonic. The chlorides are present in moderate quantity in the urine.

Treatment.—One grain of sulphate of morphia to be dropped on the tongue, one ounce of brandy every three hours, essence of beef and milk for diet, and ice-water.

Night.—He has vomited several times during the day, and the vomited matters had a sour taste. One scruple of bicarbonate of

soda and one grain of sulphate of morphia in two ounces of peppermint-water, are ordered to be taken at once.

February 8th.—He does not report any better. He slept but little during the night, and was continually calling for water; there is a circumscribed flush on each cheek; tongue moist, and a little coated; skin hot and dry; sputa bloody and tenacious. Pulse, 128; respirations, 32.

Physical Signs.—Marked dullness over the whole of the lower lobe of right lung; vesiculo-tympanitic resonance over the upper; the respiration is pure bronchial over the lower lobe, accompanied by a slight crepitant râle; there are also intense bronchophony and an acute bronchial whisper. The pneumonia has advanced very rapidly since yesterday. The chlorides are present in the urine in considerable quantities.

Treatment.—One-fourth of a grain of acetate of morphia in half an ounce of solution of acetate of ammonia every three hours; brandy, half an ounce every three hours; essence of beef and milk.

February 9th.—Last night, on account of the disposition to vomit, I ordered one grain of sulphate of morphia and two of calomel, to be dropped on the tongue. His condition has not improved; he rested but little during the night, and called repeatedly for drinks; he did not vomit during the night; skin very hot and dry; circumscribed flush on each cheek; he coughs but little and expectorates without difficulty; sputa very tenacious and rusty. Respirations, 52; certainly increased from some other cause than the pneumonia; pulse, 136, full and strong.

Physical Signs.—The lower lobe of the right lung is completely solidified. The remainder of the lungs are healthy. On applying the stethoscope to the heart, I discover a friction-sound heard with the movement of the heart. The apex-beat is raised above the nipple while in a sitting position. On percussion, the superficial cardiac region is considerably increased, showing some effusion into the pericardium. There is no trace of the chlorides in the urine.

Treatment.—Eight drops of the tincture of veratrum viride every two hours; the stimulant is stopped to observe the effect of the veratrum.

February 10th.—After taking three doses of the veratrum he commenced vomiting and purging; this continued two hours. I saw him then, and found the pulse reduced to 84. I ordered him some

brandy and ice water. At night he showed no inclination to vomit, but felt sleepy.

This morning there is a marked improvement; skin moist and cool; the depression of spirits has disappeared. Pulse, 100; respirations, 36. The sputa are abundant, and possess none of the pneumonic characters.

Physical Signs.—The dullness over the lower lobe of the right lung is not nearly so marked; over the lower third it is nearly vesicular in quality. The respiration in the same lobe is bronchial in the upper third, when the bronchial character begins to diminish, until, in the lower third, it is nearly pure vesicular; there are no râles. The pericardial friction-sound is barely heard; percussion still gives evidence of considerable effusion in the pericardium. There is no trace of the chlorides in the urine, although resolution is going on.

Treatment.—Five drops of the tincture of veratrum viride every three hours; half an ounce of syrup of morphia to be used as required for cough; one ounce of port wine every six hours; essence of beef and milk.

February 11th.—He took four doses of the veratrum yesterday, the last being doubled. It caused no nausea. He rested well during the night, and reports well this morning. He does not complain of thirst; tongue clean and moist; sputa very abundant and bronchial in character; slight stitch in the side when he coughs. Respirations, 32; pulse, 104. Resolution is still taking place; no notable change in the physical signs. The lithates are present in excess, but there is no trace of the chlorides in the urine.

Treatment the same, with the exception of the veratrum.

February 12th.—Pulse, 112; respirations, 28; general condition good. There is less dullness over the affected lung; it is only relative over the lower half; over the upper half of the lower lobe the respiration is broncho-vesicular with a crepitant râle; over the lower half it is vesicular. There is a slight increase of the pericardial effusion; the friction-sound is not heard. The chlorides are present in the urine in moderate quantity. Treatment the same.

February 13th.—He wants more to eat, and desires to get out of bed. Respirations, 25; pulse, 100. There is still less of the bronchial quality in the respiration over the upper half of the lower lobe: considerable dullness on percussion. The chlorides are present in the urine in abundance.

Treatment.—His diet is improved; wine four times; syrup of morphia as required for cough; he is permitted to sit up a short while.

February 14th.—He reports much better, and again complains of not getting enough to eat. He sat up one hour yesterday, and with apparent benefit. Pulse, 100; respirations, 18. The physical signs indicate so little difference in the two lungs, that I do not consider it necessary to examine them further. Percussion shows a slight diminution of of the pericardial effusion.

Treatment.—Full diet; wine three times a day.

February 16th.—When the effusion was greatest, the apex-beat of the heart was in the fourth intercostal space. It has now fallen to the fifth; the friction-sound is again heard, and quite distinctly.

February 18th.—He is discharged to-day.

Remarks.—In this case the change was remarkable after the vomiting caused by the tincture of veratrum viride. Whether the effect can be ascribed entirely to any properties in the medicine, I have my doubts. The nausea caused by it is very debilitating, and I am inclined to think that the same amount of nausea produced by tartar emetic, would have lowered the pulse as much as did the veratrum. It certainly produced no change until it caused nausea.

It is natural to suppose that adhesion of the pericardium to the heart took place in this case, as is usual, after acute inflammation of the serous surfaces. That this condition of the heart may exist for a long time without producing any perceptible effect, I am confident. A few days since, while making a post-mortem examination, I found the pericardium totally adherent to the heart, and it was evidently of long standing. The adhesion was so firm that I could with difficulty dissect any part of the pericardium from the heart. I saw the patient during life, and there was no evidence of any cardiac affection.

In this case, again, the chlorides did not prove a reliable test as to the condition of the lung.

Case IV.—*Pneumonia affecting the whole of the Right Lung and the lower lobe of the Left; complicated with Diarrhœa, Delirium Tremens, Fatty Liver, Pericarditis, and Organic Disease of the Heart. Fatal.* Carl M., aged twenty-seven, laborer, German, admitted Feb. 11th.

February 12th.—He states that he has heretofore enjoyed good

health; his present condition shows him to be an intemperate man; he has been on a spree for two weeks; he is quite nervous. He is subject to nose-bleeding, and his nose is now bleeding quite freely; sometimes it cannot be checked for hours. He has never had shortness of breath. Five days since he suddenly became insensible, while working, and fell down. He never remembers to have fainted before. When he became sensible, he had a chill, followed by fever. He immediately went to bed, and remained there until he came to the hospital. During this time he only drank some tea, and one day a little wine.

Present Condition.—He is quite pale from the loss of blood from the nose; tongue moist and slightly coated; respirations, 28; pulse, 120, full; very nervous.

Physical Signs.—Dullness at the upper portion of the lower lobes of both lungs; respiration bronchial in the same situations, but more intense on the right side; no râles. Upon examining the heart, I find the apex-beat somewhat lowered and carried half an inch to the left of the nipple, and the superficial cardiac region considerably enlarged. There are two murmurs heard at the base of the heart over the aörtic valves—the loudest occurring with the second sound, and transmitted backwards. There is a trace of the chlorides in the urine.

Treatment.—Last night he got ten grains of Dover's powder. To-day he is ordered one drachm of the tincture of digitalis every four hours; essence of beef, and milk.

February 13th.—He is still nervous, but he reports better; he rested well during the night; tongue dry; he has diarrhœa. He took three doses of the tincture of digitalis, but with no perceptible effect upon the heart. Respirations, 28; pulse, 120.

Physical Signs.—The dullness on percussion is not so great; the respiration corresponds; on the left there is scarcely any bronchial character perceptible in the respiration. There is no trace of the chlorides in the urine.

Treatment.—Two grains of opium, three times; one ounce of wine, four times; essence of beef, and milk.

February 14th.—He became delirious last night. I ordered him two grains of opium every two hours until he slept. He became so violent that it was necessary to strap him down. He took six grains of opium during the night; this morning he is under the in-

fluence of the opium, and is disposed to sleep. Tongue dry; the diarrhœa has stopped. Respirations, 24 ; pulse, 112.

Physical Signs.—The bronchial respiration is more intense on both sides, but has not extended. There is no trace of the chlorides in the urine. He is not delirious.

Treatment.—One ounce of brandy, three times; essence of beef, and milk.

February 15th.—Last evening he again became somewhat delirious; I gave him four grains of opium, and he slept all night. This morning he answers coherently, and there is no evidence of delirium. Tongue dry; pulse, 108; respirations, 28.

Physical signs.—The pneumonia has extended a little on both sides, but still extends over a greater portion of the right lower lobe; there is a marked vesiculo-tympanitic resonance over the upper lobe of the right lung.

There is no trace of the chlorides in the urine.

Treatment.—One ounce of brandy every six hours, essence of beef, milk and ice water ; two grains of opium at night.

February 16th.—He did not sleep much ; he had several stools during the night and got out of bed each time. It was quite cold during the night. There is a great change for the worse this morning. The breathing indicates distress ; the heart is acting with great force and frequency ; tongue very dry and cracked. Respirations, 44 ; pulse, 120, strong and full. On placing the stethoscope over the heart, I discover a very loud pericardial friction-sound all over the cardiac region ; there is no effusion in the pericardium. The pneumonia has also taken a fresh start. The physical signs indicate complete solidification of the lower lobe of the right lung and more extensive inflammation of the lower lobe of the left lung ; there are no râles.

There is not a trace of the chlorides in the urine.

Treatment—Eight minims of the tincture of veratrum viride every hour, anodyne enema at once, one ounce of brandy every three hours, essence of beef.

February 17th.—By mistake the nurse gave him one drachm of the tincture of veratrum viride between twelve and two o'clock, I went to the ward at three o'clock, P. M., and found him vomiting and very much depressed, pulse very feeble. His diarrhœa had been very bad all day. I ordered him brandy in ice water

at once. At night there was apparently much improvement. The respirations had diminished in frequency, and he no longer complained of difficulty of breathing. Pulse, 80, regular and full. This was at half past five. He died at ten o'clock, P. M.

Autopsy.—I found the upper and middle lobes of the right lung partly solidified, and complete solidification of the lower; about half of the lower lobe of the left lung was solidified and there was commencing pneumonia in the upper. The inflammation of the upper and middle lobes must have taken place very rapidly, as I examined them carefully on the fifteenth and there were no physical signs indicating pneumonia. The weight of the right lung was fifty-six ounces. That of the left thirty-five ounces; both considerably heavier than normal.

On examining the heart there was abundant evidence of recent pericarditis. Both the pericardium internally and the heart were covered with recently effused lymph, presenting a reticulated appearance. The heart was considerably enlarged; it weighed twenty ounces. The enlargement was by hypertrophy. The wall of the left ventricle being about an inch thick, double the normal thickness. The aortic semilunar valves were thickened and considerably contracted—sufficiently so to cause the two murmurs heard. White fibrous clots were formed in the ventricles extending into the aorta and pulmonary artery. These by experience have been found common in pneumonia, and I have seen the diagnosis of them verified in several instances. In all, the principal symptoms were that the heart, without any appreciable cause, began to act very frequently and feebly, and the patient became very much depressed. Death following not very long after.

The liver was of the kind denominated "fatty liver," and microscopic examination proved a superabundance of fat. It was much enlarged, weighing eight pounds and five ounces. The small intestines gave evidence of considerable inflammation. I did not examine them carefully.

Remarks.—The dose of the tincture of veratrum viride given in this case, was larger than I had ever given, though I have seen it given in drachm doses and without any apparent injurious effects. That it had anything to do with death in this case, I cannot think. The patient was in much better condition three hours after taking it than before, and it would have been a miracle for any one with the complications in this case to have recovered.

Case V.—*Pneumonia affecting the middle lobe of the right lung and anterior portion of the lower lobe and pleurisy.*

February 16th.—Andrew Cole, aged thirty-eight, ship-carpenter, American, admitted February 15th, in the evening. He is not intemperate, and generally enjoys good health. He has been sick three weeks with intermittent fever, for which he took medicine and checked it. Four days ago he felt a sharp stitch referred to the right nipple; he had had a cough for one week before and had not been at work.

Present condition.—He is somewhat anæmic; tongue coated; he has great pain in the right side; the decubitus is on the left side, and he can get ease in no other position. Respiration, 24; pulse, 88.

Physical signs.—There is dullness over the middle lobe and anterior portion of the lower lobe of the right lung; in the same situations, the inspiration is nearly imperceptible, but the expiration is prolonged and bronchial in character; bronchophony and acute bronchial whisper are also heard. In addition, there is a very loud friction-sound heard over nearly the whole right lung, but loudest near the nipple. There is no effusion. There is a very slight trace of the chlorides in the urine.

Treatment.—Six grains of quinine and one of opium three times, six drachms of the syrup of morphia, to be used as required for cough, one ounce of brandy three times, essence of beef and milk; a sinapised flax-seed meal poultice to the side.

February 17th.—He reports better; the pain in the side is much less; he is not compelled to lie in any particular position and can draw a long breath. Respiration, 16; pulse, 90.

Physical signs.—None of the physical signs are so intense as yesterday. The friction-sound is neither so marked nor so much diffused. There is no effusion; no cardiac affection.

The sputa are somewhat tenacious and semi-transparent. The chlorides are present in moderate quantity in the urine. Treatment, the same.

February 18th.—There is no notable change in the physical signs. He has diarrhœa. The chlorides are present in at least their natural quantity in the urine. Treatment the same, with the addition of two grains of opium three times.

February 19th.—He reports much better. Respirations, 20; pulse 92. The diarrhœa is checked.

Physical signs.—Over the middle lobe there is well marked amphoric resonance and a cracked-pot sound; the respiration possesses much less of the bronchial quality; voice, bronchophonic; the friction-sound is still intense about the nipple, but there is no effusion.

The chlorides are present in the natural quantity in the urine.

Treatment.—Half an ounce of syrup of morphia—to be used for cough, one ounce of brandy three times, essence of beef, chicken.

February 20th.—He again reports much better. He still coughs a little. Pulse, sixty; respirations, twelve. The respiration over the affected lung is now nearly pure vesicular; the friction-sound is much feebler and much less diffused. His basin is nearly half filled with sputa, which is bronchial in character.

The chlorides are present in the urine in the natural quantity.

Treatment.—One drachm of the compound tincture of cinchona three times a day, one ounce of brandy three times, and good diet.

There was nothing else notable in this case. He continued to improve until the 24th, when he was discharged at his own request.

The friction-sound had entirely disappeared and the lung had returned to its normal condition as far as could be determined by physical signs.

Remarks.—It is a notable point in this case that the pneumonia was confined to a small and unusual portion of the lung. Though it was certainly influenced to slight extent by the medicines given. It is also notable that so extensive a pleuritis, as indicated by the pain and friction-sound, should have disappeared without effusion.

CASE VI.—*Pneumonia affecting the whole right lung.*—Peter Allen, aged thirty-five, Irish, laborer, admitted February 20th. He is a large muscular man and has been sick three days. He is not very temperate. He does not pretend to account in any way for his present sickness. He first had a chill, which was followed by fever, and pain near each nipple so severe as to prevent him from sleeping. He remained in bed two days before coming here, and during that time used nothing but water. He took a dose of castor oil which he vomited up. He also vomited before he took the oil. His breath is bad and tongue coated; the decubitus is on the side opposite the pain. Respirations, 28; pulse, 116.

Physical signs.—Dullness posteriorly over the upper lobe and upper portion of the lower; in the same situations, the breathing is bronchial, with bronchophony and whispering bronchophony.

There is no trace of the chlorides in the urine.

Treatment.—Eight minims of the tincture of veratrum viride every hour, ice water, essence of beef and milk.

February 21st.—He does not report any better. He took five doses of the veratrum viride yesterday; some time after taking the last, he commenced vomiting and continued vomiting for two hours. After taking the third dose, the pulse was 100; I did not see him after vomiting. This morning the pulse is 100, and stronger than yesterday; respirations, 28. He has taken two doses of the veratrum to-day but with no diminution of the pulse. His aspect is comfortable; tongue coated and breath fœtid; there is a slight pain in the right side. While in the recumbent position, I cannot hear the heart-sounds, but can discover a slight aòrtic direct murmur. He had rheumatism some years ago.

Physical Signs.—Dullness over the whole of the upper lobe of the right lung and upper portion of the lower, as far as the inferior angle of the scapula. In the same situations, there is bronchial respiration, but not intense; there are no râles. There is no trace of the chlorides in the urine.

Treatment.—The veratrum is continued, one ounce of brandy three times, essence of beef and milk.

Noon.—The third dose made him vomit, and he has been vomiting ever since. The effect has been very debilitating. Pulse, 60; extremely feeble. Half a grain of sulphate of morphia is ordered to be dropped on the tongue, and half a grain in the evening.

February 22d.—He reports and looks better. His tongue is still coated in the center, but moist. Respirations, 24; pulse, 96, full.

Physical signs.—Dullness over the whole right lung; posteriorly over the upper lobe and upper half of the lower, the respiration is intensely bronchial; there is also bronchial respiration over the upper lobe anteriorly, but not intense; over the lower half of the lower lobe it is broncho-vesicular; the voice corresponds to the respiration. There is no evident advance in the pneumonia since yesterday.

The chlorides are present in the urine in moderate quantity.

Treatment.—One-fourth of a grain of acetate of morphia in half an

ounce of solution of acetate of ammonia every three hours, one ounce of brandy three times, essence of beef and milk.

February 23d.—He slept but little last night and could with difficulty be kept in bed. He is quiet this morning, tongue dry. Respirations, 20; pulse, 96. There is no notable change in the physical signs, except that over the middle lobe, where the respiration was vesicular yesterday, it is now pure bronchial—showing some advance; yet the chlorides are present in the urine in abundance. Treatment the same.

February 24.—The patient was again delirious and did not sleep much last night. He had several stools during the night. This morning he is comfortable. Tongue clean and moist. Respirations, 20; pulse, 88, full. Last night I gave him twenty minims of the veratrum in two doses, as his pulse was considerably accelerated. It had diminished it to about 80 by eight o'clock, P. M.

Physical signs.—Dullness over the whole right lung except the middle and lower lobes anteriorly, where it is vesiculo-tympanitic; there is a crepitant râle over the front portion of the lung; there is less of the bronchial quality in the respiration than yesterday. The chlorides are present in the urine in considerable quantity. He does not cough and there is no expectoration.

Treatment.—Two grains of opium three times; remainder the same.

February 25th.—There is again improvement. He coughed a good deal last night but expectorated but very little He was not delirious; tongue moist and clean. Respirations, 20; pulse, 88. Resolution is taking place, as shown by the physical signs. The chlorides are present in abundance in the urine. Treatment the same.

February 26th.—He rested well, but coughed occasionally. Sputa so tenacious that they are expectorated with the greatest difficulty. They are rusty and semi-transparent, but in very small quantity. He was troubled with diarrhœa last night. Pulse, 80; respirations, 24. The bronchial quality of the respiration is notably less; all over the lungs there are crepitant and sub-crepitant râles. There is but a slight trace of the chlorides in the urine.

Treatment.—Syrup of morphia half an ounce, to be used as required for cough; stimulants and diet the same.

February 27th.—There is improvement in every respect. He

wants to get up. He coughed occasionally during the night without being able to expectorate much; sputa transparent and very tenacious. Pulse, 80; respirations, 24. The dullness is not so marked over any portion of the lung affected; over the middle lobe the resonance is vesiculo-tympanitic, with a cracked-pot sound. The respiration over the upper lobe is broncho-vesicular, vesicular over the middle. There is a crepitant râle in both situations. Posteriorly, the respiration is broncho-vesicular, except over the lower half of the lower lobe, where it is vesicular. The urates are present in the urine in excess, the chlorides are present in moderate quantity.

Treatment.—One grain of opium four times, one ounce of brandy three times, essence of beef and milk.

From this time he continued to improve until March 6th, when he was discharged. The lung had returned to its normal condition. The after-treatment was syrup of morphia for cough, good diet, and brandy three times a day.

Remarks.—A point of interest in this case is, that resolution should have taken place after solidification of the whole of the right lung, and there was not more than half a pint of expectoration, and yet the resolution was not very slow.

In regard to the use of the tincture of veratrum viride, I cannot see that it influenced the case any more than tatar-emetic would have done, given in small doses, and without producing the debilitating effects and distressing vomiting of the veratrum. In Case III, it did seem to answer a good purpose, as the improvement was so marked and immediate after its use. In other cases in which I have seen it used, its effects were very uncertain. I cannot think its virtues as great in pneumonia as contended for by some. In this case, also, there were amphoric resonance and a cracked-pot sound where there was evidently no vomica.

To these cases of pneumonia, I add a case of sciatica, of long standing, treated by the subcutaneous injection of atropine:

Wm. Dewayne, aged thirty-five, Irish, laborer, admitted January 28th. He had had a pain following the course of the sciatic nerve for seven months; and, during this time, had never obtained sufficient relief to enable him to work. When admitted, he was unable to sit upon the hip of the affected side, and required opiates at night to sleep. The muscles of the leg were atrophied for want of use. He said he had taken a great many different kinds of medi-

cines, and he had marks upon him of issues, setons, and blisters. I treated him for a month with the most approved remedies, and with no benefit. I then determined to try the subcutaneous injection of atropine. The first day I injected into the hip over the seat of the greatest pain, one-ninetieth of a grain. This produced slight dizziness and some dilatation of the pupils. The next day I injected one-fiftieth of a grain near the other. This produced more marked effects, and confined him to the bed all day. From this time, he never complained of pain, and soon acquired full use of his leg. I kept him in the ward two weeks to see if the pain would return. It did not, and he said he felt no pain when he was discharged.

ART. VIII.—*Urethro-Vaginal, Vesico-Vaginal, and Recto-Vaginal Fistulæ; Report of Cases Successfully Treated with the Button Suture:* By NATHAN BOZEMAN, M. D., of New Orleans. (Continued from Vol. XVII, page 356.)

CASE XXXII.—*Vesico-Vaginal Fistula, complicated with great contraction of the Vagina; fistulous opening closed at the first operation; afterwards partial reproduction; patient finally discharged cured.*—Elizabeth, colored girl, servant of Dr. Applewhite, of Ceralvo, Miss., was sent to me for treatment Dec. 24th, 1858. She is about twenty-five years old, tall and rather slender, and says that she has had three children at full term. Her first was born at the age of fourteen; her second, at twenty-two; and her third, about two years ago, at which time her bladder was injured. The first labor was short and easy, and the child did well. The second was a little more tedious, and the child came dead. The third was unusually protracted, lasting about six days, and the child was still-born: no instruments were employed to aid delivery. She says that the catheter was used during labor to relieve the bladder. Two days after delivery first noticed dribbling of urine, which has continued to the present moment. Menstruation for sometime past has been regular, and to all appearances the general health is good.

Examination.—External parts of the genital organs very much

excoriated by the urine. The introduction of the speculum showed the vagina to be considerably shortened and contracted. The fistule belonged to my fourth class, first variety. Only a very small portion of the urethra, however, appeared to be involved with the trigone of the bladder. The fistule was transversely oval, and its anterior edge admitted of very little motion. The constricted point was just above the fistule and extended around the entire canal. The case, therefore, required some preparation before closure of the fistula could be undertaken. This consisted in making deep incisions in the constricted part, and then dilating the canal in the usual way with bags of oiled silk stuffed with bits of sponge. This course was continued until the incisions healed, and the constricted part appeared to be overcome, which was not until some weeks had elapsed.

Operation.—In March, although the parts were not in a condition as favorable as I could have wished, yet I concluded to make an attempt to close the fistulous opening. Seven sutures, were introduced, and a button of the ordinary shape for this class adjusted. Removed the suture apparatus on the ninth day and found union complete throughout. The patient wore the catheter a few days longer and then got up with full control over the urine. After several days more, however, it was found that slight leakage had taken place. An examination now revealed the fact that a reproduction of the fistule at the left extremity of the cicatrix had taken place. This unfortunate result evidently took place from recontraction of the vagina, thus causing the edges of the fistule to be pulled asunder. After preparing the parts again I proceeded to close the small opening that remained. Only two sutures and an ordinary shaped button were required. The apparatus being removed after the usual length of time, no union was found to have taken place. This result I attributed to impaired health of the patient. She was now sent to the country for a change. There she improved very rapidly, and in a few weeks was in a favorable condition for another operation. This was performed in the same manner as the preceding. The result was conclusive, and soon our patient was able to return home entirely relieved.

CASE XXXIII.—*Recto-Vaginal and Vesico-Vaginal Fistules of long standing; both found to be incurable and the patient discharged with-*

out an operation being attempted. Creasy, colored girl, aged about twenty-seven, was sent to me to be treated for the above injuries by Major Bush, of Calhoun county, Ala. Patient stated that she was confined with her first child eleven years before, at which time she became afflicted. The child came at full term and was of large size. Labor was protracted and instruments had to be used. Craniotomy was performed. After delivery, had no control over either the urine or feces. Both passed into the vagina and there becoming commingled made their escape together, thus rendering the poor sufferer an object of the greatest commiseration as well as disgust.

Examination.—The external genitals were found swelled, indurated, excoriated, and to some extent covered with earthy concretions. The slightest separation of the labia caused the most intolerable suffering. Consequently a very unsatisfactory view could now be had of the internal parts, but the nature of the discharges showed very conclusively the kind of injuries existing in the case. It was thought best, and indeed it was absolutely required, to reduce the inflammation in the external parts before any further examination be attempted. Quietude, removal of earthy deposits, cauterization, the free use of cold water, and a gentle course of tonics constituted the treatment. The patient improved rapidly and soon we were enabled to make another examination. We could now see, though imperfectly, owing to the great contraction of the vagina, all the parts implicated. It was found that the recto-vaginal septum from within three-quarters of an inch of the anus, and nearly as far up as the cervix uteri, was almost entirely destroyed. The edges of the opening were hard, unyielding, and remotely separated from each other, and did not admit of the slightest approximation. A view of the opposite side of the vagina now showed that the injury here too was extensive. Pretty much the whole of the septum was gone, together with the greater part of the urethra, and the contraction of the surrounding parts was great. The uterus was drawn low down and appeared to be fixed and immovable. The opening in the bladder was not larger than would admit the index finger, and its edges had very much the feeling of a hole through a board. Not the slightest impression could be made upon them towards approximation. Dilatation of the vagina was now attempted after making some incisions into the constricted parts, though little or no change was effected in the condition of things from that above described.

The opening in the bowel, therefore, afforded no chance whatever of anything being accomplished by an operation. As to the opening in the bladder, though comparatively small, I considered it a waste of time, and causing the patient unnecessary suffering to even attempt an operative procedure. The urethra having been destroyed, no hope could be entertained that the patient would have any control over her urine even should an operation be ever so successful as regarded the opening in the bladder. Under the most favorable circumstances it would have been necessary to maintain an outlet for the urine, and the escape of this through an opening left for the purpose could not have been otherwise than involuntary. Thus, in no respect would the patient have been benefited. The case, therefore, was abandoned as hopeless.

Remarks.—The above case I have thought proper to include among my other reports: it is certainly not without interest, and affords a very striking example of the incurability of some of the injuries of which we are treating. The case is also worthy of note on the ground of being the first in my practice in which it was thought useless to make an application of the button suture. Only one case before this having been operated upon according to this method and afterwards discharged uncured.

Case xxxiv.—*Vesico-Vaginal Fistule, complicated with contraction of the Vagina: first operation successful.*—Tobitha, colored girl, aged about twenty-five, property of Adam Harden, of Auburn, Alabama, was admitted January 19, 1859, laboring under the above-named disease. She stated that the accident occurred with her fourth child, all previous labors having been easy. This time it lasted about seventy-six hours. The child was of large size, and had to be removed with instruments. Soon after delivery first noticed dribbling of urine.

Examination.—Fistule found to belong to the third class of Velpeau, being situated about the centre of the *bas fond* of the bladder, and large enough to admit the end of the index finger. The vagina at this point was very much contracted, and had to be opened by deep incisions on each side. To prevent recontraction, sponge tents were used until our incisions healed up, when the parts were considered in a favorable condition for closure of the fistulous opening.

Operation.—April 21, I proceeded to operate, in the presence of

Dr. Dugas, Professor of Surgery in the Medical College of Georgia; and Dr. Holt, formerly of the Russian Army in the Crimea. There was nothing worthy of note in the operation. Four sutures and a common shaped button were called for. On the eighth day, they were removed, and the cure found complete. The patient soon got up, with entire control over her urine.

CASE XXXV.—*Vesico-Vaginal Fistule of large size; first operation successful.* Nancy, colored girl, about twenty-five years old, property of Mr. Pendleton, of Pembroke, Kentucky, was admitted April 9, 1859. She states that she was confined with her first child about five years ago: labor was tedious, and the child had to be taken from her with instruments. Her second labor was natural, and the child did well. The third took place a year ago, at which time she became injured. It lasted this time about thirty-six hours, and was terminated by opening the child's head, and delivering in that way. Very soon afterwards, noticed dribbling of urine, which has continued uninterruptedly to the present time.

Examination.—Fistule belonged to our fourth class, third variety. Some contracting bands of the vagina. These required to be cut and treated in the usual way before closure of the fistule could be undertaken.

Operation.—April 25, I performed the final operation. Present, Drs. Gaston and Norton, of Montgomery, and Dr. Johnson, of Tuskegee, Ala. The different steps of the operation were very tedious. Nine sutures, five to the left and four to the right of the urethra, were required. The button, formed from the nature of the parts upon which it had to rest, presented a curve in the middle upon its concavity, and towards each end *vice versa*.

The adjustment of the apparatus was complete. The patient went through the after-treatment without an untoward symptom. Removed suture apparatus on the ninth day and found union of the parts perfect. The patient on getting up found that she had as good control over the urine as she ever had, and soon left for her home.

CASE XXXVI.—*Vesico-Vaginal Fistule of large size, complicated with narrowing of the vagina; fistule closed at the first operation.*—While on a visit to Memphis, in May, 1859, I was requested by the late Dr. Robards and Dr. Taylor of that city, to examine the above case

which had just arrived there from Grand Glaze, Ark. They said they regarded the case in an unfavorable light as regarded the chances of a successful operation, and that they wished to have my opinion. This being favorable they very kindly turned the case over to me for treatment. The following are my notes of the case: Emily, colored girl, aged about twenty-four, property of Geo. M. Smith, was admitted May 13th, 1859. She is short and heavily built, always enjoyed good health until the birth of her second child in March last, at which time she became the subject of her present affliction. Her first labor at the age of twenty, was quite tedious, notwithstanding the child was small. The second labor lasted four days, and the child was still-born. No instruments were employed. Says that she does not recollect to have passed any urine for some time before her delivery and that she suffered great agony on account of it. No catheter was used. Never passed any urine the natural way after the birth of the child.

Examination.—Nothing unnatural in the pelvic dimensions. Fistule found to belong to our fourth class, third variety. It was of very large size, admitting easily three fingers at once into the bladder. Through it protruded the fundus of the bladder, which upon the slightest exertion of the patient would appear at the vulva in the form of a large fleshy tumor. In addition to this the vagina was contracted to a considerable extent by hard and unyielding bands. As a preliminary step I cut these and thereby restored the vagina to its normal dimensions. Recontraction was prevented by the ordinary means.

Operation.—May 26th. Everything being in readiness I proceeded to operate in the presence of Drs. Gaston and Norton, of Montgomery, and Dr Knott, of Alamucha, Miss. There was nothing peculiar about the procedure. Nine sutures were required. The line of approximation was somewhat semicircular, the concavity of course presenting upwards. The button was accordingly fashioned to suit the indications. Not an untoward symptom occurred in the after-treatment. Ninth day removed the suture apparatus: cure found complete. Patient in a few days more got up with entire control over her urine.

Case xxxvii.—*Vesico-Vaginal Fistule complicated with contraction of the Vagina: first operation successful.* Lucy, colored girl, aged

about twenty-two, property of Patrick Calhoun, of Pike county, Ala., was very kindly sent to me for treatment by Dr. Jones of Tuskegee. She is of medium size and good form. Says that she was confined with her first child at the age of twenty; labor was hard; child of large size and still-born. Second labor took place at full term about a year ago, at which time she became injured. This time it lasted three days; child of large size and still-born. No instruments were employed. Several days after delivery first noticed dribbling of urine which has continued to the present time. General health pretty good, menstruates regularly.

Examination.—Conformation of the pelvis so far as could be determined was natural. Vagina constricted at its upper part. Fistule belonged to our fifth class, first variety.

The patient now being in a favorable condition I proceeded to divide the strictured portion of the vagina, my distinguished friend, Dr. J. C. Nott, of Mobile, being present. The usual means were employed to prevent recontraction. A couple of weeks sufficed to place the parts in a good state for closure of the fistule.

Operation.—July 14th, the operation was performed. Four sutures were required and the usual shaped button for this variety of fistules (see fig. 13 op. Cit.). Ninth day removed suture apparatus and found union of the parts complete. The patient after a few days got up with entire control over the urine.

CASE XXXVIII.—*Vesico-Vaginal Fistule of large size: incarceration of the cervix uteri in the bladder, with partial loss of substance: uterus restored to its normal position, and the fistulous opening closed.* Louisa, colored girl, aged about twenty-five, belonging to the estate of Clark Taylor, in Montgomery county, Ala., was admitted February 21st, 1859. She is of medium stature, stout and well formed. Says that she was confined with her third child in November last, at which time her bladder was injured. Her two previous labors were unattended with difficulty. The last time she states the "waters broke" a week before labor pains set in, she being up and about at the time. Labor, when it did take place, terminated naturally in about eighteen hours. No difficulty was experienced during labor in passing the urine nor until three or four days afterwards, when it began to dribble away.

Examination.—Fistule was found to belong to our fifth class,

fourth variety, with the addition of incarceration of the remaining part of the cervix uteri in the bladder (see op. Cit.). The opening was large enough to admit barely the passage of two fingers. The anterior lip of the cervix had sloughed away, and the remaining portion was firmly fixed in the abnormal position above mentioned. The menstrual flow consequently was turned into the bladder instead of the vagina. Owing to the change of relationship in these parts the size of the vagina was much diminished, which increased very considerably the difficulty of our exploration.

The preparatory treatment in the case consisted in cutting the constricted portion of the vagina, and then enlarging the fistule laterally, so as to admit of a disengagement of the neck of the uterus from its confined situation. This being done a sponge tent large enough to fill the vagina was introduced. Twice a day this tent was removed and injections of cold water used. By this course the canal was kept dilated and the uterus thereby prevented from returning to the mal-position in which it was found.

Now owing to the poisonous effects of the urine our incisions assumed an unhealthy aspect which prevented us from performing the final operation as soon as we might otherwise have done. Indeed when we did operate the left angle of the fistule presented a somewhat unhealthy appearance which we feared would have an unfavorable influence in determining the result.

Operation.—May 16th, operated. For an account of this mode of procedure, see cases xv and xxviii. The only difference in this case being the disengagement of the cervix uteri from the bladder by a separate operation instead of doing it at the time the closure of the fistule was undertaken as of the above two cases. Seven sutures were required. The button was of a peculiar shape; it was bent upon its convexity and then twisted to such an extent as to meet the requirements of the parts upon which it was to stand. The introduction of the sutures was exceedingly tedious, though the patient bore the pain and fatigue of the operation remarkably well. Upon being put to bed, however, she complained of considerable soreness across the lower part of the abdomen. This continued to increase, and in a few days was accompanied with high fever. As the latter appeared to be of a remittent type I was induced to prescribe a little quinine, thinking it might control it. However justifiable this practice may be under ordinary circumstances, it

certainly did not turn out well in the present instance. Vomiting was induced by it and its obstinate persistence, in spite of our efforts to control it, caused a leak to take place in the bladder. Up to this time nothing of the kind had been observed.

The suture apparatus was removed on the ninth day, and as we expected, a partial failure was found to exist. The opening just under the os uteri, was about large enough to admit a number six bougie. Another operation, therefore, was called for. This I performed August 1st, and thus completed the cure. The patient got up with entire control over her urine, though her general health was much impaired. It was several months before the latter was reinstated.

The cervix uteri I should have said was completely restored to its normal position, and menstruation thereby turned through its proper channel.

CASE XXXIX.—*Vesico-Vaginal Fistule attended with narrowing of the vagina, and partial loss of the use of the lower extremities. Treatment successful.*—Maria, colored girl, aged about eighteen, property of Mr. Cook, of Virginia, was admitted July 6th, 1859, afflicted as above stated, She is rather under the medium size, delicately formed and appears to be in a bad state of health. States that she was confined with her first child last May, and was in labor about forty-eight hours. The child was of large size and had to be taken from her with instruments. Does not recollect to have had any trouble with the bladder during labor, but soon afterwards discovered that the urine was passing off through the vagina, which it has continued to do to the present time.

Examination.—Patient very much emaciated; external genitals extensively excoriated. The introduction of the speculum caused the greatest suffering. Fistule belonged to our fourth class, first variety, transversely oval, and had a hard and unyielding anterior border. The posterior was also unyielding, though not to such an extent as the former. This was found to be owing to extensive contraction of the rectal wall of the vagina. Here the slough had been extensive, and the consequent cicatrization and contraction doubtless caused the peculiar condition we have mentioned of this border of the fistule. It could not be brought down sufficiently far to meet the one of the opposite side. The division, therefore, of this

contracted band was immediately called for. This I did in several places, and then commenced the use of sponge tents, in the manner heretofore pointed out, giving the patient at the same time a good diet and tonics.

Under the above course the patient's general health improved rapidly, as well as the condition of the vagina. By the time our incisions had healed up, the constricted part was pretty much entirely overcome; at all events, so far as to justify an attempt at closure of the fistulous opening.

Operation.—August 26th I operated in the usual way. Used six sutures and a button of the ordinary shape. (See Fig. 11, Op. Cit.)

The case progressed very well through the after-treatment. Removal of the suture apparatus, on the eighth day, showed that the fistule had closed up all to a very small point at the left extremity of the cicatrix. Another operation, therefore, was called for.

The patient, after getting up, improved more rapidly than ever, and soon acquired very good use of her lower extremities.

In October I performed the operation for closure of the small remaining fistule. Employed only two sutures and a plain button. Result successful. The patient, after getting up, had a little incontinence of urine, doubtless caused by the loss of substance at the neck of the bladder. Gave tincture of cantharides, which improved this condition of things very much, though she still had slight incontinence at the time of her discharge. Now she had almost entirely regained the use of her limbs.

CASE XI.—*Vesico- and Recto-Vaginal Fistules; almost complete closure of the Vagina with thickening and Ulceration of the Labia Majora; the Vesico-Vaginal Fistule incurable; the Recto-Vaginal closed, and the condition of the patient thereby vastly improved.* Ann, colored girl, aged about twenty-five, property of Col. J. D. Hawkins, of Texas, was admitted December 27th, 1858. She is short and stout and never had any sickness until the birth of her first child, February, 1857, when she became injured. Says that she was in labor five days, and, the child being large, instruments had to be resorted to. Had no difficulty in passing the urine up to the time of delivery; but, after this, had no desire to do so. Not only dribbling of urine, but loss of control over the feces was now found to have taken place. For a long time after this, both the internal and external parts remained sore.

A physician, of some little experience in New Orleans, was finally consulted; but, after keeping the patient a considerable length of time, he discharged her, without having accomplished any permanent good by his treatment.

Examination.—The buttocks were found extremely excoriated; the labia majora thickened, indurated and covered with numerous small and irritable ulcers. The slightest separation of the latter, to obtain a view of the entrance of the vagina, occasioned the most excruciating pain. The canal, itself, was found to be so much contracted as scarcely to admit of the introduction of a finger. Not only urine, but fecal matter issued from it—showing that the rectum was the seat of injury as well as the bladder. As to the situation and nature of these injuries, however, I could not at first determine. Removal of the inflammation of the external parts and dilatation of the vagina, I conceived to be of primary importance before any further examination could be attempted.

Accordingly, I set to work—first, to counteract the poisonous effects of the urine as far as possible, and to remove the inflamed and ulcerated condition of the parts; secondly, to dilate the vaginal canal. The former was done by quietude, cauterizing the ulcers with nitrate of silver, using cold water freely, and giving demulcent drinks. The latter was effected, though imperfectly, by incisions and the use of sponge tents.

The above course was rigidly pursued for several weeks, and with marked improvement. An examination, now being made, we were enabled to discover the nature of the injuries we had to contend with. The vesico-vaginal fistule, although small, presented a most unfavorable aspect. It belonged to our fifth class. The edges were thin, hard and unyielding, and felt almost like the impression imparted to the finger when passed through a small hole in a board. Such a result could only have taken place from extensive sloughing of the vesico-vaginal septum. Nearly the whole of this was wanting, and the greater portion of the urethra. All that remained of the latter was a narrow bridle, perhaps the third of an inch in width.

The *recto-vaginal* fistule was situated about two inches from the anus, and readily admitted the passage of the index finger. The edges of this too were hard, though possessing some mobility.

As to attempting to close the vesico-vaginal fistule, I considered it absurd. It would have subjected the patient to the most excru-

ciating pain, and been followed, I considered, by little or no benefit, however successful the operation might have been. But even a hope of the latter we could not for a moment entertain.

The peculiarities of the edges of the fistule described, precluded the possibility of entire approximation, and without this there could have been no union. In the second place, could the edges of the fistule have been brought into such relationship as to insure union, this could only have been allowed to take place to a certain extent, because of the destruction of the urethra. Necessity required that an opening be maintained at some point in the bladder for the passage of the urine, and although this may have been much smaller than the original, yet the result, so far as regarded the dribbing of the urine, would have been precisely the same as before the operation. So I concluded to do nothing with this fistule, but turned my attention to the one in the bowel, believing that if this one could be closed our patient's condition would be incalculably benefited. Before undertaking the operation, however, I knew that I would have one very great difficulty, if no more, to contend with—namely, the uncontrolled urine. The constant escape of it into the vagina I knew from past experience, would exert an unfavorable influence over the healing process, and thus cause a failure, unless the edges of the fistule could be effectually protected against it. In view of such an obnoxious influence, therefore, I adjusted our button contrivance with all possible precision, and awaited the result. On the eighth day the apparatus was removed, and the cure found complete. The patient, upon getting up, had full control over her feces, and very soon regained, in a great measure, her wanted health.

Remarks.—The result, in the above case, although not as satisfactory as could have been wished, yet it is one not devoid of interest to the surgeon. It affords a striking example of what may, or may not be done under a certain combination of circumstances. The patient's present condition, though as loathsome as one could well imagine, still it is comfortable, compared with what existed previous to the commencement of our treatment.

This case is also interesting, as affording a second example of vesico-vaginal fistule, in which it was thought useless to make an application of the button suture.

(*To be Continued.*)

ART. IX.—*Contributions to Comparative Anatomy and Physiology. (Crocodilidæ.)* By BENNET DOWLER, M. D.

NUMBER FOUR.

Anatomy, in so far as it demonstrates and compares the structure of different species of animals, deserves, in an equal degree, the attention of the physiologist, of the zoölogist, and of the philosophic physician; for whilst it facilitates the approach of the first to the secrets of organic powers, and enables the second to discover the internal and external relations of animal life, it promises to afford the last a clearer view of the true nature of many morbid productions and conditions of the human body. CARUS. *Comp. Anat.* (1st ed. Translated by GORE. 1827.)

* * * Qu'un rayon de l'anatomie philosophique vienne encore à tomber sur elle, qu'lle soit vivifiée par cette importante notion que le règne animal est uniquement l'idée de l'animalité dispersée dans l'espace et le temps, que chaque genre, chaque espèce même offre un certain côte, une certaine particularité et remplit en quelque sorte les fonctions d'un organe dans le grand tout, alors elle deviendra également une des branches plus intéressantes de l'histoire de la nature, et nul de ceux qui se consacrent à l'étude de la vie animale ne pourra se passer d'elle. CARUS. *D'Anat. Comp.* (2d ed. Translated from the German, by Jourdan. 1838.)

RESPIRATORY SYSTEM.

THE anatomical description of the larynx of crocodilians given by naturalists, is, so far as I have seen, fundamentally erroneous. For example, the great valve and even the body of the thyroid cartilage are described as cartilaginous developments and extensions of the hyoïd bone.

In his *Anatomie Comparée* (t. iv, 451) Cuvier says that the hyoïd bone forms a great plate—"la corps hyoïd ferme une grande plaque." The hyoïd bones which are placed outside of the thyroid cartilage near its middle, are neither the points of departure nor termini of this plate, as will more fully appear in the sequel. In the *Museum of Animated Nature*, it is stated that this valvular plate is a "cartilaginous expansion of the hyoïd bone." The *National Cyclopædia* (of London, i. 500) makes the same statement concerning the alligator. In the *Description de L'Egypt* (t. 24, *Histoire Naturelle*, 2d ed. 1829), M. Geoffroy St. Hilaire gives the same view. He describes what is really the thyroid cartilage, as a firm plate of the hyoïd bone (p. 490, *et passim*); "ainsi maîtrisé dans son développement, l'hyoïde s'en tient à n'offrir qu'une vaste conque cartilagineuse, un long plateau," etc. (492.) "Le larynx et l'hoyide agissent de concert" (494). He insists that this "cuilleron hyoïdien" piece of anatomy is very marvellous indeed.

There are two hyoïd bones, which are as distinct and separate as

any bones can possibly be. Their configuration nearly approximates that of the last floating rib of the human skeleton, presenting their convexity posteriorly, and downward. Laterly and anteriorly they assume the form of a double curve; the concavity of the former is inward, toward the larynx, while that of the latter is forward and upward. The anterior (that is, abdominal or inferior) articulations of these bones are far apart, the middle part of the expanded thyroid cartilage intervening—the distance between these articulating points being the length of the bone itself. These bones, which deeply indent the edges of this firm, spoon-shaped plate, run along its posterior margin for a short distance, bending upward, inward, but quite outside of it, and of the posterior fauces, where they become cartilaginous, and are lost in the tissues, without forming a bony or immovable connection, as would happen, if fellow met fellow from opposite sides. Their lateral, lower or anterior implantations in the margin of the thyroid cartilage permit longitudinal, back and forward motion to a limited extent; but their transverse or lateral motion must be slight, if any, at these articulations, owing to the firmness of the thyroid plate, while their faucial or pharyngeal termini, where they become thin, cartilaginous and fibrous, must allow of great expansion laterally, without which, indeed, the animal could not swallow large masses, which it has no power to masticate. If these bones were, as authors affirm, but a single bone, their bony union would necessarily take place in the pharyngeal region—seeing that their laryngeal ends are separated by nearly the whole width of the thyroid plate. Thus, hyoïd bones, two inches long, will be found about the same distance from each other at their thyroidian articulations.

The soft palate, an arching, membranous curtain, suspended from the palatine vault, forming the division between the anterior and posterior fauces, passes just behind and in contact with the semi-cartilaginous valve, which arises from and is the anterior continuation of the thyroid plate. The base of this valve is joined also to the base of the tongue, as the former passes upwards. The palate, which has no uvula or tongue-like appendage, presents in the middle of its arch a vertical slit, though without retracting or gaping, the divided floating edges being in contact, unless when separated artificially or by solid bodies in the act of swallowing. Perhaps this central slit of the palatine arch has, for its final cause, facility of

deglutition and the prevention of rupture or injury in swallowing large, hard masses, which the animal cannot masticate, its teeth being conical, without grinders, and not opposite. This slit, however, is virtually closed and concealed by the great cartilaginous valve, which plays before the palate at the base of the tongue. This valve appears to act permanently against the roof of the mouth, where its free edge, playing against the roof of the mouth, virtually seals up the isthmus of, and passage to the posterior fauces so symmetrically that water even cannot pass. The more widely the jaws open the more forcibly does this valve act, being accompanied, during deglutition, with a retraction upward and backward of the massive base of the tongue. The animal can exert a voluntary, though not a very great force, upon this valve, when a foreign body is forced over it, under the soft palate, into the gullet. This valve, which is common to the pulmonary and alimentary passages, is here noticed briefly, on account of its intimate relations to the former apparatus.

A complete description of the muscles, and other structures concerned in these motions, would be not only fatiguing, and, perhaps, unintelligible without engravings, but would greatly transcend the allowable limits of this paper. In fact, I find it almost impossible to understand my own description of the muscles, in the absence of the dissected cadaver itself.

It is generally asserted, as will be shown hereafter, that crocodilians have no epiglottis—a postulate which at the first view, anatomical examination seems fully to warrant, but which presents a physiological difficulty and danger, apparently incompatible with the analogies and purposes of the animal economy. How is it possible, in the absence of the epiglottis, for the act of deglutition to take place—how can this animal immerse itself, without risk from strangulation, while food and water must pass directly over or rest upon the glottidian aperture?

After many experiments and observations upon the living animal while forcibly passing thermometers, and sometimes other substances into the posterior fauces and into the stomach, I was led to the conclusion (which even anatomy itself confirms), that the great thyroid valve is truly the homologue of the epiglottis, being identical with the latter in function, and differing only in configuration. In every act of deglutition the thyroid valve, which is soldered to the base of the tongue, must fall back upon, close, and cover the glottid-

ian opening. The posterior surface of this valve fits down and closely on, and is as it were figured by the rima. It is not possible for the animal to swallow anything unless this valve recede, and recede it cannot without touching the salient lips of the glottis, which lie just behind the valve. The action of the tongue attached as it is to the head, the thyroid cartilage, the hyoïd bones, and under jaw, is upward and backward, tending in the act of swallowing to bring the rima forward to this valve, while the latter cannot permit anything to pass over its free edge and under the hard palate without overlapping and closing down upon the glottis, being, therefore, not a mere analogue,* but a homologue of the epiglottis, according to the strictest principles of homology.

The body of the thyroid joins the cricoid cartilage which intervenes between the former and the trachea. The thyroid is fortified externally on each side, as already said, by a hyoïd bone. Just behind the thyroid valve, in the posterior fauces, in the midst of the thyroidian concavity which is shaped like the bowl of a spoon, an eminence is found having a slit, with salient edges which form the glottidian rima. Its direction is longitudinal, not corresponding with the plane of the trachea, but inclined forward toward the horizon. The lips of the rima, which are firm and partly cartilaginous, touch each other in the dead subject, without hermetically sealing the glottis.

It is said that the food of the crocodilidæ "is bolted in large masses into the dilatable gullet" (*Mus. Anim. Nat.*), which is quite erroneous, at least in regard to "large masses," and sometimes small ones too, especially on coming out of the hibernating state, when they swallow with great difficulty and generally require much time and many violent, nay almost convulsive efforts to accomplish this act (as might be anticipated from the analogous habits of the reptilia), and consequently, there would be great danger that

* "Analogue.—A part or organ in one animal which has the same function as another part or organ in a different animal.

"Homologue.—The same organ in different animals under every variety of form and function." R. Owen, F. R. S. On the Archetype and Homologies of the Vertebrate Skeleton. London 1848. P. 7.

These definitions, generally attributed to Professor Owen, though not original with, have been more correctly applied by him than by earlier writers. In the French Dictionary of Natural History (17 vols. Paris. 1822), the definition of *analogue* seems to apply equally to *homologue:* thus, "On appelle Analogue, en Anatomie comparée, les organes ou parties d'organs, entre lesquelles existent des rapports d'identité."

foreign bodies might fall through the glottidian opening, were the latter destitute of the epiglottis or its homological equivalent.

In his work on Comparative Anatomy, Carus says that the opening in the larynx is "placed far back and is somewhat covered by the posterior edge of the tongue in the crocodile" (ii. 189). In the second edition of this work, translated into French by M. Jourdan (1838), it is said that the crocodile has no epiglottis: "*Jamais elle n'offre d'épiglotte.*"

In the *Dict. Chron. et des Découv.* (17 vols.), Humboldt is cited as authority to prove that crocodilians have no epiglottis!

Without attempting to analyze the muscles of the larynx and pharynx, I am inclined to think, that even in a state of repose, when neither respiration nor deglutition is going on, the glottidian aperture and the posterior surface of the thyroid valve, are in contact, and as the anterior nares are valved, the posterior nasal passages opening behind the thyroid valve, there can be no danger from the entrance of water or other foreign bodies into the air-passages.

The extraordinary or violent inspirations and expirations of the alligator are, so far as I have seen, indications of hostility like those of the rattling of the rattle-snake's tail, or the hissings of the angry goose. The habitual state of the lungs appears to be that of repose with moderate distension, as ordinarily neither inspiration nor expiration presents the usual mechanical phenomena of respiration as motions of the chest and abdomen, which, if they exist, are often wholly inappreciable. The animal can continue for days either under water or partially immersed, without any visible motion or change of position, and without agitating the water. It is but rarely that one can detect a bubble arising from the motionless, immersed animal. The same respiratory immobility is often witnessed when the alligator lies motionless, if undisturbed, in the open air for days in succession. I have, however, sometimes observed regular respirations, especially in very hot and dry weather: August 7th, air 90°; an alligator which has been lying on the dry ground motionless for several hours, was watched for seven minutes, during which, seven respirations occurred, as indicated by the rising and collapse of its sides; at the same time several other alligators were immersed except the tips of their muzzles, which, with the nasal openings, were out of the water.

In this state of uncertainty concerning the regular respiration of the alligator, which has not been dissipated but confirmed by several years' observation, analogical evidence seems to indicate that this function must take place, whether perceptibly or otherwise, though with less regularity than in man.

Abundant experimental evidence shows that a real or an apparently fatal result quickly follows from complete obstruction of the trachea by ligature, owing, it may be assumed, more to the non-elemination of carbonic acid from the lungs than to the absence of continuous or frequent inspirations, as fresh air could not be appropriated by an immersed animal destitute of branchiæ, while effete or carbonated air might possibly be discharged under water so as to combine with or dissolve in the latter. Probably the alligator takes in a large store of air when it inspires, consumes but little oxygen, and therefore has no need to replenish the stock except after long intervals, being at the same time easily poisoned by carbonic acid. Without attaching any value to these hypotheses, it may be affirmed, that few facts in the realms of physiology appear to be more antagonistic than the two following, namely: an alligator can, without detriment, voluntarily suspend its respiration for days; but it dies speedily when its trachea is tied.

When the tracheæ of these animals are tied they open their jaws, walk about, appear uneasy, and movements of a heaving character simulating respiration in other animals take place, although previous to ligation, such motions could not be detected, unless when the animals had been irritated or disturbed. Generally in a short time death, caused in this way, appears to be complete, the body becomes limber, passive, motionless; neither the scalpel nor fire cause any motion which can be attributed either to volition or sensation.

On the 18th of June a vigorous alligator measuring six feet, one and a half inches in length, and twenty one inches in circumference, appeared, in from forty to forty-five minutes after the ligation of the trachea, quite dead, the body being supple. The trachea was then opened below the ligature, and for an hour, more or less, the lungs were repeatedly inflated by Dr. Cartwright and others, by means of a bellows, followed by compression of the trunk to expel the air; but resuscitation could not be effected. The muscular contractility and the heart's action still persisted, but neither

fire nor dissection, elicited any satisfactory evidences of sensation or voluntary motion.

To this case I did not give an undivided attention, having been engaged in the same room in vivisecting a much larger alligator. I mention nothing but what I witnessed, or what reliable witnesses related to me. One circumstance not mentioned above, it may be important to state in this place, namely, that during the attempts to resuscitate the animal, its heart was wounded, and a copious hæmorrhage took place. Hæmorrhages, if copious, interfere with the success of a vivisection more or less. In a majority of cases, notwithstanding serious hæmorrhages, if the means adapted to resuscitation be not too long delayed after apparent death from tying the trachea, life may be restored, and restored too under circumstances which, at first view, seem calculated not to promote, but prevent that end, namely, extensive dissections which expose the thoracic and abdominal organs. Is it possible that extensive wounds can be the cause or antecedent of, or in any wise auxiliary to the resuscitation of an asphyxiated animal?

Although, in my earlier experiments, I was led to the unexpected conclusion that the ligation of the trachea speedily caused real death, this conclusion appeared subsequently to be less certain as the experiments were multiplied and their conditions were varied. The animals asphyxiated by ligation having been generally deemed definitively dead, may have been prematurely used for anatomical purposes, and with a view of ascertaining the contractility of the muscles, and the positive or negative influence of the nervous system upon the muscular. If the ligation of the trachea invariably kills the alligator when left without further molestation or manipulation, experiment shows, at least in some instances, that if the body be dissected, so as to open the great cavities, life may return. At first view, it might appear evident that any lingering vestiges of life after apparent death from asphyxia, would be utterly extinguished by dissection. It is possible, however, that an interchange of gases, the absorption of oxygen and the elimination of carbonic acid, that is, the fundamental conditions of respiration, may take place when the alligator's lungs, which consists of membranous septa or sacks, are exposed to the atmospheric air from without. The theory of respiration, now generally received (whether valid or otherwise), is "purely physical" (Draper); or, "partly physical and partly

chemical" (Todd and Bowman); or, "it is a change dependent on physical agencies, occurring, in conformity with their laws, when the requisite conditions are supplied by the structures of an organized being and by the functional alterations which the living state involves; all that is requisite is the exposure of the blood to the influence of the atmospheric air (or, in aquatic animals, of the air dissolved in water), through the medium of a membrane that shall permit 'the effusion of gases;' an interchange then taking place between the gaseous matters on the two sides." (Carpenter.)

It is, however, with facts, and not with their theoretical explanation, or apparent incompatibilities, that the narrator must deal. In stating *what is*, he may not be always able to answer the question *how or why?*

The following experiments (June 13, 1853) were performed in the presence of a number of medical gentlemen and others, among whom were Drs. Cartwright, Hale, Copes, Nutt, Wharton; Mr., now Prof. Riddell, of Texas, and myself, though not all were present during the entire four hours' experiments.* Air of the room 87°. A stout and vigorous alligator, six feet and two inches long, having been securely tied down, Dr. Cartwright repeatedly compressed the sides of the animal, with a view of expelling the air as fully as possible from the lungs before trying the trachea. This latter operation was performed at 9 o'clock and fifty-five minutes. The animal soon urinated copiously, which it subsequently repeated. In five minutes its limbs become motionless and flaccid. Ten minutes later sensibility disappeared, as tested by lighted matches applied to the paws, axillæ, groins, etc. The trachea was, at the suggestion of an assistant, again tied in two places nearer the lungs. The animal appearing to be dead, was undergoing dissection, the chest having been opened, whereupon, at forty-five minutes after 10 o'clock, it unexpectedly revived. It had been partially unloosed after the apparent death, its tail only being fast. It now assumed a very formidable attitude, and attempted to bite. Dr. Copes, with the assistance of two black men, secured and replaced it as before. At noon, however, its activity was nearly gone, and an hour afterwards it was considered dead. The ligatures were at that hour removed, the trachea was opened, the lungs inflated artificially, the animal lying on its back. The

* I was a good deal engaged, during this time, with other experiments.

heart, which was exposed, beat eight times per minute. The number of beats increased progressively with the pulmonary insufflation. At 3, P. M., Dr. Copes closed *secundum artem*, the large wounds which had been made by the crucial incisions of the abdominal and thoracic walls and the partial dissection of some organs. A trachea tube had been fixed in the windpipe, and the animal was turned loose.

June 14.—This animal crawls about the court-yard. It hisses feebly when irritated, and moves slowly.

June 15.—The tube has been removed from the trachea. About three inches of the latter, near the sternum, is exposed segments of the tracheal rings and portions of the skin having been removed. Three days afterward (June 18) death occurred.

The assimilation of oxygen and the elimination of carbon, by respiration or otherwise, are, as all know, the most necessary and universal requirements of the animal economy. The structural adaptations and functional activities of respiration present great varieties, and some formidable anomalies in the cold-blooded animals, particularly in crocodilians. For example, I have invariably found that the ligation of the trachea of the alligator is followed by real or apparent death in a short time. Nevertheless, while fire, pricking and cutting fail to elicit any indication of sensibility, the body being passive, motionless, and supple; yet, the repeated insufflations of air into the lungs, will, in most instances, resuscitate the animal. After decapitation in any part of the neck (the trachea not having been previously tied) sensibility and voluntary motion persist, generally for a considerable period, sometimes for hours. In this headless condition, I have several times noticed, in the trachea, not in the general movement of the trunk, indications of respiration, especially expiration, as in the expulsion of bloody froth. If, however, the decapitated animal be submerged, water entering the trachea speedily destroy sensation, voluntary motion, life. This experiment, though limited, is doubtlessly decisive as a general rule, confirmed as it is by ligation of the trachea.

In view of the facility with which this animal may be asphyxiated by ligation of the trachea, or by submersion in the decapitated condition, how is it possible to account for the fact which I have witnessed from day to day, from year to year—namely, that alligators of various sizes and ages sometimes immerse themselves for days in

succession without once inspiring or even changing their position? The only explanation which I can suggest is hypothetical—namely, that a large store of air having been inspired previously to submersion, this air is gradually consumed, while the carbonic acid or deleterious air is expelled at intervals. I have already published other corroborating evidence, showing that this animal can, at will, suspend respiration without any apparent detriment, in hot or in cold weather, and even when under a thick stratum of ice, such as occurred twice during an extraordinary winter about ten years ago; but, in these cases, the external nares were always placed just above the ice. On the other hand, in mild weather, the head and body lie on the same plane on the bottom of the vessel containing water, whether the latter be shallow or deep, without any respiratory movements.

While the evidence is conclusive, that the aligator, which sometimes lies motionless for successive days, at the bottom of column of water, in precisely the same position, cannot inspire, since it has neither branchial organs nor respiratory movements; it may, nevertheless, in the absence of the observer, or imperceptibly to him, when present, discharge carbonic acid into the water, the latter holding this gas in solution, as already suggested.

ANATOMICAL REMARKS ON THE TRACHEA AND LUNGS.

Fife, in his Human and Comparative Anatomy (iv, 283), says, that the trachea of the crocodile has no cartilaginous rings. The truth of the matter is quite the other way, as there are sixty or more rings which are fibro-cartilaginous, semi-transparent, symmetrical and circular, not incomplete as in the human subject. The cricoid cartilage has segments of rings. The trachea is, comparatively speaking, of extraordinary length, reaching to nearly the middle of the trunk, being from the cricoid cartilage to the bronchial bifurcation, from one-fifth ranging to one-seventh of the animal's entire length. An alligator, twenty-one inches long, had a trachea, including the larynx, four inches in length; another, ten and three-quarter inches long, had the trachea, including the larynx which measured two inches, nearly equal to one-fifth of the animal's entire length.

Comparatively large at its laryngeal commencement, the trachea becomes smaller and smaller in its calibre until it reaches its bron-

chial division. The bronchiæ, having entered the lungs, abruptly subdivide, as if about to traverse these organs, but are at once truncated, as if with a knife, near the parent stem, without transmitting a solitary ringed tube to the respiratory organs. These truncated bronchial stumps communicate with an immense number of delicate, pelucid air cells, or sacculi, which inter-communicate with each other.

The lungs, which are semi-transparent, slightly pink-colored, greatly elongated, apparently without parenchyma, consist of beautiful septa or air sacks, occupying not the anterior but the posterior half of the trunk. They extend nearly to the pelvis, on both sides of the spine, between the walls of the trunk and the expanded double liver, being capable of vast distension; but, when deprived of air, they collapse into a membraniform tissue. The lung of an alligator, sixteen and three-quarter inches long, being emptied of air and placed on glass and dried, was sufficiently thin and diaphanous to form a beautiful object for examination in the compound microscope. While the lungs pass backward, in a diagonal upward direction, farther than most of the abdominal organs, they are separated from the latter, not by a transverse but diagonal, strong, peritoneal diaphragm, which rises from the sternum and passes to the lumbar spine. The pulmonary spaces assume the form of double oblique cones, the bases of which are towards the neck—their summits toward the sacrum.

Here, again, the standard works are at fault, though they very faithfully copy from each other. Cuvier, in his *Règne Animal*, says, concerning crocodiles : "Their lungs do not penetrate into the abdomen, as in other reptiles; and the fleshy fibres adhering to the portion of the peritoneum which invests the liver, impart the appearance of a diaphragm; circumstances which, conjoined to the particular of their heart being divided into three chambers, wherein the blood that comes from the lungs," etc. Wrong in every anatomical particular ! and, yet, without correction by Prof. Carpenter, whose annotated edition of this work appeared *anno*, 1851.

Carus, in his Compartive Anatomy, says that the lungs of the crocodile "remain above the liver and more in the thorax." (Gore's ed., ii, 189.) In the French, and later edition of his work, he makes the same statement concerning the lungs ! "Ceux du crocodile, au contraire, de dépassent point le foie, et restent par conséquent d'avantage dans le thorax." (i, 347.)

M. Bory de Saint Vincent, principal editor of the *Dict. D'Hist. Natur.*, article *crocodile*, says that the latter is the only one of all the saurians whose lungs do not penetrate into the abdomen.

It is remarkable that Cuvier has made the energy of the respiratory function the basis upon which the activity of the muscular system reposes. Cuvier insists at length that the activity of respiration and the power of the muscles, bear a precise relation to each other throughout the animal kingdom. Birds respire more, use a greater quantity of air than other animals, and, therefore, according to his theory, are in possession of the greatest amount of muscular force —"*une force instantanée si prodigieuse.*" Birds have the maximum, reptiles the minimum respiration, man occupying the middle ground between these extremes, as it regards this function according to him. (*Anat. Comp.* i, 52, *et seq.*) This increased force from increased respiration, exhausts the irritability of the muscle rapidly, while diminished respiration is attended with prolonged irritability, as among reptiles which breathe little, whose flesh moves (palpitent) so long a time after death. (*Anat. Comp.* i, 54.)

Professor Carpenter, in his interesting work on Comparative Physiology, says that in the crocodile "we find the lungs externally small, and more restricted to the thoracic region, with some indications even of a diaphragm, which is entirely wanting in all the inferior genera." (336, Am. ed., 1854.)

In the Encyclopædia Britannica (article, reptilia, xix, 133) Dr. Roget says of crocodilians, that "their lungs do not descend into the abdomen, as in other reptiles of their order."

VOICE.

Carus says that, "ordinarily the voice of the saurians is a simple hissing one, *sifflement;* but, according to Humboldt, crocodiles can produce true intonations, *véritables intonations.* (*Anat. Comp., seconde éd.*, 1838.) Upon this topic, the accounts given by writers are variable and even contradictory. In his Human and Comparative Anatomy, Fife maintains that the reptilia, including crocodiles, being destitute of a vocal apparatus, have, "in general, no voice." In the *Museum of Animated Nature* (ii, 82), it is stated that the alligators of Louisiana" bellow not unlike a bull, which may be heard at the distance of half a mile." In the fourth volume of the English edition of Buffon's Natural History (London, 1831), Mr. Audubon is quoted

extensively as authority upon the natural history of the alligator. "On the Red river," says Mr. Audubon, "before it was navigated by steamboats, the alligators were so extremely abundant that to see hundreds at a sight along the shores, or on the immense rafts of floating or stranded timber was quite a common occurrence, the smaller on the backs of the larger, groaning and uttering their bellowing noise like thousands of irritated bulls about to meet in fight."* Alligators make a subdued bellows, blowing or hissing sound. If they ever bellowed like "irritated bulls" in Louisiana, I have not, in a quarter of a century, heard the noise.

A medical officer of the army, who has had the kindness to criticise (*privately*, as he writes it) some recent remarks of mine on the sounds emitted by the alligator, will, I hope, pardon the liberty I take in publishing his entire letter, omitting only his name, an omission which I regret. The opportunities for observation which he and many others enjoy in the premises, being much better than my own are, therefore, more satisfactory, ample and conclusive. Here almost all of the planters of Lower Louisiana might (omitting negroes altogether) be competent witnesses whether alligators "bellow like thousands of irritated bulls," making "every thing tremble around for miles." In regard to a fact so simple, there should be no scepticism whatever.

B. DOWLER, M. D.—*Sir:* Excuse my calling your attention to the facts mentioned below. As little circumstances and mistakes often give tone to, or destroy the greatest works, I wish to call your attention to a remark in your last Journal (January, 1861), *i. e.*, in regard to the noise an alligator makes. The Florida alligator makes a noise that can be heard two miles or more on a still day—a low, lumbering sound, that makes every thing tremble around, and seems to be heard far and near at pretty much the same loudness. The hospital is situated at the juncture of the Wakulla and St. Marks rivers, and I can sit in my porch and see dozens at a time. That in the summer months they make a terrible noise, I assure you, is a fact in regard to the Florida alligator. Our alligators are very fond of hogs and dogs; and, by catching a dog by the ear and making him hollow, you will immediately see them raise their heads out of the water all

* "When alligators are fishing, the flapping of their tails may be heard half a mile." (ib.)

around. Indeed, they are the great pest to hunters, as they eat most of their water dogs. I have heard of a few reliable accounts of their attacking men. They will do it sometimes, though not often.

Yours, respectfully.

If, in this paper, some anomalous facts relative to the respiratory system of the great saurian of Louisiana, should appear obscure and even conflicting, the same may be affirmed concerning the progressive, but still imperfect generalizations of experimental physiology and pathology. Here, as on many other occasions, the reasoning of an acute thinker applies. Oesterlen, in his work on Medical Logic, in reference to the physician and physiologist, says: "The peculiar disadvantages under which both labor, is the circumstance that they are not able, like the physicist and chemist, so to isolate the manifold phenomena, processes and functions of the living body, as to remove any one of them from the magic circle of the whole, without deranging or arresting the entire machinery. We are unable, for example, to place the lungs, the alimentary canal, the liver, the brain, the processes of respiration or digestion, the circulation, etc., so as to observe the several occurrences in them singly, nor can we submit them to such changes and influences as may enable us to determine the conditions of their development and action, and to observe in what manner their whole series of occurrences conform to each other. Both physiologists and pathologists, but especially the latter, are thus forced to embrace the living organism as a whole in their observations, and when an experiment is made upon it by the former, the changes in phenomena or processes which occur, the effects produced follow the same order, and are in essential agreement with the same laws of vital phenomena, which are the subject of our inquiry. In every experiment we must include most, if not all of the vital processes, and we must therefore take into account a complicated whole in its possible variations resulting from certain influences. It is therefore difficult to ascertain and precisely appreciate either the mechanism of an individual process, or the changes produced in it by the different external and internal circumstances which effect it. Equally difficult is it to withdraw the living body for any considerable period of time from the action of those other influences for the purpose of investigating separately their mode of

action upon each of its different processes, because, as in the case of the air, temperature, light, aliment, (and this holds good also of certain remedies) it can only exist by the coöperation of them all. (79, 80.)

ART. X.—*Liquor Ferri et Quiniæ et Strychniæ Citras.* By H. ESTES, M. D.

EDWARD'S DEPOT, Hinds Co., Mississippi.

DR. BENNETT DOWLER—*Dear Sir*: Nearly three years ago my attention was called to a preparation—Ferri et strychniæ citras—which had been used successfully for a long time in atonic dyspepsia, and in uterine atony, at the Royal Free Hospital. Dr. O'Connor found it a prompt emmenagogue in the latter condition, when all other remedies had failed. (See Med. Times and Gaz., Feb. 27th, 1858.)

During these three years I have used the preparation which heads this letter successfully, in many cases of the conditions just named, and, also, in a few others—viz.: in symptomatic and idiopathic cardiac neuralgia of atonic character, and in chronic splenohæmia; especially when, as is most commonly the case, of atonic character.

It will be seen that the theoretic therapeutic action of each ingredient is such as renders their combination especially applicable to cases of this latter kind. I first made this preparation on this account, and because I could not obtain the citrate of iron and strychnia. On account of its eligibility, and the facility with which any one may prepare it, who may find it inconvenient to procure the latter article, or who may prefer the liq. fer. et quin. et strych. cit. I would respectfully submit the method by which I am in the habit of preparing it, which is as follows:

Take of citrate of iron and quinine, *two ounces;* citric acid, one drachm; oil of lemons, *two minims;* refined sugar, in powder, *twelve ounces;* distilled water, *a sufficient quantity.* Dissolve the citrate of iron and quinine, citric acid and oil of lemons, in *eight ounces* of the water, by means of heat and constant stirring, carefully avoiding

ebullition. Then filter the solution, while yet hot, into a bottle containing the sugar, and after the solution has passed, add enough water to make the filtered liquid, including the sugar, measure twenty fluid ounces. This gives us a citric acid syrup of the citrate of iron and quinine—Liq. fer. et quin. cit., which is to be put aside for use as required.

When required—

℞.—Sig. fer. et quin. cit., f. ℥. iv; strychniæ, gr. ss. vel., i, vel. ii.

Liqua—S.—One tea-spoonful to be taken three times a day, immediately after meals.

The excess of citric acid procures a perfect solution of the strychnia, thus giving a perfect uniformity of dose.

March 25th, 1861.

PROGRESS OF MEDICINE.

Art. I.—*On Pericarditis*: By W. T. Gairdner, M. D., Physician to the Royal Infirmary of Edingburgh, Lecturer on Clinical Medicine and on Practice of Physic.

PROGNOSIS AND TREATMENT OF PERICARDITIS.

In two previous papers (April, 1859, and February, 1860), in this Journal, I have endeavored to bring both clinical and anatomical observations to bear on some of the more obscure points of the natural history of pericarditis. In the present communication I propose to investigate some of the practical questions arising out of the preceding details.

What is pericarditis, considered as a subject for treatment? How is the clinical idea of this disease to be defined and limited, as compared with the pathological idea of it? What are the circumstances that determine the necessity for this or that particular course of treatment in the individual case? These questions must, I think, have often occurred to most modern physicians who have thoughtfully studied the course of pathological research; they emerge, too, very directly and immediately from the inquiry to which this paper is a sequel.

That a friction-murmur, *per se*, cannot be taken as proof of pericarditis requiring active treatment, is very clear from the preceding observations. For a friction-murmur may be present, and may con-

tinue an indefinite length of time, when there is no pericarditis properly so called, but only a roughening of the pericardium, the result of a former morbid process; and, further, pathological anatomy shows that in a considerable portion of cases, a condition of the exterior of the heart, which in all probability must have led to exocardial murmurs of some kind, has actually been present, and has passed away, if not without symptoms, at least without the least trace of a history of acute pericarditis. Whatever be the pathology of the white lymph-patches and their allied fibrinous deposits in the pericardium, it is impossible to attribute to most of them the history of an acute inflammation, and it is equally impossible to deny them the power of producing a murmur. I am satisfied that they do produce murmurs in certain stages of their progress; and, that these murmurs must necessarily resemble, to a considerable extent, the friction murmurs of pericarditis.

Friction murmur, then, is the only sign that the pericardium is roughened; not a sign that it is inflamed or actively diseased. In other words, friction-murmur, though always a sign of disease, past or present, is one to be carefully scrutinized and judged by other signs and symptoms, before pronouncing it an indication of pericarditis requiring active treatment, or indeed any treatment.

Owing to the great difficulty, already pointed out in my first paper, of judging with certainty of the presence of friction-murmur in cases in which it is slight and ill-defined, I feel that it would be quite impossible to attempt any numerical estimate of the cases in which it has occurred to me to observe friction murmurs, either *of insignificant clinical value*, or only thus far significant, that they require to be watched and studied, as the indications of a *tendency* to acute disease. I can only say, in general terms, that such cases are of considerable frequency, and would probably be discovered more frequently than they are if the state of the heart were carefully scrutinized by auscultation in every case. The stethoscope has, in this particular as in many others, operated upon the course of physical diagnosis somewhat after the fashion of the Romish confessional in moral diagnosis: it has brought many "secret sins" to light, and in the affairs of the heart has perhaps tended rather to exaggerate the importance of small aberrations than to furnish any new principle of treatment; possibly, indeed, it has in some hands proved to be even a dangerous instrument, by bringing strong remedies to bear, with injudicious rigor, upon comparatively insignificant diseases. Fortunately, the general diffusion of stethoscopic skill has, in this country at least, been closely accompanied by a bias towards the more sober and guarded use of heroic treatment, and hence this evil consequence of minute diagnosis has been gradually corrected. But I can call many instances of patients frightened very unnecessarily by the observation of "something wrong" about the heart; and it is impossible to doubt that active treatment of one kind or other has often been applied to cases of supposed acute pericarditis upon indications which by no means justified it. Of course, the opposite error is also possible; but I think it will generally be admitted that the principles advocated in several of our standard works on the physical diagnosis

and treatment of pericarditis expose us far more to the error of too meddlesome than of too inert practice.

There is one disease so notoriously the cause of pericarditis, in a large proportion of instances, that few cases of it now pass under the notice of physicians without careful and frequent stethoscopic observations of the heart. "Every prudent physician, I presume," says Dr. Latham, "searches after it (pericarditis) day by day, with his ear in all cases of acute rheumatism."* This principle of daily stethoscopic observation is fully adopted by several other authorities; and Dr. Stokes goes much further than to watch for the first development of friction-sound in pericarditis, inasmuch as he says, "it cannot be too strongly impressed upon the mind of the practitioner that, valuable as the discovery of the signs of an inflamed pericardium may be, it is not for these alone that he is to look, but rather for the indications of excitement of the heart, whether attended or not by the signs of exocardial or endocardial disease." And he proceeds to remark that these indications may demand local depletion, "even though no friction-sound or valvular murmur whatever be present."† Dr. Walshe gives instructions tending in the same direction, though not so precise in detail; he thinks, however, that "before the occurrence of friction-sound there is no certainty in the diagnosis."‡ And even Dr. Hope (with less of special reference to acute rheumatism) recommends the hand to be daily placed on the precordial region in every severe inflammatory or febrile affection, with a view to the discovery of any excited action which might lead to the discovery of pericarditis by auscultation.

Such precepts are of unquestionable importance, for good or for evil; they are, moreover, well founded in fact and careful observation. In all that Dr. Stokes, in particular, says about the very early diagnosis of pericardial irritation before the period of friction-murmur, I most entirely concur. But this refinement of diagnosis must be accompanied with great caution, and an almost indefinable practical instinct, or tact, in the application and withholding of remedies, to make it either safe or profitable to the patient. Dr. Stokes, indeed, well remarks elsewhere—and it is the absolutely indispensable corollary of his instructions, as above given—that "the boldness of treatment often betrays the timidity of the practitioner; he is terrified at discovering the disease, and his mind is more occupied with its name than its nature or actual condition." It is to the great importance of a practice founded on the vital manifestations, rather than on the physical signs exclusively, or even chiefly, that I wish now to remark. I am well aware of the cautions given by Dr. Stokes on this subject, which make his chapters on pericarditis so full of the best kind of instruction for the practical physician; and it is no less a duty than a pleasure to refer, also, to the excellent article of Dr. Sibson, in the *British and foreign Medico-Chirurgical Review*, for July, 1854, as embodying much sound and well-con-

* Diseases of the Heart, vol. i, p. 139.
† Diseases of the Heart and the Aorta, p. 93.
‡ Diseases of the Lungs, Heart and Aorta. Second edition, § 1197.

sidered doctrine with regard to the prognosis and treatment of pericarditis, particularly in its rheumatic variety.

During upwards of six years of almost constant attendance in the Edinburgh Royal Infirmary as physician, I have of course had under my care a great many instances of pericardial affections arising in the course of rheumatism, and a certain number also concurring with other constitutional or local diseases. Purely idiopathic pericarditis I have rarely, if ever, witnessed; and I am much inclined to believe that (as morbid anatomy teaches) it very rarely occurs as a severe or clinically important form of disease. Pericarditis from direct injury, or from purulent affection of the blood after injuries; pericarditis following erysipelas, or pleuro-pneumonia; chronic or subacute pericarditis in connection with unhealthy suppurations in various parts of the body; with epidemic fevers, especially small-pox and scarlatina; and, finally, pericarditis associated with Bright's disease —have all fallen more or less frequently within my observation, and in many of these last mentioned forms the issue has been fatal. But of *rheumatic pericarditis*, and of *pericarditis without previous disease*, acute or chronic, *I have not had under my own personal care a single fatal case.**

I am particular in stating this fact, not for the purpose of making invidious comparisons, but that the truth, as regards the prognosis of rheumatic pericarditis, and the results of carefully adjusted and cautious treatment, regulated mainly by symptoms and vital manifestations, may be fairly brought into view. It is now a pretty well-established fact that rheumatic pericarditis, whatever may be its ultimate bad effects as predisposing to hypertrophy, or atrophy, or other chronic disease of the heart, is not directly fatal in a large proportion of cases; and it is therefore extremely probable, if not certain, that the violently perturbative practice of Bouillaud and others was the cause of many more deaths than were properly due to the disease itself, or than have usually been seen under a milder and more cautious system. I must add, that I have seen reason to suppose that rheumatic heart affections generally may be somewhat less common, and therefore milder in degree, in Edinburgh than in

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* Two or three facts required to be mentioned, not as qualifying this observation, but as removing from it the suspicion of latitude and vagueness. Very lately a case occurred to me of pericarditis, in a patient (A. H.) sent in from the jail as laboring under acute rheumatism of fourteen days' standing. There was no swelling of the joints, but very acute pains in the limbs and back. The pericardial effusion, which was considerable, rapidly subsided under a few leeches, with continued warm fomentations. The patient showed, nevertheless, a degree of prostration very unusual in rheumatism—symptoms, in fact, more resembling pyæmia. After some time, an abscess formed beneath the right sterno-clavicular articulation, and this was followed by a host of abscesses in almost every part of the body, *but in no instance primarily in the joints*, although the shoulder joint and the sterno-clavicular were ultimately laid bare, the abscesses in their neighborhood having quite destroyed the ligaments—leaving, however, the articular surfaces comparatively unaffected. The patient died. About two years ago, three cases of rheumatic pericarditis, two of which were pretty severe, occurred to me at once. One of these, a girl from Larbert, passed through the disease and recovered. She was retained under observation a considerable time, and was then dismissed, having been able to walk about freely for several weeks, and almost every trace of abnormal sound, as well as of abnormal dull percussion having disappeared. She went home in good health, but took ill within a fortnight and died. I did not hear of this till sometime afterwards, and I heard of it with great regret, and not without suspicion of a relapse. On writing, however, to Dr. Cuthill, of Denny, I found that no doubt had been entertained that the cause of her death was *typhus fever*; that the disease was characterized by the usual symptoms; and that there was no complaint or suspicion of anything wrong with the heart during the whole period of the illness. I have no doubt that the diagnosis was correct, for there was reason to fear that the disease might have been contracted in the Royal Infirmary at the time.

London, or at least in the great hospitals of the West End; and perhaps, like pneumonia, they may have been milder of late years. Still, I think I am entitled to add a strong and personal testimony in favor of the rapidly accumulating evidence, that rheumatic pericarditis, cautiously treated and not too much interfered with by special practice, is the very opposite of what it was supposed to be by Bouillaud, Hope, Graves, and even Latham; and that it does not require, as a general rule, violent remedies to obviate its tendency to death, but is, on the contrary, easily relieved by mild and almost purely palliative measures, superadded to the general treatment of the rheumatic affection.

Let me endeavor to indicate, shortly, what has been my usual course of proceeding in dealing with such cases. In every case of rheumatic disease, whether acute or chronic, I have made, as a rule, at the commencement of treatment, at least one or two very complete investigations of the cardiac sounds and impulse, to be used as testing observations for the future. I have also, at the same time, carefully investigated the habitual and the existing state of the cardiac function, and the history of any uneasy sensations or functional phenomena indicating disease, which may have been present at a former period. This done, and the heart being found free from suspicion, I have in future observations dwelt as lightly as possible upon the local examination of the heart, merely assuring myself, from time to time, that there was no very material change requiring more systematic attention.

If a murmur has been present on admission, it has not been too hastily assumed to be a new morbid process, unless accompanied by pain, or by the signs of effusion, or by marked tenderness on pressure, either over the costal cartilages or in the epigastrium. I have not thought it too much to wait for twenty-four or forty-eight hours, before commencing treatment, for corroborative evidence of the existence of true pericarditis in a doubtful case. Of course, careful watching, and examination at least twice a-day, has been the rule in all suspicious cases.

But in many cases of murmur, even when decidedly originating under observation, it has been my practice to look for something more than murmur as an indication for commencing the treatment addressed to an acute pericarditis; and this for two reasons. The alarm created by the announcement that the heart is wrong, is, in susceptible subjects, a serious objection to making this announcement on slight grounds. Having, accordingly, the clear conviction, for reasons which have been already submitted, that many friction-murmurs, unaccompanied by signs of effusion, or by cardiac symptoms, may be safely neglected; and being further of opinion that, as a general rule, the treatment of the rheumatic condition of the system is the best treatment also for the pericarditis, I have been slow to give effect to anticipations of evil founded on the presence of a mere murmur, particularly if slight and narrowly circumscribed in locality. The immense majority of such murmurs are found to present themselves over a part of the right ventricle, between the third and the fifth costal cartilage; and I have rarely found them,

except when accompanied by tenderness on pretty *firm* pressure, or by signs of effusion, or of marked excitement of the heart's action, or by a short dry cough, or by cardiac oppression and angina, give any cause for permanent uneasiness.

It is consistent with my observation, though opposed to the statements of several authorities, that one or other of the above-mentioned symptoms is rarely wanting when signs of effusion, even to a limited extent, are superadded to those of murmur. In fact, I more and more tend to disbelieve in *really acute pericarditis, apart from vital phenomena or symptoms;* although many cases called pericarditis may have been insidiously developed, and have escaped attention till a late period, either from inattention, or from their not being really acute in the sense of demanding treatment. Among the symptoms mentioned, the dry short cough is perhaps the one most likely to attract attention, and should always lead to the suspicion of pericarditis, when not explained by the state of the lung. Moreover, the symptoms mentioned are occasionally developed as the earliest phenomena of the disease, being succeeded by the murmur within two or three days, as has been shown by Dr. Mayne, of Dublin, and by Dr. Stokes.

With regard to the treatment of pericarditis actually pursued by me in hospital practice, I shall keep in view chiefly the rheumatic form, inasmuch as most of the others present little room for remarks tending to any satisfactory result.

In saying that rheumatic pericarditis will usually end favorably under various methods of treatment, I am very far from wishing to depreciate the value of medical practice in this disease. No doubt, the field within which our operations are to be restricted is more limited than it has been supposed to be by those who think that a particular method is a *specific* against inflammations in general, or pericardial inflammation in particular. But I trust that few educated members of the medical profession will think the worse of any treatment, because it does not claim the character of a specific method. What I argue is, not that treatment is of no use, but that the general and constitutional treatment applicable to rheumatism should overrule the means addressed to the local disease, except within the very narrow limits which I shall presently point out.

I find it impossible to arrange the facts of my experience in this matter in the statistical form. For, in the first place, I do not know how many cases of really acute pericarditis I have treated; and in the present state of our knowledge, as indicated in a preceding part of this paper, it may safely be said, that every attempt to number such cases must involve elements of most serious fallacy. But, in the second place, I do not know how many of the cases I have treated have got well in the end, and looking to the remote consequences; some of them, for instance, may have recovered for the time with more or less of adhesion of the pericardium. Of this only I am certain, that as physician to the Royal Infirmary, I have not had under my care a case of rheumatic pericarditis fatal during the acute period of the attack.

Let me try to turn this fact to its proper use, as regards what may be called the heroic methods, bleeding and mercurial salivation.

I believe that the profuse employment of blood-letting in inflammations has long been diminishing, and that in Edinburgh, at least, it is pretty nearly extinct. I shall not, therefore, occupy space in demonstrating that that is a wrong thing which, to the best of my knowledge, very few indeed are in the habit of doing. For many years past, I have not heard that any physician in Edinburgh has used a lancet in rheumatic pericarditis. At all events, I am very sure that the lancet is used most sparingly by the profession in general, and has been so for many years past.

But I am not so sure about mercury. Undoubtedly the use of this treacherous mineral is now marked by very great caution; and we almost never hear of those bad consequences which are the direct result of excessive mercurial action. But is its use, as some even now use it, expedient or necessary? And in rheumatic pericarditis in particular, would patients recover better, or worse, were no mercury exhibited? Without altogether holding the question as decided, I am strongly inclined to answer both of these questions in a sense unfavorable to the use of mercury. My own use of this much vaunted and much abused remedy has been rather experimental than founded on conviction.

The reserve with which I have used a remedy which has so much testimony in its favor, may appear to require some explanation. The truth is, that, as a student, it was my fortune to serve in the hospital under a very bold mercurialist — a man of the most humane character, and of the most entire conscientiousness, who proved his sincerity in regard to this subject by undergoing, in his own person, three distinct salivations in the course of his fatal illness. Under this gentleman's directions I learned much that was valuable; and, among the rest, something in regard to the bad effects of mercury in rheumatic pericarditis. But I have never succeeded in learning anything as to its good effects, though on many occasions afterwards I have administered it with such caution as my knowledge of it inspired. It may be said that I have not done justice to the remedy. In one sense this is true; for I have very rarely given it, except after other remedies. But surely, with a remedy of the power ascribed to this one, and specially regarded as promoting the absorption of exudation, it is no real injustice to call it into operation only in cases of a certain degree of severity, and to watch with care its influence upon cases that have in some degree resisted other treatment.

But whether I have done justice to mercury or not in my personal trials of it, I believe I have used it so as to do justice to nature, which is, after all, perhaps a better thing. For, assuredly, if I had adopted the plan of giving mercury instantly, in every case where a slight roughness existed in connection with the first sound of the heart, I should have failed to observe that the immense majority of these cases never went beyond a slight roughness, or at most, a slight but decided friction-sound; that of those which went beyond this, and were accompanied by a degree of effusion, a large proportion had only moderate effusion; and that, even when considerable effusion was present, a good cure was still possible without mercury.

I will conclude by mentioning, as nearly as possible, what has

been the usual course of treatment adopted in the cases here referred to, in so far as it has differed from that of acute rheumatism, or of the other primary disease. I trust I have not acted under any narrow or bigoted feeling of opposition to established doctrines, any more than of empirical devotion to single remedies.

In the very beginning of some cases of pericarditis, where the pain was very marked, and especially where it had strongly the characters of angina, leeches have not unfrequently been applied in moderate numbers. From four to six leeches so applied, and followed by fomentations, have very commonly relieved the pain, and been followed rapidly by improvement. Where relief occured, but was not complete, the application has sometimes been repeated. More commonly, one application has been all that I have thought requisite; and this only when strength and condition permitted, and when the symptoms had a certain degree of urgency. General blood-letting has not once been practised.

Fomentations, sometimes plain and sometimes medicated with opium, friction with camphorated and iodurettted liniments, and in obstinate cases the use of blisters, have been the chief local remedies besides leeches.

To conclude, I believe the principles of the safe treatment of pericarditis to be as follows: 1. To make large allowance for the insignificant and spontaneously healing class of cases revealed more by physical signs than by symptoms, and to regard them as demanding little active treatment; 2d. To consider rheumatic pericarditis in general as a disease susceptible, to a great extent, of cure under mild palliative local remedies and fitting constitutional treatment; 3d. To hold the constitutional treatment as subordinate to that of the disease with which the pericarditis is associated.—*Edinburgh Med. Jour.*, Jan., 1861.

ART. II.—*On the Influence of Change of Posture on the Characters of Endocardial Murmurs; with an attempt to explain the Cause:* By SYDNEY RINGER, Esq., Medical Registrar to the Children's Hospital, Great Ormond street, London.

AFTER a careful examination of a large number of mitral regurgitant, aörtic obstructive and regurgitant murmurs, and one case of mitral obstructive, the following general proposition was found to hold good—namely, that endocardial murmurs are louder, harsher, and lower pitched in the lying, than in the sitting or standing posture. One case of aörtic obstructive disease differed from what is stated above, in being louder in the sitting posture. One case of mitral regurgitation and aörtic obstruction was also an exception; this case will be again noticed further on. Excluding these two ex-

ceptions, the above given proposition was found to hold universally good.

These variations can be caused by either some alteration in the valves or part causing the murmur, or to some alteration in the force of the blood. It seems probable that it is due to the latter cause, and that the increased intensity and harshness, with the lowered pitch of the murmur, is due to the blood being then impelled with greater force. For, firstly, if an aörta be tied to a tap, and a murmur produced by a piece of twine tied round it, by increasing the force of the current, the murmur undergoes the alterations above stated; and, secondly, the force of the heart's contraction *is greater* lying than sitting, and sitting than standing, whilst the closest relationship exists between the frequency (*i.e.*, force) of the heart's impulse and these alterations in character of the murmur. It is well known that the frequency of the pulsations of the heart are increased in the sitting over the lying, and the standing over the sitting posture. This increased frequency is accompanied with a diminution in the force of the heart's contraction; moreover, the diminution in force is in proportion to the increased frequency. This conclusion was arrived at—first, by judging of the force of the radial artery by the fingers, and was found to hold good in all the subjects tried, with one exception, in whom no difference could be detected; but in this case no alteration in the frequency of the pulse was caused by an alteration in the posture of the patient. Secondly, as the above was a rather inaccurate method of judging, the following mode was adopted: Patients with visible and tortuous arteries were examined in the different postures, when in every case the visibility with each impulse of the heart was decidedly less in the standing than in the sitting or lying postures. It may be objected to this, that visible arteries occur mostly in persons suffering from aörtic regurgitant disease, and that as gravitation would act more strongly in the sitting than in the lying posture, more blood would flow back into the heart; consequently less would be propelled, and the visibility would be diminished.* But the same diminution in the visibility of the artery occurred in patients who were free from aörtic disease.† Moreover, in those cases in which aörtic regurgitation occurred, there was found to be a diminution of the visibility of the pulse in the standing over the sitting posture, in both of which postures the effects of gravitation are the same on the heart. It is thus probable that the rapidity of the circulation is much the same in all the different postures.

Having thus shown that the increased frequency and force of the heart are somewhat in inverse proportion, it remains to be shown what connection there is between the frequency of the heart's impulse and the alterations in the characters of endocardial murmurs above described.

1. A woman presented herself with both mitral regurgitant and

* For the idea of this source of fallacy, I am indebted to Dr. Jenner.

† My radial arteries are very superficial, and thus visible. The visibility is increased when I lie down.

aörtic obstructive murmur. In this woman the pulse was the same in frequency in both the sitting and lying postures. The murmurs were found to be the same in either posture.*

2. Patients who usually had the difference in both the pulse and murmurs well marked, were occasionally found to have their murmurs unaffected by position. At these times the pulse was found to be equally unaffected by position.

3. On making those patients who had the difference in both murmurs and pulse well marked exert themselves, so that their pulse was unaffected by position, it was then found that their murmurs were equally unaffected.

4. Again, patients, especially children, were occasionally nervous and frightened at the examination. In these, it was found, both the pulse and murmurs were unaffected by change of posture; but as their confidence became restored, the difference in the pulse manifested itself, and, *pari passu*, the murmurs also became affected by altered position.

5. In changing from one posture to the other, the alteration in frequency of the pulse gradually, and not instantaneously, manifested itself. So likewise the alteration in the murmurs became gradually manifest.

Thus, 1st, the experiment with the aörta and tap, and, 2d, the very close relation between the frequency (*i.e.*, force) of the heart's impulse and the alteration in the character of the murmurs, rendered it very probable that the alteration was due to altered force in the blood current, and not to any alteration in the condition of the valves. To set the question, however, quite at rest, the following method was adopted: A tourniquet was applied to a man's axillary artery, and a murmur produced. This was found to be affected in all respects, by altered position, after the manner above stated.

The murmurs accompanying femoral aneurisms† were found to be similarly altered by a change of posture.

The alteration in the intensity of cardiac murmurs by a change of posture is often very great. As far as I have been able to ascertain, it affects mitral murmurs more than aörtic. I have met with cases, indeed, in which well-marked mitral murmurs entirely disappeared on the patient assuming the erect posture.

Mitral murmurs are not of the same intensity nor pitch at the commencement and termination of the systole. Thus they increase in intensity, and become heightened to their very termination. When very weak, they are audible only at the very termination of the heart's systole; and when their intensity becomes, from any cause, as altered position or exertion, increased, they encroach on the systole from its termination towards its commencement till they are continuous with the whole of it, the termination remaining the loudest.

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* This patient is the exception referred to at the commencement of this paper.

† These femoral aneurisms were situated so low down, as probably not to be affected by any change in the pelvis brought about by the change of position.

Can this increase in the intensity and elevation of pitch towards their termination be due to the rotation of the heart, by which its mitral orifice is brought more anteriorly? The rotation of the heart is probably so slight in amount, that it is difficult to conceive this possible. In confirmation, however, of this view, it may be stated that, when the murmur is listened to posteriorly—that is to say, at the angle of the scapula, or close to the spine—the commencement of the murmur is most intense and highest pitched, the very reverse of what is heard in front, which would be expected, as the mitral orifice would be carried away from the posterior part of the spine.

Or may it be due to the heart being contracted, and consequently smaller, when the mitral orifice would be brought more anterior; or are both combined? If the alteration be due to the rotation of the heart, then tricusped murmurs should be the reverse of mitral; namely, most intense at their commencement. But tricusped murmurs are often so covered with pulmonary rhonchi, that it is extremely difficult to listen attentively to them.

On the Generation of Murmurs.—The experiments were made with an aörta attached to a tap, and a murmur produced by tying a piece of twine round it. By this means two murmurs were produced, one having its point of greatest intensity over the place of constriction, the other beyond this. The first was probably due to the constriction, the second to the waves produced in the water. The last was so strong, that it rendered the first inaudible in passing with the current; but it was distinctly audible for some distance in the opposite direction (towards the mouth of the tap). The first murmur was of a much softer character than the last, which was harsh, roaring, and grating. The first was audible till the stethoscope was placed beyond the point constricted, when the second louder one immediately became audible, and rendered the other inaudible. These two murmurs, and the suddenness with which you come from one to the other, will possibly account for those great and sudden variations sometimes observed on moving the stethoscope only a very small distance over the chest, and the point midway may, perhaps, be taken as the point of constriction. When the amount of constriction was kept the same, but the force of the current increased, the murmur, become lowered in pitch, increased in intensity and harshness.

If, however, the force of the current was kept the same whilst the ligature round the aörta was tightened, both the murmurs became much heightened in pitch. It has long been known that old murmurs are, as a rule, high pitched; but old murmurs are those also which are the most constricted, and the above experiment will thus probably explain this fact; and the elevation of pitch may, perhaps, be taken as a guide to the amount of constriction.—*Edinburgh Med. Jour.*, February, 1861.

ART. III.—*On the Importance of the Functions of the Skin in the Pathology and Treatment of Tubercular Consumption:* By ABRAHAM TOULMIN, M. D., M.R.C.S.E. Read before the Harveian Society.

FOR the causes of tubercle we have been taught to look to those errors of life which lead to deterioration of the health, as humid air, low diet, insufficient clothing, prolonged lactation, inebriety, or indeed to any exhausting influence to which the constitution may be subjected for a sufficient length of time. Nevertheless, we have absolutely no data to show that such causes are sufficient to produce the disease, whilst we have abundant evidence to prove that it is produced independent of all of them. There is, however, one cause connected with these errors of life in all respects equal to the occasion; and possessing this, I deem it more philosophical to be satisfied therewith, than to refer to others of which the power is problematical. I allude to the breathing of impure air, and air in so small a quantity as to render it impure, especially during the night. Whenever this is the continued state of existence the result must be a deficiency of oxygen in the red globules of the blood, and this I would especially beg leave to offer as, in every instance, the proximate cause of tubercle. The consequence of this want of oxygen in the red corpuscles of the blood would necessarily be, the deposition of plastic fibrin in an incomplete state of oxygenation, and therefore of organization, in a state unfit to be received back again into the circulation, and thus incapable of being ultimately got rid of by the metamorphosis of tissue constantly going on. From its imperfect organization and its being unfit to become part of the living fabric, this fibrin remains unabsorbed, as a molecule of extraneous inert matter in the system, offering to the observer all the characteristics of tubercle. That tubercle, *per se*, is neither malignant nor tending to the shortening of life, may be inferred from the fact of its being found in the lungs of the new-born child, as well as in those of the octogenarian who has died of old age. Like all newly-formed parts, tubercle is prone to ulceration, and when this occurs in the lungs, it *kills mechanically*, by the ulceration extending to the surrounding lung tissue in which it lies imbedded. Tubercle is to be found in other parts and organs as well as in the lungs, and when such parts are not essential to life, then its ulceration is a point of little moment. From a consideration of these premises it may be fairly inferred that *tubercle is neither a disease of the lungs nor of the air-tubes;* that its being found deposited in them is an accidental circumstance, not arising from disease of those organs, but from deficient oxygenation of the blood, and therefore that tubercle is most essentially and purely a blood disease.

I would now advert to a subject on which I fear my opinion may be considered very heretical, and yet it is one of great importance to the comfort and well-being of consumptive patients, and one moreover on which it is equally important that there should be no discrepancy of opinion. I mean the climate best suited for their residence; and here I may be permitted to ask, why do we so sedulously avoid cold air for consumptive patients? The only answer I

can conceive is, that phthisis being generally considered a disease of the lungs, and pulmonary diseases being more rife in winter than summer, the conclusion *is jumped at* that the breathing cold air must be the exciting cause of pulmonary diseases, and, amongst the rest, of phthisis. With this conclusion, erroneous as I deem it to be, I do not desire at present to interfere, except in the especial instance of tubercle, and here a number of facts present themselves which should lead us to ponder well whether the ordering a warm atmosphere for such patients is, or is not correct.

The first and most important fact is, that in the higher northern latitudes, such as Sweden, Norway, Iceland and Russia, pulmonary consumption is almost, if not altogether, unknown. The second is, that in all the artic voyages that have been made of late years, consumption is not to be found in their bills of mortality. Whilst the third and very significant fact is, that the sailor—exposed as he is to the most sudden variations of temperature, and without shelter from wind and rain, with clothes generally wet to the skin—has, nevertheless, an almost complete immunity to phthisis. Yet this fully accords with my experience of the hygienic treatment that I have found most successful in arresting this disease, namely, permitting consumptive patients to breathe the dry, cold, and pure air of the south downs, rather than the warm and moist air of the shore.

And now, permit me to ask, what is the inference that should be drawn from such facts as these? This most important one—viz: that if tubercle be really a blood disease, arising from a deficiency of vital air, and not a disease of the lungs, or air tubes arising from cold, that then the sending consumptive patients abroad to a warm climate (except in the latest stage of the complaint) is a grave error, which must be mischievous, inasmuch as the warmer the climate, the more relaxing does it become, and the less oxygen does the air contain. Another corroborative and important fact in connection with this subject is, that nature has made man by his peculiar physicial conformation capable of breathing equally well the air of the arctic as the torrid zone, and that she has furnished him with no means of guarding the lungs against the effects of either cold, or caloric; but on the contrary, that the skin is furnished with the most elaborate apparatus for preserving a uniform temperature to the body, the nature of which it is not necessary here to discuss. It may, however, be permitted me to observe how wonderful is it, that at St. Petersburgh, for instance, with mercury at its freezing point (40° below zero), and in the arctic seas, with the thermometer still lower, viz: at — 60°, our lungs inhale the air without any sensation of cold. It is the skin alone to which all such sensations are referrible, and it is the skin only that requires guarding against injury arising from what is called "taking cold."

If, however, the cause of tubercle be as I have stated, I shall be called upon to account for a discrepancy that appears on the very face of my hypothesis—viz: that we find tubercle is not confined to the poor, who chiefly suffer from a deficiency of vital air in their sleeping apartments, but that it is equally if not more a disease of the rich than of the poor, and that one of its most favorite victims

is the carefully-nurtured girl who lives and sleeps in large rooms, and is subject to none of those privations nor atmospheric influences that have been usually looked upon as the predisposing causes of the complaint. To explain this apparent contradiction, I must solicit your attention to what I believe to be a very general cause of tubercle, but which hitherto has been altogether overlooked. I think it will be conceded me that when we consider the importance of the functions of the skin, that that organ has not hitherto received at the hands of the profession its due share of attention. It is well known that the skin excretes not only carbonic acid and other excrementitious matters, but that it also absorbs vital air, and that in large quantities. In fact, that the skin is the viaduct for myriads of air tubes, and thus becomes *a most important breathing apparatus, not vicarious, nor ancillary, but supplemental to the lungs.* That this is the fact, the phenomena that ensued on gilding and varnishing children and animals, who died asphyxiated a few hours after, sufficiently testify; and in an equal ratio must be the morbid effect when the obstruction to the admission of air through the skin is only partial, but at the same time *continuous.* But why should the cutaneous pores of the rich be in a less patent state than those of the poor? From the fact that the Christian religion does not make the frequent ablution of the body a part of its ceremonial law, as both the Jewish and Mahommedan religions do, and partly also from ablution of the skin not being so luxurious an operation in this country as it is in more eastern climes, we are certainly not in the habit generally of making the washing of the whole surface of the body a part of our daily toilet; nevertheless, the better classes of society esteem themselves as being extremely clean in their personal habits, inasmuch as most of them change their linen daily, or at least on every alternate day. But this does not remove the exuviæ momentarily forming on the surface of the skin, the joint production of the sordes from within, combined with the debris of the cuticle, which, if not removed, soon forms so complete a coating, as to become more or less impervious in a very short time.

But I believe there exists a cause still deeper than this. We are all of us continually seeing "acne" in the face, and we all of us know that this is merely inspissated perspirable matter obstructing the cutaneous pores, the external points of which are blackened with the soot of the atmosphere. From seeing these black points only on the face, we conclude (if indeed the subject crosses the mind at all) that the face is the only part where the pores are obstructed; not so however, as they are to be found equally impacted with sebaceous matter all over the body. There are three causes why the working man does not acquire this abnormal state of skin. First, the frequent perspirations that his employment induce; secondly, the weekly washings that are required in consequence of the unclean nature of his employment; in addition to which, he is compelled from necessity to a more restricted diet, and greater activity of body than the class above him. In accordance with the above explanation we have a large number of persons among the better classes of society, who, from the causes just mentioned, have their cutaneous

pores generally more or less obstructed, which obstruction must prevent the free entrance of air, as well as the exit of carbonic acid from the body, and thus we have the same set of causes operating through the skin of the well-to-do as are produced in their less fortunate brethren through the medium of the lungs, that is, an imperfect oxygenation of the blood. That this is no fancy portrait, but a real and striking likeness of the state of the skin of the larger portion of society at the present day, I appeal to any one who has seen the operation of the hot air bath after the surface of the skin *has apparently been washed clean with soap and water*. It is extraordinary how large a quantity of this inspissated sebaceous matter is first softened, and then expelled by the operation of this artificial perspiration.

The importance of the treatment that I am desirious of seeing introduced for the cure of phthisis, especially in its earlier stages, has been slowly forced on my attention by its own intrinsic merits, during a period of time when I was paying particular attention to the functions of the skin in connection with the treatment of gout and rheumatism; many of the symptoms of phthisis, as the rigors, and night sweats, appeared to indicate so strongly functional disorder of the skin, as determined me on the first opportunity to try the hot air bath in consumption, as I was then testing its value in the above-named complaints. The first case that occurred to me, was that of a young woman in whom softening had already commenced ; she was first placed in a hot water bath, for the purpose of thoroughly cleansing her skin with soap and flannel, which much facilitates the subsequent perspiration of the hot air bath, in which she was then put, and remained until she perspired profusely, when my desire was, to have placed her under the cold shower bath, but for want of it, a blanket was placed inside the empty body bath, and then a pail of cold water was thrown over her in it. The result was so satisfactory and encouraging as to induce a repetition of it, after which I lost sight of my patient for more than a year. The next (gratuitous) case that occurred, was also a female, in whom both hectic fever and purulent expectoration were fully established ; in fact, I was fearful, without some check on the heart's action, to place her in the heated atmosphere of the hot air bath, and, accordingly, previous to her entering it, I placed a bag containing two pounds of bruised ice on that viscus, the bag being externally thickly covered with flannel. The effect was marvelous. The ice did not impede the perspiration, the pulse was not accelerated, whilst the purulent expectoration was quickly and wonderfully diminished. The treatment was repeated three or four times, when she also ceased her attendance ; but I had the satisfaction of seeing both these patients more than twelve months afterwards, and found that both had passed the year comparatively free from complaint. I mention these cases to show the routine of treatment ; and did time permit, could have added many more.

So strong, however, were my convictions at this time that when once hectic fever and purulent expectoration were fully established, or rather let me say, when once the pulse became *permanently accelerated*, that a cure was impossible, that I doubted my own

cases, and believed that because they got well they could not have been tubercle; and it has been only with the lapse of years, and the accumulation of cases, and occasionally meeting with patients who had been under treatment years before, and now exhibited every sign of perfect health, that I began to think the treatment worthy of being submitted to the notice of the profession; nor do I now wish to exaggerate the results to you, and only desire to say enough to induce you to give it a fair trial. From the fact that I never saw a case of phthisis coupled with scrofulous ulcerations, and also from the frequent instances in which nature sets up an artificial discharge in the shape of fistula, I have become convinced of the importance of keeping up some permanent discharge from the skin in that complaint. The inunction of the body also with some oleaginous matter, which I believe to be very important, was first commenced under the idea of guarding the skin of those patients from cold who had the hot air bath without the subsequent cold shower bath; but I soon became aware of the value of inunction in all cases of phthisis. Inunction is said to increase the red particles of the blood, and this is borne out by the fact of its increasing the weight of the body.

The general treatment of phthisis, for which I am soliciting your approval, may be summed up in a few short aphorisms, of which the first and most important is: That by the aid of the hot air bath all the functions of the skin be kept in healthy action. 2d. That the whole surface of the body be anointed daily with some oleaginous matter, as cocoa nut, olive, or almond oil. 3d. That a local ulceration on some part of the surface be kept always patent by means of an issue, or seton. 4th. The ringing the changes on cod liver oil, iodide of potash, the mineral acids, tar, creosote, and naptha, iodine and chlorine, iron, arsenic, and quinine, and indeed, the class of *antiseptic medicines generally;* all of them admirable adjuvants in improving the general health (if selected in conformity with the functions most sympathising with and reacting on the disease), but powerless in arresting the specific lesion in question, without the previous "open sesame" of the hot air bath, *followed by the aspersion of cold or tepid water.* The hygienic treatment, according to my view of the disease, consists in promoting by all possible means (consistent with the strength of the patient) a rapid change of matter, by which two objects are attainable. 1st. The absorption of the already deposited tubercule; and the 2d, the deposition of more healthy, that is, of more highly organised matter The grand assistance of the hot air bath consists in clearing the cutaneous pores, and giving them their healthy tonicity; when the patient does, what in many cases he never did before, that is, *he breathes through his skin a large quantity of vital air which goes to maintain at the point of health* that metamorphosis of tissue in which life consists. The aids to this important result consist in ordering the most nutritious diet short of alcoholic stimuli; secondly, the living in a high, dry and marine atmosphere, and as much as possible in the open air; and thirdly, the use of all sorts of athletic exercises suitable to the sex and strength of the patient; for it is of no use ordering full diet, unless we also give air and exercise, to

convert such diet into pure and healthy blood. To this must be added, special exercises for the muscles of the chest and air tubes, amongst which, singing is not to be omitted, however little the voice may be attuned to such music.

The only special part of this treatment with which you may not be quite familiar, and which I am consequently anxious to press on your attention, is the therapeutic use of the hot air bath; which, in fact, is the old Roman method of bathing, as the remains of the baths at Pompeii in an almost perfect state testify; continued by the Turks from the taking of Constantinople to the present time. This form of bathing, however, did not originate even with the Romans, but can be traced back through the Greeks and Egyptians to the earlier eastern nations. The very antiquity of the usage demands our homage. But independent of this, its having been constantly prescribed and adverted to by Hippocrates, Galen and Celsus, at once stamps the hot air bath legitimate, and no one can be charged with hydropathy or empiricism for prescribing it. It is important to bear in mind that this process is altogether one of hot air, *not a vapor bath*, which in every respect is a much less efficacious or pleasurable mode of bathing. "In the vapor bath the blood soon acquires a degree of heat higher than its usual standard, partly on account of the greater condensing power of the medium, but principally in consequence of the check which is put upon the vaporisation of the fluid secreted by the skin."—(Carpenter.) "It has also been proved that where the atmosphere is charged with the vapor of hot water, it makes a great difference in the degree of elevation of temperature which can be sustained without inconvenience."—(Madden.) It is also questionable whether the negative state of electricity in which the body is placed is not objectionable. It is at all events the very reverse of that of the hot air bath. Such, then, is the mode of bathing that I have taken leave to introduce to your notice. It will at once be seen that it is applicable to a variety of disorders. In every case it is eminently detersive, and may be made equally deöbstruent.

With consumptive patients, for whose use we are just now specially considering it, after they have once gone through the whole process, and have thereby got their cutaneous pores thoroughly cleansed and open, it will not be necessary to go into the sudatorium oftener than once or twice a week, and then merely for a few minutes, until perspiration begins to flow, when they should be placed under the shower bath, which, as to quantity of water and degree of temperature, must in every case be regulated by its effects, but without which the patient cannot be made to feel that healthful glow and tonicity, equally luxurious and necessary for his amendment.

Thanking the Society for the kind attention it has shown me, I will close my paper with one caution, viz.: That this is too powerful and important a therapeutic means, to be intrusted to the hands of nurses, or bath people, at all events, not until we have by personal observations and frequent trial, tested its powers and capabilities under a variety of circumstances, and in different diseases.—*The London Medical Review, Feb.*, 1861.

ART. IV.—*Medicine in Foreign Lands.*

[IN the compilation of this article from the most recent and reliable sources, numerous passages of minor import have been omitted—a procedure which the remaining limited space of the Journal necessitates. The language of the several writers is in every instance unchanged. It will be seen that the whole series of papers, which relate to numerous topics, are brief sketches, although the aggregate may appear of unusual proportions.]

i. *Medical Science in Italy:* By J. SAMPSON GAMGEE, Surgeon to the Queen's Hospital, Birmingham, Professor of Clinical Surgery in the Queen's College, Staff Surgeon of the First Class, and Principal Medical Officer, late British Italian Legion.

I have already had occasion to refer to several great men of the Tuscan school; but, although this rapid sketch of the state of medicine in Italy has no pretension to completeness, I am in justice bound to consider the state of medicine in Florence and Pisa more in conformity with my appreciatian of its high relative standard. The two schools are complemental parts of one University. At Pisa all the subjects are treated in a systematic manner, while Florence is the clinical and final school. The double degree in medecine and surgery is compulsory on every candidate for admission into the medical profession. The whole course of study occupies no less than eight years. Without attempting to say a word in defence of the system under which three years' study in this country were sufficient to qualify a man to practise, I do not hesitate to express a conviction that eight years is too long a curriculum; not for the complete study of all the branches of the profession, for which the longest life is short; but for the preparation of the majority of well-educated young men to enter upon the practice of medicine with advantage to themselves, and safety to the public. Eight years are so long to look forward to, that the energy of many an enthusiastic student is exhausted by the distant prospect, and although he may be fairly diligent the whole time, he does not (I write from personal observation) accomplish a larger amount of real work than is done in five years by a student no more talented and willing, but more encouraged by the promise of earlier reward. With this solitary reservation, I consider the *system* of medical instruction pursued in the Tuscan Universities, particularly clinically by discourses and interrogatories at the bedside, to be the nearest approach to perfection which has yet fallen under my observation. Clinical lectures are undoubtedly useful as a part of the system of instruction, but the bedside is *the* place to observe, reason and determine; not with that excessive minuteness which takes note of every accidental feature, and frequently takes no cognizance of typical characters, but with a spirit of philosophical eclecticism. Neither is it sufficient that a professor at the bedside should be a quick observer and an eloquent expositor: he

requires to be a patient teacher, ever interrogating, and inviting questions from his pupils, citing illustrative cases from ancient and modern records, and losing no opportunity of combining theoretical and practical information.

Another great feature of the education in the Tuscan University is, that no branch of practical medicine or surgery is neglected. Nothing is heard there of the abuse of special hospitals, because all diseases are treated with a due regard to their frequency and importance. Happily special hospitals are the plague-spots which have attaacted notice in our own (classically speaking) vicious system of hospital management, and there is no doubt the present agitation will be productive of great good, though not necessarily in the sense apparently intended by the compact body of men in authority who signed the famous protest; a protest, containing nothing positively untrue, founded on a partial truth; but truths to be salutary require to be comprehensive. Narrow views rarely furnish data for reliable guidance in large affairs, and what larger affair can be conceived than the administration of public charity so as to combine the economical, and withal efficient, administration of medical relief with the growing resources and requirements of Medical Science?

However great the value of book-knowledge, it is undeniable that the best test of ability and usefulness in our profession, is the kind and quantity of practical information which a man possesses, and his intuitive and acquired aptitude in applying it. Often, indeed, in individuals literary and practical distinction cannot be rightly claimed in equal ratio, and cases are not wanting in which the two are in inversed proportion; a fact from which wrong inferences are too often deduced with reference to the absolute and relative value of theoretical information. Dispassionately compared with that of France and Germany, our own medical literature cannot well be said to afford matter for self-gratulation; yet, in hospital wards, I feel satisfied that English surgery holds the first rank. Little inclined by nature to imaginative impulses, Englishmen are unquestionably endowed in a rare degree with strong common sense. Brown and Broussais produced little effect this side the channel, and that little vanished long since; the reverse in France, notwithstanding such works as that masterpiece of medical reasoning—the *Examen critique* of M. Louis. Italy, as already remarked, has been inundated with French works; English ones have been little read there. The omission was tersely charged to his countrymen by the great Cesare Balbo: "Già in Italia d'Inglese poco si legge." At the same time an extreme and misjudged extension of an otherwise high-minded and just political antipathy has kept the Italians in comparative darkness as to the great works of the German school; the result of this has been the protracted vitality of scholastic errors, which have vanished as chaff before a north wind, wherever statistics have been rightly applied and the collateral branches of the science adequately cultivated.

When a few years since the King of Piedmont lost within a few weeks of each other his mother, his wife, his brother, and his prime

minister, it was pretty widely suggested that the long chain of catastrophes was owing to excessive venesection. I had occasion shortly afterwards to meet one of the court physicians in consultation on the state of a distinguished general, a septuagenarian, whom I found pale, feeble, and slightly delirious, with large, pale, flabby tongue, indented at the edges, with rapid, small, soft pulse. He had been bled five times in a week, a sixth withdrawal was in question, the general practitioner and the court physician strongly urging it, Dr. Salvatore Tommasi as forcibly dissented. I was honored with reference as the arbiter. "Ubi stimulus ibi fluxus" was the maxim quoted; but the King's physician found himself in a difficulty when I submitted that there was a delirium of starvation as well as a delirium of meningitis. Dante has beautifully described Ugolino growing blind and raving, when starved with his children in the tower of Pisa; I repeated the lines, and asked my venerable confrère if he would have counselled the withdrawal of a glass of blood from the delirious count or the administration of a glass of Chianti. Reason prevailed; chicken broth, quinine, and iron soon restored the gallant officer.

Every one who has visited the Paris hospitals has witnessed the profuse suppurations, the pale thin faces of so many of the operated, with low diet inscribed upon the board. The same error of system prevails in Italy. A hospital surgeon having in my presence applied the actual cautery to a large carbuncle in an emaciated individual, I was surprised to hear the prescription "dieta rigorosa." I made some observation in point, it was courteously listened to, but not weighed, and we passed on. The patient was at the time the subject of a low fever, and somewhat delirious. A week later I chanced to be in the same ward at the time of the visit. I was surprised to find the poor creature still alive; he was asleep. The surgeon inquired of the patient in the next bed how long the man had slept. I shall never forget the effect of the reply. "The poor fellow's brother had managed to smuggle a loaf into the hospital the day previously, it was voraciously eaten, and sleep with little interruption had put an end to the delirium." The testimony was so strong that my honest colleague replied, "It looks, indeed, as if his delirium were due to inanition." A tonic system was henceforward adopted, and the man recovered.

No one more than myself regrets that prescribed limits of space have only permitted a sketch of the present condition of Italian medicine; full treatment of the subject would necessitate a comparative view of the state of medicine and surgery throughout Europe.

At a moment when Italian affairs engross the attention of the civilized world, it has appeared opportune to publish facts not generally known, in the profession many of whose members in all countries occupy foremost positions in the ranks of the learned, and among the benefactors of their kind. It has been too much the fashion to extol the past and deplore the present state of Italy; it has not been sufficiently considered that the decline of the Roman Empire was but an epoch in the history of Italy as of the world. The story of the Italian Republics offers indeed ample matter for sorrow-

ful contemplation, but not a little also for admiration. How much the world owes to Italy in the revival of letters, of the arts and of the sciences, has been often told; but, rapidly as time flies, it is too often forgotten how recent are the days when Titian and Annibale Caracci were the anatomical draughtsmen of Vesalius and Carlo Ruini—when Realdus Columbus, while dissecting, within the walls of Rome, the body of Loyola, was meditating the discovery, which he perfected, of the pulmonary circulation ; when William Harvey was one of the throng of students in the Halls of Padua. In the revival of surgery, Magati has fair claim to a large share in what is counted Ambroise Paré's greatest discovery; when physiology rose to the rank of an experimental science, it had no more original and indefatigable cultivator than Spallanzani. Antonio Scarpa was a worthy rival of, if not a man of greater powers than, Astley Cooper and Baron Dupuytren, while modern medicine counts few more illustrious than Rasori and Tommasini. For the application to the arts and to medicine of the science of electricity the world is indebted to Volta and Galvani, whose foremost positions have not been forfeited by Bonelli and Matteucci. As constitutional Englishmen, we may disprove the politics of Bertani and Cattaneo, but as members of the medical profession, we are bound to admire the intellectual power by which they have achieved positions to influence their country's destiny. As professional brethren, and free-born Britons, we are proud to think that, in the most critical days of Italian freedom (might we not say of the freedom of learning and of the world?), Dr. Lanza held the portfolio of public instruction in Cavour's administration, and now presides over the deliberations of the Italian parliament. We glory in the reflection that Rizzoli at Bologna, Zannetti in Florence, and Tommasi in Naples, from being great surgeons and physicians, learned and Catholic, indefatigable and self-denying, have acquired power which they have exercised as great Statesmen in the most critical moments of their country's history.

The Italian revolution has been rendered possible by the coöperation of an honest monarch and a nobility with a history, by the concurrent action of the municipalities and the universities—the powerful and the learned.—*London Medical Review*, February, 1861.

ii. *Letters from Vienna.* Edited by Dr. Mercer Adam, *Edinburgh Medical Journal*, 1861.

What has occurred in Germany since my last letter reached you that can be said to interest the readers of a medical journal? We have seen German natural philosophers holding high festival, German Universities celebrating jubilees, the German nation joining heartily and zealously in these demonstrations, and German princes attending assemblages of scientific men striving earnestly after light and truth; thus practically recognizing the mighty influence for good which science exercises alike on the destiny of states and the welfare of society at large. One of these German princes thus addressed his learned subjects on one of these occasions: "I know well how to appreciate the value of science; and I am firmly convinced of the truth of your words, that it is only by the cultivation of

science, that a state can prosper." These words bespeak the lofty triumphs of science, and promise the richest rewards to its disciples; and, spoken as they were by one of the highest princes, they seem to offer the assurance of a solid basis for society. You see Germany awakes once more, and these honest words will ring through the world. The pioneers of science and intelligence in a land resemble the nucleus of a large crystal—the masses rally round them, well knowing that the man of science is the man of truth; that the true *majestas populi* is his unselfish aim; and that he only seeks truth, and is restless till he finds it. Let the great be ever thus foremost in assisting by their personal influence, in the spread of true ideas and noble thoughts, and they will gain for themselves more homage than mere "pomp and circumstance" can ever command, and they will reap lasting benefit to themselves and their states. But enough concerning the present relations of the state to science in Germany.

I am happy to tell you that the grand meeting of the Association of the German Natural Philosophers and Physicians, which was held at Königsberg, in the end of last september, was very satisfactory and successful in every respect. The old veterans of science displayed as much zeal and perseverance in the cause as in the days of yore; and we hailed with pleasure a large accession of talented and younger men. Although there were not many new discoveries communicated, the old ones were thoroughly "ventilated" in every possible way, and illustrated by manifold carefully-performed experiments and observations. In our special department of science, experimental physiology and pathological anatomy continue to be prosecuted in Germany, with ever-increasing pleasure and success; but, as regards the advance of therapeutic medicine, I must confess that I look with more hope towards the west than to our colleagues here at home. When I mention the well-known and honored names of Virchow, Traube, Von Wittich, Remak, Von Siebold, Von Patruban, and Burdach, as ornaments of this association, I need hardly say more as to its thorough efficiency.*

Since the conclusion of the holidays the medical societies in Vienna have resumed their former activity. I will pass over many of the less interesting subjects which have been brought before them, in order to tell you something of a communication made to the Royal Society of Physicians by Dr. Pollak, the private physician of the Shah of Persia. This gentleman read a very remarkable paper "On 158 Lithotomy Operations performed in Persia between November, 1852, and June, 1860." During the reading of the communication all the numerous calculi, which he had extracted, were exhibited in the rooms of the Society; and seldom has greater interest been excited among the profession than on this occasion. Dr. Pollak describes calculous diseases (lithiasis) as being very common in Persia, especially in those provinces which were formerly known

*The eminent Professor Rathke, who was to have officiated as president of one of the sections at Königsberg, died suddenly on the 15th September, on the day before the association's first meeting. Professors Wittich and A. Wagner acted as presidents of sections. Amongst those who were present, and took part in the proceedings, were—Halla, of Prague; Von Seibold, of Munich; Schultz-Schultzenstein, Virchow, Gurlt, Traube, etc., from Berlin; Pollok, of Teheran; and Dr. Clark, of Massachusetts, U. S.—*Ed.*

by the names of Media and Hyrcanium; and also in Azerbijan, Tabriz, Hamadan, Kaswin, Teheran, Koom; and near the Caspian Sea, in Talish, Ghilan, Resht, Masanderan, Demawend, and Shahrud-Bustam. It also prevails to the south of Koom, in Kashan, Ispahan, Ramish, and Shiraz. In Persia, lithiasis is commonly confounded with gonorrhœa; and a patient, on presenting himself, usually says, "Susanek darem" (I have gonorrhœa). Pollak told an amusing story of a Persian physician, who, when asked by the Shah whether he could not cut stones out of the body like the German doctor, replied: "May it please your highness, we never resort to such extreme means; we possess medicines which make them pass in the water."

As regards the etiology of lithiasis, Dr. Pollak attributes it greatly to the frequent use of milk diet, especially of sour milk, which is eaten and drunk in every form in Persia; and also to the immoderate eating of sour, unripe fruit. He considers the large quantity of rice which is eaten to be another cause; and, he is of opinion that stone is less likely to occur in those who use flesh diet and drink wines containing a fair proportion of alcohol. In Persia the people chiefly live on vegetable food, and only the upper classes drink wine. He says that stone in that country appears to be quite unconnected with gout or hæmorrhoids; for gout is a very rare disease in Persia, and the patients who came under his care were principally young people. That a purely vegetable diet has some influence in producing stone seems further proved by the fact that, in Persia, calculi are frequently found in the kidneys and bladder of the mountain sheep. Men are more frequently the subjects of lithiasis than women; and the disease is rarely seen among the Jews and Armenians, Pollak having only noticed four cases among these tribes, in three of which he operated. He never saw negroes affected; and only in three cases observed stone among the children of the mixed Mongolian races. Rich and poor alike are subject to the malady; but by far the greatest number of cases occur during the early period of life. Of the 158 patients on whom Pollak operated, 69 were between the ages of 1 and 7 years, 53 between 8 and 14, 9 between 15 and 21, 16 between 21 and 50, and 11 above 50. He attributes this great prevalence of the disease in childhood to prolonged lactation; for, in Persia, infants are usually suckled for two years, and often for a longer time, by the rich inhabitants. Occasionally there appears to be a hereditary predisposition to the disease. Pollak operated on two brothers, whose uncle and nephew had both had stone, and other members of whose family were known to have suffered from calculous affections. The lateral operation was usually performed (in 121 cases); and Pollak only twice made the incisions from the rectum, where calculi, the size of a pipe-head, were impacted in the prostate. All his operations were performed *sub jove*—in the open air—beneath the shade of a tree or of a verandah. *He never operated in a room.* He almost invariably used chloroform as an anæsthetic. In 147 cases he found only one calculus in the bladder; but once there were as many as six, in two cases four, and in eight cases two stones. Of the 121 patients who had the lateral operation per-

formed, 114 recovered and 7 died. In two of the cases the wounds healed by the first intention, and were able to be "sent to the bath" (the Persian expression for complete recovery) at the end of the sixth day. When the incisions united by suppuration, the wound was generally quite healed by the fourteenth or fifteenth day. Surgical fever was rarely seen; and the doctor never had any occasion to restrict the diet after the third day. Children used to get up on the fourth or fifth day after the operation, and play about on the roofs of the houses. So favorable have been Pollak's results, that he said that lithotomy among young people in Persia was no more dangerous than paring the nails! He ascribes the unparalleled success which has attended his cases to the following circumstances: 1st. The sound constitutions of the patients; 2d. The operations being invariably performed in the open air, and the after-treatment being conducted either out of doors or in a chamber with open doors and windows; 3d. The absence of erysipelas; 4th. Dressing the wounds with fine cotton instead of with charpie; 5th. His great experience in performing the operation.*

Most of the calculi were analyzed by Professor Kletzinsky, who found them composed of uric acid, oxalates, and triple phosphates. Dr. Pollak has earned the hearty thanks of the whole medical profession by his very able communication.

Our celebrated anatomist, Professor Hyrtl, has just published a new work of 762 pages, *On the application of Practical Anatomy to Post-mortem Examinations; and on the Best Methods of Preparing Anatomical Preparations.* Every one who has seen Hyrtl's magnificent injections, and who is aware of the eminent services which he has rendered to anatomical science, will eagerly possess himself of this volume, and will be delighted with its contents. It is with much regret, however, that I call the attention of your readers to the following words, which occur in the Professor's preface: "For thirty years no treatise on practical anatomy has appeared in Germany, while, during this period, a whole library has been published on the use of the microscope. This is a sign of the times, and one not to be lightly disregarded. My apology, that the present work forms an exception to the usual custom, must consist in the fact that it has been written for a livelihood" *(welches nach Brod geht)*. I trust that, since this eminent man is under the necessity of making this statement, his adventure may be abundantly profitable; and that, ere long, a copy of his work may be found on the table of every well-educated physician and student of medicine, not only in Germany, but throughout the whole world. Hyrtl is, and has been for years, one of the brightest ornaments of our Vienna medical school; and, I doubt, if there is any man in all wide Germany who could replace him were he to become lost to us. I trust, therefore, that the appeal he now makes to his scientific *confrères* may be answered by them in a liberal manner.

* On the 21st May, 1859, he operated on *three* cases by the lateral method. Wattman, who was formerly Professor of Surgery in Vienna, once performed *seven* lithotomy operations in one day.

iii. *Ophthalmic Surgery.*

Bonn, January 21, 1861.

From papers recently published in the *Medical Times and Gazette*, as well as in other English medical journals, there still seems to be much diversity of opinion among English oculists on the value of iridectomy in certain eye diseases; and, perhaps, your readers may, therefore, be interested in some account of the results of that operation as performed by Dr. Busch, and C. O. Weber, Professors of Clinical Surgery at this University. Since the invention of the ophthalmoscope by our illustrious countryman, M. Helmholtz, no subject has occupied the minds of German oculists so much, and has elicited so many different opinions as that of coremorphosis and the effect of iridectomy as an antiphlogistic remedy in internal inflammations of the eye. It is true that it was for some time known, that the evacuation of the aqueous humor will effect a considerable amelioration in cases of obstinate choroiditis, especially if there are serous exudations with expansion of the bulbus; but the circumstance that the operation had to be often repeated and that relapses were frequent, rendered the effect uncertain, and, therefore, the propriety of resorting to it doubtful. It was also observed that, when the cornea was ruptured and prolapsus of the iris took place, a striking remission of the inflammatory symptoms generally resulted. These facts, and the observation that iridectomy performed for posterior synechiæ when the inflammation had not yet subsided, exercises a very beneficial influence in shortening the latter, led Dr. A. von Graefe to the conclusion that iridectomy might be advantageously performed not only in acute and chronic iritis, but also in certain destructive forms of keratoiritis, in acute choroiditis, and in that chronic form which still retains the not quite suitable name of glaucoma. The observations made at this University the surgeons just named, prove that iridectomy is a most important addition to surgical therapeutics, and is, in fact, in some instances, the only means of saving the eye, as the iritis almost instantaneously ceases after iridectomy has been performed. The result is equally beneficial in acute choroiditis; and also in chronic cases, with opacity of the vitreous humor, when the patients have been scarcely able to recognize the outlines of large objects, to distinguish fingers, or to read very large print, the surgeons of Bonn have found that, soon after the operation, the patients are enabled to read very small print without difficulty. Similar results have been observed in cases of ulceration of the cornea which are connected with iritis, and which, if they take the form of deep-seated semicircular ulcers, threaten speedy destruction to the eye. In such cases, however, the operation requires to be repeated. Professor Weber has, in most of his cases, only resorted to iridectomy after the antiphlogistic remedies, and especially the administration of calomel, even to salivation, had failed; and the success has exceeded his expectations. The process of operation, although simple, nevertheless requires great care. The incision should be an ample one, directed superiorly and internally, beyond the margin of the cornea, and nearly to the level of the iris, so that the ligamentum pectinatum

iridis is severed. If there are no adhesions of the iris, it generally prolapses immediately, and there is no difficulty in seizing it. The segment of the iris should be rather large, and Mr. Hancock is quite in error when he says in his paper on division of the ciliary muscle in glaucoma, that all oculists agree that the smaller the quantity of iris removed, the better. On the contrary, small and incomplete excisions of the iris are rarely attended by striking success; and it is, perhaps, to this circumstance that the failures of some English oculists, who have only cut out infinitesimal portions of the iris, are to be ascribed. The segment of the iris should be completely removed up to the ciliary margin of the iris. Cutting of the cornea must be carefully avoided, as, if this be done it is not possible to remove the iris up to the ciliary margin. Dr. A. von Graefe considers that the removal of the tension of the bulbus is the cause of the curative effect; and it is certainly true that, in the morbid conditions above mentioned, the intra-ocular pressure is so considerable, that the aqueous humor often spirts out with great force when the operation is performed. On the other hand, Mr. Schweigger, one of Von Graeffe's pupils, holds that severing of the anterior tendinous insertions of the tensor choroideæ is most instrumental in effecting the cure, while the Surgeons of Bonn are of opinion that the effect is to be compared to that of an ample incision into any inflamed tissue, as for instance in panaritium, abscess, etc., when the inflammation generally subsides immediately afterwards. Iridectomy is also advisable as a preparatory operation for linear excision of cataract, as sometimes after the latter has been performed, a considerable tumescence of the fragments of the lens, and pressure on, and irritation of, the iris take place. The operation, which causes only a very slight wound, is scarcely ever followed by bad symptoms, so that the patients are generally able to leave their beds in a few days afterwards. The enlargement of the pupil by the coloboma iridis and the disfigurement of the eye, upon which the opponents to this operation have laid so much stress, are scarcely perceptible if the incision is made superiorly and internally.

With regard to the operation for cataract, I may mention that German oculists have now almost entirely abandoned reclination, as they found that even in successful cases, where the patients could see very well for some time after the operation had been performed, after a few years blindness recurred; and in such cases the examination by means of the ophthalmoscope always showed that, where the lens had been placed, a choroiditis had set in, which again destroyed the sight. The results which are obtained by the ordinary extraction by a flap formed upwards for the hard cataract of old people, and by the linear incision for the soft cataract of young persons, are so satisfactory that other modes of operation are scarcely necessary. In thirty-five cases of extraction by flap, Professor Weber has only had two unfavorable results; and even these patients completely recovered the sight of the other eye. As to linear incision, the same surgeon strongly recommends the operation to be finished as rapidly as possible, and to avoid bruising the edges of the wound by too diligently endeavoring to remove every small fragment of the cataract, as by such proceeding iritis may be induced.

As the question of curing cataract without operation has lately been again discussed in some papers which appeared in your columns on the "Prussian Oculist," the late Hofrath de Leuw, I think it will be interesting to your readers to hear that Dr. Langenbeck, of Hanover, has just now recommended a new process of curing cataract, which he calls "insolation," and which consists of the application of the concentrated rays of the sun to the lens. This is done by directing the focus of a burning-glass into the eye for several minutes, so that it falls exactly on the opaque lens; and he repeats this operation three times within a quarter of an hour. He relates no less than nine cases in which he says that he has affected a cure by this means. As Dr. Langenbeck was the first to give the true theory of accommodation, and has also, with his cousin, Prof. Langenbeck, of Berlin, introduced the forcible extension of anchyloses into practice; the extraordinary process originated by him deserves to be subjected to a conscientious examination, although we are, generally speaking, fully justified in disclaiming all curative effects in cataract except by operation. Professor Weber has, therefore, instituted a series of experiments on rabbits, in which he first artificially produced an opacity of the lens by incision and then tried the effect of insolation; but he has never seen the slightest benefit to the lens result from it, while several of the rabbits which were operated upon have died of inflammation of the brain. We have therefore some reason to be cautious in applying this new process. The supposition that cataract may be cured without operation is not *à priori* unreasonable, as if it were possible to induce a fatty metamorphosis of the whole substance of the lens, a total absorption of it might be fairly expected; and it was perhaps this idea which induced the late Hofrath de Leuw to prescribe palm-oil for patients suffering from cataract; but even then there would be certain remains which cannot be absorbed, as cholesterine, the capsule of the lens, etc., and these would still require an operation for their removal.

Professor Weber has also recently made some microscopical observations on the intimate structure and inflammation of the corpus vitreum. He has found that this consists, even in the adult, of very delicate cellular elements, which it is very difficult to make clearly visible. These cells are analogous to those of the conjunctive tissue. Generally the nuclei only are to be perceived, and the outlines of the cells themselves disappear, as they flow together into the mucous substance; these outlines are only to be artificially reproduced by adding to the substance some salt water, together with a few drops of nitric acid, or alkalies alone. Such a structure of the corpus vitreum as has been described by M. Hannover, does not exist; there are no septa, neither radial nor eccentric; and that which was believed to be such, consists of fibrous elements, which run parallel to those of the corona ciliaris and keep the corpus ciliare together. Pus is formed by an excessive growth of the nuclei mentioned above, and not unfrequently the whole substance of the corpus vitreum may, in this way, degenerate into pus. Besides this, other inflammatory processes may take place in the vitreous humor;

blood-vessels are formed, which proceed from the vessels of the retina and grow into the corpus vitreum; or there is fatty degeneration proceeding from the cells, and deposition of cholesterine, formation of fibres, and of thick fibro-cartilaginous masses, and even ossification. Thus, Virchow's theory, that in a tissue which is quite devoid of vessels, inflammatory changes may occur just as well as in such which possess blood-vessels in abundance, has obtained a fresh proof. The morbid processes just mentioned may be produced by any kind of irritation, but they more especially follow traumatic injuries; and this is another reason why reclination should not be resorted to.

Dr. Max Schultze, who has recently been appointed Professor of Anatomy at this University, has just published some important microscopical observations on the intimate structure of the retina; among which I will only mention that the retina is held together by a considerably developed structure of connective tissue, to which belong Muller's fibres, which were formerly believed to be nervous fibres, but are not so. In cases of Bright's disease, it is this connective tissue which first shows fatty degeneration; and many cases have been observed here, in which only the examination of the retina by means of the ophthalmoscope has suggested the existence of Bright's disease at a time when there was no other symptoms of this disorder to be perceived. In such cases the retina shows whitish masses of fat, which surround the optic nerve, and also numerous extravasations of blood. Thus, the ophthalmoscope proves to be an important means of diagnosis even for internal diseases.

Before concluding this letter I will mention some glycerine-ointments recently introduced into practice by Dr. Simon, of Berlin, and which have been amply tried here. They are prepared by mixing one part of starch with five parts of glycerine, at a temperature of 70° R. (190° F.) These ointments have the advantage that they cannot become rancid, and they completely dissolve iodide of potassium, nitrate of silver, bichloride of mercury, alkaloids, extracts, etc. They are, in many cases, preferable to the common fat ointments, and especially the glycerine-ointment of red precipitate has proved very useful in Ophthalmic Surgery.—*Med. Times and Gaz., Feb.*, 1861.

iv. *Parisian Medical Intelligence:* (From the special correspondent of *The Lancet.*)

I mentioned, some time back, that M. Hatin (a leading Paris obstetrician) had very warmly urged upon the attention of the Academy of Medicine the propriety of suggesting some modification in the existing regulations regarding the performance of the Cæsarean operation, and had pointed out that the uterine section, in order to be of service to the child, should be undertaken early and not delayed, as enacted by the present forensic statute, until twenty-four hours after the death of the mother. A case, in which the positive advantages of early surgical interference are clearly illustrated, occurred three weeks ago in the service of M. Boucher. A female, aged thirty-three, was admitted in the hospital St. Antoine,

under the care of this practitioner. She presented all the signs of phthisis, and was, moreover, in the eighth month of her third pregnancy. In addition to the ordinary consumptive symptoms, there existed a grave complication—œdema of the larynx, with the characteristic hoarse, stifled, spasmodic cough, and dyspnœa. By the 1st of December, a week after the patient's entry, the attacks of suffocation, always nocturnal and of a periodical character, had increased in intensity to such an extent that death from asphyxia was on more than one occasion apprehended, and tracheotomy proposed, but on reconsideration, deemed inadmissible, in consequence of the extensive pulmonary disorganization. Nevertheless, a fatal termination being considered as inevitable and impending, the house-surgeon was desired by M. Boucher to be prepared to perform the Cæsarean section for the preservation of the child in the event of the mother succumbing during his absence. Within forty-eight hours after the receipt of this order, the *interne* was summoned to the poor woman's bed-side, and found that life was already extinct. Hysterotomy was immediately resorted to, and within two minutes and a half of the time of the mother's death, a puny, ill-developed infant, of the female sex, and apparently of not more than seven months and a half, was withdrawn from the uterine cavity. Although up to the last day of the patient's life the movement of the child and the beating of the fœtal heart had been distinctly felt, neither the latter nor the umbilical cord gave any evidence of pulsation; the contact of the external air failed to excite the respiratory function, and the usual taxis of frictions and slapping were not more successful. No laryngeal tube being at hand, the *interne* had recourse to insufflation, mouth to mouth, and in ten minutes, under the combined influence of this and other means, amongst which the mustard bath was the most efficacious, the child began to move, breathe, and at length to cry. As soon as the movements of the heart were satisfactorily reëstablished, the section of the cord was effected, and ere long the infant took the breast of a wet nurse without difficulty, surviving twenty-one days, at the end of which time it succumbed during an attack of *muguet* (ulcerous stomatitis). The complete success (in as far as the post-mortem Cæsarean section is concerned) of such an operation as the foregoing, is quite sufficient to warrant M. Hatin's perseverence in his exertions to procure the revocation of the existing legal regulations in connection with the subject.

An interesting memoir has been forwarded to the Academy of Sciences, by Dr. Guggenbühl, detailing several curious particulars relating to cretinism, and descriptive of the successful results obtained in the majority of cases at the Abendberg. According to the observations of the author, who is, perhaps, the greatest existing authority on the subject, the debased mental and physical condition, termed cretinism, consists in an affection of the cerebro-spinal system, attended by certain pathological changes, of various types, which produce irregular and defective developement of the body, and obtuseness of the special senses or general intellectual faculties. The most frequently present of these pathological changes is *cerebral œdema*—a condition generally accompanied by the dilatation of

the lateral ventricles by serous fluid, and, at a more advanced period, by softening of the convolutions. Up to the present moment microscopical examination has failed to detect any morbid modification or conversion of the brain tissues. Whilst, on the one hand, œdema of the cerebrum is the general rule, imperfect development of the brain, almost amounting to atrophy, is, on the other hand, occasionally, though rarely noticed; also, and diminishing in the scale of frequency, hypertrophy of the cerebral structures, and even induration, have been remarked, but quite as exceptions to the generality of the rule. Although *the* pathognomonic symptom of cretinism is a general stupor of all the functions presided over by the cerebrum, nevertheless some isolated faculties are occasionally found to be well developed; and amongst the patients at the Abendberg are to be found some who possess astonishing powers of memory, or talent for music and drawing. The hereditary tendency to cretinism, although maintained by some observers, is denied by Dr. Guggenbühl, whose experience tends directly to prove that this morbid condition is exclusively a *local* phenomenon, fostered by the agency of certain exciting local causes; these causes affecting the constitution most powerfully during the first three years of life, and principally during the period of the first dentition; and producing at the same time hydrocephalus, rickets, and other scrofulous manifestations. The principle of the treatment which has proved so satisfactory at the Abendberg institution in the cure of this nervous cachexy is that of fortifying and educating the physical faculties before undertaking the mental training. Experience has taught that the *corpus sanum* must be a precursor of the *mens sana*, and nowhere better than in the case of the cretins has the old adage been verified. For this purpose, tepid, aromatic baths, shampooing, cod liver oil, iodide of iron, electrization, nutritious diet, and plenty of exercise in a healthy atmosphere, have been employed, and with the best results. The asylum for cretins should at one and the same time be an hospital and a school; workshops, agricultural pursuits, all should be included in the treatment, and each patient should be allowed to select a pursuit or a trade. So successful has this system proved, that its originator mentions that in all the cases committed to his care during the first six years of life, he has been able to effect more or less complete cures, excepting those in which convulsions, always a grave complication in this malady were present.

M. Demarquay, surgeon of the Municipal Maison de Santé, has lately made some experiments (more vivisections, alas!) in order to test the effects of the strangulation of a portion of intestine, by ligature, upon the natural temperature of the body. Out of eleven dogs in which various portions of the intestinal tube were thus strangulated, the normal temperature in seven was considerably lowered, and in four it was slightly increased, by the application of the ligature. When a portion of the bowel high up was strangulated, the decrease in heat was found to be more marked than when a coil of intestine in the vicinity of its terminal extremity was operated on. I have thus briefly referred to M. Demarquay's investigations, from the fact that the result might possibly aid in the localization of an

obscure hernia or intussusception. If the collapse were extreme and the animal temperature unusually depressed, the strangulation might be traced to the duodenum or jejunum.

A report is current in well-informed medical circles, that the creation of a new Chair of Pathology, to embrace the subject of syphilis, is contemplated, with a view of course to the continuance of M. Ricord's invaluable clinical teaching. As, however, a proposition to the Government for the endowment of such a professorship must necessarily emanate from the members of the Faculty in the first place, and as the feeling of this learned body towards M. Ricord is well known to be anything but amicable, the rumor appears improbable; and I give it to you, consequently, rather as gossip than news.

Paris, Jan. 7th, 1861.

Whilst the hygenic advances due to time, science, and the general progress of civilization, have succeeded in curtailing some individuals of the long nosological category to which flesh is heir, that indefatigable pathologist, M. Duchenne de Boulonge, has been doing his utmost to make good the numerical deficiency, and restore to mankind an equivalent for each lost item of the unwelcome legacy. One of the most important of the recent additions to pathology, as far as the differential diagnosis of paralysis and the disorders with which it may be confounded is concerned, and which we owe to M. Duchenne, is the classification, under a separate head, of a malady mis-called *paralysis*, and ordinarily ranged amongst those disorders caused by softening or other alteration of the spine or its envelopes. I refer to that definite group of symptoms, indentified and rescued from the chaos of nervous affections by this pathologist, and placed among the still obscure *neuroses*, under the title of "Progressive Locomotory Ataxy." As in 1859 Dr. Duchenne detailed at length his views on this malady, in the pages of the "Archives Générale de Médecine." I should have deemed the subject far too *rococo* for your columns had not a recent occurrence led me to infer that the opinions now generally adopted in France in connection with this peculiar pathological condition have not yet attained universal currency on your side the Channel. In the progressive diminution of the coördinating power, and in the simulation of paralysis whilst muscular force continues in all its integrity (as may be proved by the dynamometer), consist the fundamental characteristics of this special disorder to which M. Duchenne has recently called the attention of the profession. The subjects affected with this malady present from first to last a succession of symptoms, both regular in order and unvarying in type. The first morbid indication, which appears at the ontset of the diseases, is one often overlooked, or referred to any other cause than the real one—namely, strabismus. In certain cases, the third, in others the sixth pair of nerves, is implicated, and ocular divergence, or other deviation, accompanied by diplopia, is noticed. This symptom, which may or may not be accompanied by a diminution of visual power, is usually of short duration; its disappearance is followed by certain sudden attacks of acute lancinating pain occurring

in different parts of the body, more generally in the limbs, of an evanescent and neuralgic character, and described by the patient as resembling electric shocks. The second stage of the disease is characterized by a train of morbid expressions pointing more directly to its cerebral origin; such as vertigo, vomiting, together with the particular disturbance of the coördinating function before alluded to, and a gradually-increasing obtuseness of tactile sensibility, most noticeable in the lower extremities. The gait of the sufferer at this period is very peculiar, and distinctive of the nature of the malady. The step is uncertain and hurried, each movement of the leg resembling an awkward kick. The flexion of the various portions of this limb in progression, and more especially that of the thigh upon the pelvis, is exaggerated, and performed with a distinct effort and jerk, reminding the spectator of the movements of a child's harlequin toy or marionette—a phenomenon referred by M. Duchenne in part to a disturbance of that harmony which, in the normal state, exists between muscles contracting under the stimulus of the will, and their special antagonists: in part to a loss of that instinctive or voluntary muscular association inseparable from the working of the physical mechanism. The patient complains of the difficulty he experinces in the direction of his movements, and is often totally unable to walk, when, as in the dark for example, he cannot direct his limbs by the assistance of the power of vision. He has lost, in fact, the *automatic* portion of the coördinating function, and has to supply its place by the exercise of voluntary power. In the third and last stage of this distressing complaint, these symptoms increasing in intensity, progression is rendered imposible, and although no muscular paralysis exists, the patient is as thoroughly helpless as if stricken by paraplegia. Strange to say, in none of those cases in which a post-mortem examination of the brain and spinal cord has been possible, has the slightest organic defect or alteration been detected. The experiments of M. Flourens certainly serve to localize the disturbance in the cerebellum, the special organ of locomotive coördination, and that such is its real seat the pathological evidence of M. Duchenne tends in a great measure to confirm. Let us hope that now the various phases of this malady have been so carefully and accurately studied, a similar advance in its treatment may be made by the therapeutists, hitherto so completely baffled and unsuccessful.

Another contribution to our already known catalogue of diseases, and one for which, if M. Duchenne were the author of the complaint, and not merely the discoverer, mankind have little to thank him, is that of "Progressive muscular paralysis of the tongue, soft palate and lips." That such a pathological condition does exist as a *distinct* morbid species—a malady *sui generis*, is now beyond all doubt proved, and from the gravity of the disorder, and its (hitherto) fatal termination within a period of three years, early recognition and cautious prognosis become most important to the medical man. The affection commences in the tongue, the mobility of which is gradually diminished, and eventually lost—a condition which renders deglutition difficult, and pronunciation of the lingual sounds impossible. The paralysis of the tongue is confined to the nerves of motion, for

its investing mucous membrane, as well as that of the rest of the mouth and pharynx, retain a normal degree of sensibility. The successive and characteristic spread of the malady to the muscles of the soft palate and lips, nullifying their action, and depriving the patient of the power of swallowing, completes the symptomatic *ensemble* of this curious disorder. I am told by M. Duchenne that he has seen thirteen such cases since the year 1852, and in the *Gazette des Hôpitaux* of this week I see a fourteenth case reported by a provincial medical man, Dr. Copette, of Chauny, as having occurred in private practice. Hitherto this, like the former malady, has been found to resist all treatment.

The medical contingent of the last meeting of the Academy of Sciences is somewhat meagre. M. Flourens stated that he had repeated an experiment performed by him in the spring of last year, in order to prove the direct communication between the circulation of the mother and that of the fœtus, and with the same results. The experiment on both occasions has consisted in the feeding of a gravid sow with food tinted with a decoction of madder root, and in this, as in the former, the pigment was found to have deeply stained the bones of the fœtal skeleton.

The Academy of Medicine, on Tuesday last, listened to a very interesting paper read by M. Menière, the surgeon of the Deaf and Dumb Asylum, on a particular and grave form of deafness, which depends on lesion of the internal ear. There exists according to this observer, a species of deafness hitherto undescribed, giving rise to a series of cerebral perturbations, such as vertigo, uncertainty in walking, and occasionally producing a sudden fall, from loss of consciousness. M. Menière having frequently observed cases of this kind, had long, from special observation of their course, discarded the idea of any concomitant cerebral complication, and was lately enabled to verify his preconceived opinion, by the autopsy of a young girl, who died after having presented the above-named series of symptoms. The dissection of the internal ear revealed a definite lesion of the semicircular canals.

M. Beau, a few days ago, in a clinical lecture at the Charité, called the attention of his audience to the frequent occurrence of apoplectic seizures during the last six weeks of the year just expired—a circumstance universally attributed by medical men to the intense cold which prevailed during that period. The general fact of the prevalence of apoplexy during severe frost had not escaped Hippocrates, who classified cerebral hæmorrhage under the head of winter disorders: and the statistics of all the almshouses for the aged poor fully confirm this doctrine. Nevertheless, M. Beau maintains that this year the proportion has been far larger than usual, and stickles for the word *epidemic* as the only appropriate term in the present instance. Nor does it seem to be the first time that apoplexy has assumed this epidemic form. The same occurred in Italy, and at Rome more particularly, in 1694 and 1795, when, in the latter year at least, the occurrence appears to have been independent of a low temperature, as the winter was not remarkably severe. A like number of cases also occurred in Rome in 1705 and 1706, when Lancisi

received an order from Pope Clement XI, specially to study the malady, and the results of his investigations are published in his works. The conclusions arrived at by this physician regarding the causes of the prevalence of apoplexy were, on that occasion, that the source of the malady lay in the inequalities of the temperature preceding and accompanying the epidemic; the rapid transitions from the warmth and drought of summer to rain and south wind, and then again to the cold blasts of winter, having modified the constitution of the human body by *"relaxing the solids and favoring the baneful influence of the acrid blood."*

En revanche, Paris, this winter, has been remarkably free from both pneumonia and typhoid fever.

Paris, Jan. 28th, 1861.

A paper recently read by Professor Trousseau before the Academy of Medicine has given rise to a very animated discussion, and, as several of the former opponents of M. Trousseau in the debate on vitalism and materialism have again come forward on this occasion, we may expect to see the contest last through several sittings. The subject of the present argumentation is one which it requires all the talent and acuteness of observation peculiar to the promoter of this discussion to invest with a character of novelty. M. Trousseau undertakes to prove by an appeal to clinical evidence that the great majority of those cases usually defined as *cerebral congestion* are, in reality, epileptic in their nature. "It is only within the last fifteen years," observes the learned professor, "that my attention has been directed to the truths which I now advance, and that facts which have occurred in my private and public practice have led me to modify opinions which I originally held in common with the rest of the medical world. Of the class of cases to which I particularly refer, the following is an example:—A man, with or without premonitory symptoms, falls to the ground as if struck by an apoplectic seizure. When raised, he is found to be stunned, and remains insensible during a period of a quarter of an hour, an hour, or more. These first effects subsiding, cloudiness of intellect and difficulty in locomotion persist throughout the rest of the day, to disappear however, completely on the morrow, when the patient is quite restored to his usual health. The malady in such a case is styled *apoplectiform congestion of the brain*. Or, again, an individual whilst walking is seized with vertigo; his vision and speech become affected; he mutters some unintelligible sounds; then totters, and sometimes falls; in either case recovering immediately. Slight headache or trifling obtuseness of intellect may persist for a brief period, and the attack subsides. Such a seizure as the latter is attributed to *slight cerebral congestion*, and the medical man rests perfectly satisfied with the correctness of his diagnosis. Now, not a month passes without my seeing several patients affected with so-called apoplectic tendencies, in which I have clearly recognized the disorder to be of an epileptic character; and although this terrible malady is better known (from being more studied) now than it was thirty years ago, yet practitioners generally continue to

ignore the presence of epilepsy, or even, if they do recognize its existence, leave to the consulting physician the disagreeable duty of breaking the truth to the sufferer or his friends. Nevertheless, the recognition of this obscure form of epileptic seizure is very important. After such attacks of vertigo it is not uncommon to see delirium or some analogous mental condition present itself, and persist for a period varying from minutes to days. The annals of justice, and the police records, are filled with the details of suicides and murderous attempts too often attributed by medical jurists to what they style "cerebral congestion," but which really owe their origin to epilepsy. It may be said, and with a degree of positive certitude, that if a man without any previous intellectual disturbance, without any precursory symptom of mania or insanity, and not under the influence of alcohol or other intoxicating agent, commit causeless suicide or a wanton act of murder, that that man is an epileptic. There is, no doubt, a great difficulty always to be contended against in the ready diagnosis of epilepsy, arising from the repugnance felt by the friends of the patient to admit the existence of this dreadful disorder within their family circle. I have often been consulted by persons who, though perfectly conscious of the nature and name of their malady, were unwilling to acknowledge the presence of the symptoms by which it is characterized, and under which they habitually labored. With regard to cerebral hæmorrhage, there is a phenomenon to which I would draw attention, as often and erroneously attributed to the effects of congestion. When a patient is stricken with apoplexy, whatever its cause, whether it be hæmorrhagic, or from softening of the brain, or from a clot, or proceed from an obliteration of one of the principal arteries of the base of the brain, there is for the most part, at the outset, a sudden loss of consciousness, or at the least, dullness of the intellectual faculties and entire or partial abolition of the locomotive powers—a condition lasting for several hours, or it may be days, and disappearing to give place to hemiplegia in a more or less marked degree. As the first symptoms are of instantaneous production, and as between their gravity and that of the subsequent pathological condition no reasonable proportion exists, the cerebral hæmorrhage is usually considered as having been accompanied by congestion; and it is held that the congestion—a state essentially transitory in its nature—has produced the apoplectic symptoms, and on subsiding has left slight hæmorrhage with consequent hemiplegia. I do not wish entirely to deny the existence of this congestion; but there is another phenomenon which, in my opinion, has not been sufficiently noticed, and that is what I would term the "*étonnement cérébral*" (cerebral astonishment or stunning). A sudden compression of material lesion of the encephalon is supported by this organ with an impatience which varies in intensity in different individuals. A soldier receives a ball in the head; a man in a scuffle a dagger wound, penetrating the skull. Both fall to the ground as if felled by a blow from a club; but presently, in spite of infracranial hæmorrhage, in spite of the inflammatory congestion (both results of the wound), intellect and the various cerebral functions, at first suspended, not unfre-

quently return to afford the inexperienced surgeon a glimmer of hope rarely realized. This sudden stupor, which I have termed *étonnement cérébral*, is a fact of which no one will contest the existence. Experimentation on animals affords results even more positive. If you trepan a dog or a rabbit, and through a slit in the dura mater introduce between the brain and the skull a small bullet, you will first produce phenomena of stupor, which rapidly disappear, to be replaced by a degree of hemiplegia proportionate to the intensity of the compression. In such an experiment the effects cannot be explained by the supposition of a cerebral *commotion*, and can only be attributed to the brain's being to a certain extent *surprised* by an injury, productive of a transient disorder. Am I not, therefore, justified in supposing that when a sudden effusion of blood takes place in the corpus striatum or in the optic thalmus, the stupor immediately produced, and generally attributed to coëxistent congestion, may, in part, at least, be owing to this *étonnement cérébral?* From which it will be seen that, although I do admit in certain cases the existence of congestion and hyperæmia of the brain, yet I do not think it necessary eternally to invoke this particular condition in order to explain the phenomena of apoplexy; and, moreover, I maintain that in the particular class of so-called 'apoplectiform cerebral congestion' the symptoms are essentially of an epileptic origin. If the propositions I have endeavored to establish be correct, the treatment usually employed in such cases, and consisting of revulsives and antiphlogistics, is illogical and improper, and should for the future be especially directed to the counteraction of the real and particular morbid tendency."

M. Bouillaud followed M. Trousseau, and whilst agreeing to the main point with the author of the paper, objected to the use of the terms *impatience* and *astonishment* as applied to the brain. "I am myself *astonished*," said he, "at hearing such epithets applied to an organ which I have incised, cauterized, and maltreated in every possible way, without exciting the slightest evidence of impatience on the part of the owner. I believe the brain to be incapable of either feeling or expressing impatience, and I cannot see the necessity for a new term when the condition referred to is well defined by the word 'commotion.' Moreover, I would refer M. Trousseau to Lallemand's work on Spermatorrhœa, in which he will find a great number of cases similar to those which he has described. For my own part, I am of opinion that the greater proportion of such so-called cerebral congestions occur in connection with anæmia and chloro-anæmia, and that consequently treatment by bleeding here becomes inadmissible."

M. Trousseau: I never meant to say that the brain was *impatient* in the sense of endurance of pain. Everybody knows that it has no such perception for impressions communicated directly to its substance. I cannot accept the word *commotion* as a synonym for *étonnement*—commotion implying a disturbance in the whole of the encephalic organ, and not being applicable to the condition I refer to, in which a circumscribed spot only of the brain is concerned.

M. Piorry expressed his astonishment at the barbarism of the

terms made use of by Professor Trousseau, whom he considered as an opponent of scientific progress, and the more so as he seemed completely to ignore all M. Piorry's works on the subject of cerebral disorders. The real object of medicine should be, not the consideration of symptoms, but of their anatomical causes, without which clinical research degenerated into mere "empiricism and fantasy."

Paris, Feb. 4, 1861.

v. *Progress of Practical Medicine in France.*

We have on several occasions lately referred to the fact that French Doctors are beginning to learn that the administration of stimulants is of use in certain classes of diseases which affect the human body; and that with fear and trembling and astonishment at the results some of our Gallic brethren have been bold enough to administer such remedies even in febrile diseases. We may readily understand that such an antithesis in practice—a direct jump from leeches, bleeding, and cupping, and *eau sucrée*, to rum and brandy—should be a source of bewilderment to the Professional Body of France; for the fact is, notwithstanding railroads and telegraphs, the French Physician, as a rule, is totally ignorant of the practice of the English Physician. In some way or other, however, our stimulating method of treating some diseases has begun to find favor in the eyes of the Frenchman; but, in adopting this treatment, he appears to be perfectly unaware of the fact that it has been for many decades an ordinary mode of practice in this country. He thinks, in fact, that he has made a noble discovery. The enthusiasm with which this discovery has been received is indeed somewhat a surprise to the English Medical man. Dr. Borden, who has pointed out the hygienic and therapeutical effects of wine in anæmia and marsh fevers, has even gone so far as to demand the cultivation of the vine around every farm and every village in Sologne; and, writes his critic, if his hopes be accomplished, misery and fevers will disappear from that country.

Dr. Jules Guyot also has a word on wine, which we recommend to the consideration of our total-abstinence men. Ordinary wine taken regularly with bread and other solid substances at meals is a precious aliment. The wine-growers say that a barrel of wine is worth a sack of wheat; and, in fact, two pounds of bread and two bottles of wine a-day are more nourishing, enabling them to work better than four pounds of bread and two quarts of water. Whether the fact results from an actual assimilation, or merely by nervous excitement, is a matter for the chemists; it is certain that the effect is constant and permanent, and so far from shortening life the wine diet actually prolongs it. Wine, says an old adage, is the milk of old men; and among vintagers, octogenarians, gay and robust, may be seen by hundreds.

Once more let us have M. Borden: Wine is good, *intùs et extrà*, for the health of the lymphatic, and the anæmic, and for those who are exhausted by fatigue or disease, as well as by age. The topical uses of wine have been too much overlooked—its use in injection

and in medicated drinks. The sweetened draught of wine given to the newly-delivered woman, is no barbarous custom; it may anticipate puerperal diseases; a drink of hot wine is often efficacious in curing sudden chills and colds; injections of warm wine were long the only cure of hydrocele; and the best injections in *fluor albus* and some affections of the womb are still made of Roussillon wine. Indeed, the only virtue contained in many of our drugs, resides in the spirituous vehicle which carries them. M. Guyot does not say that this vinous principle can be considered as a panacea for all diseases, but that wine and spirits are aliments, and hygienic, and that they assist in—and even determine—the cure of a large number of diseases he is certain. "I do not hesitate in declaring," he adds, "that they offer greater therapeutical resources than opium, quinine, and all other officinal bodies. They are rapid and powerful in action, and are aliments as well as medicines. A good glass of warm rum will cut short intermittent fever"; and of this the doctor gives illustrations. Who, after this will consent to be bled and purged, and otherwise tortured in his ague-fits? Quinine will cure your ague, it is true, all in good time, but *this* remedy will cut the cold stage short then and there. Follow up the commencing attacks with the hygienic draught, and you will soon tire cold ague out. He will recede before your well-directed and spirited artillery. What says the shade of Broussais to these heretical doctrines?—*Med. Times and Gaz., March*, 1861.

vi.—*Medical Intelligence.* (From the correspondence of the Medical Times and Gazette, of March, 1861.)

MUNICH, Feb. 20, 1861.

The winter here has not been less severe than in nearly every other part of Europe. In the beginning of January the thermometer was as low as 13° F. below zero; but at the commencement of the present month the heartily-desired change in the temperature took place, and the last traces of the enormous masses of snow which had quite blocked up our thoroughfares and nearly buried our houses, have now disappeared. It is a remarkable circumstance, that neither the long-continued rains of last year, nor the late terrible cold, nor the present sudden change to a warmer temperature, have had any unfavorable influence upon the sanitary condition of the town, which has not for many years been so good as during 1860 and the commencement of the present year. The principal forms of disease have been, and still are, catarrhs of the respiratory organs, and rheumatism; and amongst the infantile population whooping-cough and scarlatina, both of extremely mild character. The fact that typhoid fever (typhus abdominalis) has for the last twenty years never entirely left us, and nearly every two or three years has taken the form of an epidemic, has procured for Munich the reputation of having an unwholesome climate; but during the last two years this disease has steadily decreased, and with the exception of a small epidemic, which took place last autumn in the Convent of the Sisters of Mercy, a few cases only have recently been observed. Perhaps I may, in a future letter, give you some curious information about these Sisters

as hospital nurses, for they are, unfortunately, here, as well as in Augsburg and Wurzburg, entrusted with the care of the sick in the hospital wards, and by their arrogant and insolent demeanor, even towards the physicians, have everywhere caused no end of internal dissensions. At present I shall only give you an account of the epidemic just mentioned, which took place in their own convent. From June to the commencement of September last, only two cases of typhoid fever occurred there; but from September 19 to October 4, at a time when the Convent was inhabited by 120 persons, thirty-one persons belonging to the order fell ill in rapid succession, partly with gastric symptoms, partly with real typhoid fever. Fourteen were cases of typhoid fever, of which four died. This sudden and numerous increase of the sick list took medical men so much the more by surprise, as at the time the general sanitary condition of the town was excellent, and typhoid fever extremely rare. It was, therefore, almost certain that this outbreak had its origin in exclusively local conditions, and on a careful examination it was shown that the water used for drinking having been contaminated by putrid matter, was the cause of the epidemic. The local conditions were as follows: The Convent of the Sisters of Mercy adjoins the General Hospital. In the spring of 1860 a well was dug here twenty feet deep. This well is distant only two feet from the wash-house in which the linen of the patients is washed, and it is surrounded by five sewers, which serve to collect the water flowing away from the wash-house. These sewers are connected with each other by means of canals, and the water contained in them gradually leaks into the surrounding earth. This water was muddy, had an offensive smell, and formed a considerable sediment; and as these sewers are only from twenty to thirty feet distant from the well, of course the earth being porous, the liquid contained in the sewers mixed with the water of the well. In order to prove this, the contents of the sewers and the waters of the well were subjected to a careful microscopic examination by our excellent microscopist, Dr. Hessling. He found in the sediment of the liquid contained in the sewers all sorts of substances, both vegetable and animal, in a state of decomposition. Some of them were still distinctly recognizable in their primitive form, but by far the greater part was already detritus. This detritus appeared in flocky, dark-green coagula, and very small lumps, some of which contained inorganic matter, such as sand, grains of lime, etc., which seemed to form their nuclei. The liquid and the detritus both contained a large amount of carbonate of lime; and on adding some sulphuric acid to it, a very strong smell, as of foul eggs, was emitted, even from the small objects selected for microscopical examination; besides which newly formed organic elements, algæ and spores, vibriones, monades and colpodes were observed, which whirled in rapid motion across the field. The water of the well did not form a sediment, excepting a few molecules; if, however, a few drops were examined under the microscope, the same elements were observed as in the water taken from the sewers—*sit venia verbo*—in homœopathic dilution. This was especially the case with the flocky coagula of detritus, the spores and vibriones. It was, therefore, proved that the water of the well

had been contaminated with the contents of the sewers. Professor Pettenkofer, who made a chemical analysis of the water, found a far greater quantity of organic ingredients, of lime and of nitrates in it, than are contained in our usual drinking water. The water of this new well used to be conducted by means of a pump into a reservoir, which was situated under the roof of the wash-house, where it was used for washing. From September 17 to 28, last, when the epidemic began, it was conducted into the bath and the kitchen of the Hospital and the Convent by means of pipes, as, in consequence of the bath-house being in course of repair, there was an insufficient supply of water. Orders were given that it should only be used for the baths, for cleaning and cooking; while the necessary drinking water was furnished by two wells which are situated in the court-yard between the Hospital and the Convent, and which are in a very satisfactory condition. But, although the inmates of the convent had thus been warned, it turned out, on close inquiry, that the water from the contaminated well, which was carried in the evening from the kitchen of the convent into the bed-rooms of the Sisters for washing, had also been used by them for drinking, and every one who had fallen ill acknowledged having drunk of this water. If it is taken into consideration that the beginning of the epidemic was synchronic with the drinking of this water, and that this contained putrid matter from the dirty linen of the patients, the supposition is certainly justified that the poisonous qualities of it were the cause of the typhoid fever, which is further proved by the circumstance, that with the discontinuance of the use of this water the epidemic also ceased.

vii. *Spontaneous Generation.*

The following masterly summary of the present condition of the once ancient and now modern doctrine of spontaneous generation is from the pen of the far-famed naturalist, M. Quatrefages (*Revue des Deux Mondes*). It is worthy of note at this moment, when so many of our modern philosophers are striving to trace the origin of our species down to a simple monad or up to a complicated monkey. M. Quatrefages shows clearly enough, at all events, that the lowest infusorial animalcule did not arise from any "fortunate concourse of atoms" and that, however low in the scale of created beings the living organism may be out of which the complicated and highly developed creature called man has, by a series of developments and of evolutions and involutions, been produced, at all events he did not have a pebble for his first ancestor. This is, at least a consolation.

"The doctrine of spontaneous generation appears to us definitely settled. It is, in fact, difficult to understand how such a doctrine can still have partisans amongst men whose merit is otherwise incontestable. Their number, however, diminishes daily; and most of them, no doubt, repeat the exclamation which we heard from the mouth of a very skillful chemist, who was long a thorough believer in spontaneous generation: 'And so vanishes another, another illusion!' This he said after a long conversation concerning the

unanswerable experiments of M. Pasteur. These experiments refute, in fact, the last delusions, and may be addressed to several other *savans*, and amongst them to MM. Schwann and Henle. These observers had already operated, in a comparative way, on infusions or mixtures, some of which had been exposed to the air, whilst others had only been subjected to air which had been passed through strong acids or tubes heated to a red heat. In the first case, they invariably found that a crop of infusoria was rapidly produced; whilst in the second case no trace of organic production was found. Schwann, Henle, and almost all naturalists, had concluded from these facts that the vegetable and animal bodies which appeared in the infusions were derived from germs in the air, and deposited in the form of dust: and that they did not result from the reaction of the dead elements which enter into the composition of the infusion or the mixture. They had also admitted, as equally true, that in order to prevent the appearance of infusoria, etc., all that was necessary was to disorganize these germs, either by heat or by some other means. The partisans of spontaneous generation replied, that the air in passing through a heated tube, or through acids, although not altered in composition, was thereby rendered unfit for giving birth to an organized being; the air, they said, was thereby rendered inactive. Moreover, they denied the existence of germs, notwithstanding that these had been seen and described, particularly by Ehrenberg. Now, M. Pasteur, by the means of very ingenious experiments, has collected these germs, and has sown them in infusions subjected to that kind of air which was said to be inactive; and they have there perfectly developed themselves. The same observer has also shown that, if the vessel which contained the infusion was of such a form that the germs could not reach the liquid, no trace of growth would be found in it, even when it was in direct communication with the air. The existence of the germs, and the character which they play in the pretended phenomena of spontaneous generation, have been placed beyond all kind of doubt or discussion in the mind of those who derive their convictions solely from observation and experiment. We may add, that the beautiful researches of M. Balbiani, on the sexual reproduction of infusoria, have brought this group under the general law, and have thereby taken away from the partisans of spontaneous generation the last arguments which they might have drawn from the want of information formerly existing on this subject."—*British Medical Journal.*

viii. *The Turkish-Roman Bath: What are its Right Uses?*

The Turkish bath has lately undergone some investigation before a proper tribunal—the Medical Society; and, indeed, it is high time that it excited in the profession the attention it demands as an article of hygiene. The subject was introduced to the Society by Dr. Thudichum, who fully explained, according to his personal experience, the physiological action of the bath upon the body human. His interesting and original observations on this point will be found in the fifth number of the *Journal* for this year. But Dr. Thudichum was not only philosophic in his details; he was also enthusiastic in

his praises of the bath. Dr. Richardson, whose remarks will be found in the same *Journal*, happily took a more moderate view of this calorific instrument. We think his observations ont he subject to be full of reason, good sense, and sound philosophy. It is, indeed, high time that the Turkish bath mania were subjected to some proper control and authoritative criticism. That non-medical enthusiasts and lively speculators should bedaub a good thing with immoderate laudation, is readily comprehensible, and of every day occurrence; but we must express surprise that cool-headed men, such as the members of our profession are supposed to be, should indulge in flights of imagination on the Turkish bath, of the kind we find in pamphlets which have reached us from the east, the west and the antipodes.

The hot-air bath is manifestly, and as we find shown in the experiments of Dr. Thudichum, an agent exerting great influence over the animal economy; and, regarding it as such, it is clear that it cannot be indifferently applicable to the body in health and in disease. This plain fact seems to have been overlooked by its enthusiastic admirers; and Dr. Thudichum and Dr. Richardson have, therefore, done well in reducing the effects of the bath to their simplest terms, by telling us what are the changes caused in the body—the material products—the metamorphoses—resulting from its action. From their experiments, it seems to us to be a necessary consequence that the bath must be injurious to a person in health, in consequence of the unnatural waste of the body thereby excited.

There is a moral aspect, also, from which this new luxury may be viewed; and one not very favorable to its use. The bath may be regarded as an accompaniment to luxurious living. By the aid of this instrument, the *Epicuri de grege porci* may be enabled still to gratify their palates, and whip their palled stomachs into something like a real though temporary gastric movement. And, if we are to regard the bath as a thing necessary to us all, then we must consider that the body, in these days of exalted civilization and high living and mental activity, is never in a state of health; and that there is, as a consequence, a certain amount of improper materials always present in the blood. But what kind of a philosophy is this, which would tell us how to patch up our body, in order to enable it still further to sin against the gastronomic laws? A wise medicine would rather point out the erroneous causes which have brought the body to such a degraded position. In this point of view, the bath must here garded as an agreeable encouragement to the agreeable sensuality coindent with an unnatural indulgence of the gastronomic appetite.

But this surely is not the way to teach us how to reach the natural age assigned to man by nature—the one hundred years predicated by M. Flourens. Our conclusion is, that the bath used, as here described, becomes an instrument of the degradation, mental and physical, of the human species; and that a man in health who fritters away his time, and dissipates his tissues, in the *mollesse* of a Turkish bath, commits something like an act of genteel debauchery. And such, we believe, is the conclusion to which a consideration of the

uses, the abuses, and the results of the bath will inevitably lead the unprejudiced observer. Surely, it can be hardly worth while to praise a process which, as far as man in health is concerned, seems only fitted for the purpos of relieving him, by a pleasant and easy method, from the hypothetical accumulation of *luxus-urea* in the blood—the evil consequences which naturally result from excessive eating and drinking.

But, as a therapeutic agent, the bath is, undoubtedly, worthy of much praise; and certainly, we needed not this Turkish sudatory to tell us of the virtues of hot air, as applied to the external surfaces of the body in disease. We may, nevertheless, gladly avail ourselves of it as an extended and ready means of applying the agent. Gladly would we see the bath taken up by our hospitals; its general adoption in these institutions would not only be highly serviceable to the sick, but would at once put it in its right place as a remedial agent, and be a proclamation to the world of the opinion of our profession regarding its uses and applicability. And we may observe that the members of the Medical Society, who remarked upon Dr. Thudichum's statements, had not so favorable an opinion of the innocuity of the bath as Dr. Thudichum himself seems to hold. What is now wanting is a series of careful observations upon the effects of hot air in the case of individuals suffering from different diseases: and there is abundance of evidence of the value of the bath as a powerful remedial agent, to justify, or rather to oblige, our large medical institutions to make the Turkish bath an important item of their instruments of cure.

As a therapeutic instrument, then, the bath should be regarded. Our physiological and pathological ideas must undergo considerable change before we can be brought to the belief that it is either desirable or necessary for a man in health, who lives a decent life, and performs his ablutions as a Christian should, to undergo the sudatorial and pulmonic purgation of an hebdomadal Turkish bath. The proceeding may be adapted to the mental and physical constitution of those lazy Eastern voluptuaries, who have cost us so much trouble and so many lives, and the well-fed and fatted contents of their harems. The slothful Pasha may work off his superfluous hydrocarbons and nitrogenous materials through the sudoriferous ducts and the pulmonary mucous membrane; but healthy men of business and of sense in this country will, we venture to prophesy, never consent to the dissipation of time and matter involved in the idea of a periodical Turkish bath. At all events, as Doctors of the healing art, it is our duty at this time to step forward and tell the public what this bath really is, in its properties—whether it is a proper article of daily service, like food and drink, whether it is solely a therapeutic agent, or whether it is likely to degenerate into an appendix to civilized sensuality.—*British Med. Jour.*, 1861.

ART. V.—*On some Points of Cerebral Pathology:* By THOMAS INMAN, M. D., Physician to the Liverpool Royal Infirmary, Lecturer on Medicine at the Liverpool Medical School.

THERE are many interesting points connected with the pathology of nervous disease that are as yet imperfectly understood. Among these we may class those cases in which we see a state of apparently profound and hopeless apoplexy give way suddenly to the action of an emetic, or the use of brandy and water. So many instances of this have been given that we are almost induced to compare such condition to that which obtains in sleep, or to that sudden drowsiness which so often characterizes the invasion of water in the head. Of the physical state of the brain under these circumstances we are ignorant. From the similarity between the symptoms of apoplexy and those of compression we are apt to infer a similarity in cause, and to assume the existence of "congestion," but then we see analogous phenomena produced by tying the carotids, or suddenly depriving the brain of blood in any manner; and, when on the other hand, we see a great amount of congestion present, as we do in children, or athletes who often remain for a long period with the head downward, in those who are suffering from regurgitation through the mitral valve, in those who are half-hanged, and in those who are *straining greatly* at stool, without remarking any signs of apoplexy, we are driven to another conclusion.

We are not relieved from our embarrassment even when apoplectic cases terminate fatally; some patients said to die from apoplexy, like the late Professor Daniell, exhibit after death no distinct sign of cerebral disease, others show simply a pale condition of brain and an unusual amount of serum, others show a softened patch here and there, others are marked by effusion of blood, and in children dying in an apoplectiform state, we often find the brain substance simply more watery or œdematous than is natural. I cannot at the moment lay my hands upon a recorded case of fatal apoplexy produced by stomach engorgement, and consequently cannot say in what condition the brain is then found after death. Reason would suggsst that nothing more would be found in such a case than if a man was killed while sleeping after dinner. Mr. M., after a large meal of strawberries and cream, was found apparently dying from an apoplectic stroke. For two days his life was despaired of; at last he vomited the ascescent mass, and was convalescent at once. Could we fairly have anticipated finding anything more in the brain, had he died, than we should see in one who dies during an ordinary snooze?

Our difficulties are not removed when we find that persons often recover from a state of apparently hopeless apoplexy under very opposite plans of treatment. One man is bled from the arm, another is cupped, another has brandy, another croton oil, another an emetic, and another nothing at all, and those who do recover do so in many instances as completely as if they were only returning from profound sleep. These are interesting points and will serve to introduce the next inquiry, viz: what is the physical condition of the brain during the presence of partial hemiplegia, and those other symptoms commonly spoken of as "premonitory signs of apoplexy." We know

that when complete hemiplegia occurs, it generally indicates cerebral softening or hæmorrhage, or both, but that a few cases are met with, in which the palsy is so transient that it is impossible to believe in the existence of either. From none of these can we deduce the possible state of the brain when the palsy is so slight as to be spoken of as a *weakness* only.

The subject is of the utmost importance, for our treatment will necessarily be guided by the way we answer the question.

If, with the majority of the older writers, we see in the earlier signs of apoplexy a proof of too much blood in the brain, too much power in the heart, too much life and vigor in the system, we shall naturally endeavor to ward off the threatened attack by reducing the power of the heart, the volume of the blood in the brain, and the exuberant health of the body. If, on the other hand, we take a different view, our reasoning will run much in the following way: If complete hemiplegia arises from complete cerebral destruction, it is logical to infer that a less amount of paralysis may arise from an incomplete destruction. This involves the farther considerations—what is the nature of the injury when complete? and can the destructive tendency be arrested on the one hand or accelerated on the other?

As it is I believe now generally admitted amongst British physicians that cerebral hæmorrhage and softening are "degenerations," the result of impaired and defective nutrition, I need not stop to point out the connection between those and mortification. If this assumption be correct, it is clear that any constitutional cause which would promote gangrene elsewhere, would equally favor it in the brain; consequently we infer that a plan which gives the weak organ rest, and tends to increase its living energy, will be more likely to restore it to health than any depressing plan whatever.

That the brain may be on the road to mortification, and yet be restored, Kussmaul and Tenner's experiments distinctly prove. In them we see rabbits whose brains have been instantaneously deprived of blood, the subjects of terrific convulsions, yet the creatures are as suddenly restored to comfort by a removal of the arterial ligatures; if the ligature remain in force for five minutes complete recovery is rare; if the stoppage only exist for two or three, little harm results.

Our observations would end here, and humdrum indeed they would then have been if the causes of local mortification were fully known, and we had to think only of loss of blood, change of capillaries, and the like. It so happens, however, that gangrene occurs repeatedly without our being able to assign any valid reason for it. Most of us are familiar with the history of mortification from the use of ergot. Many have doubtless read similar cases where no ergot has been taken. Surgeons occasionally see idiopathic gangrene of the vulva. Hospital gangrene has long been known. Anthrax, blind boil, and carbuncle, are other names for mortification of areolar tissue. Gangrene of the lungs is not a very uncommon disease, and necrosis of bone (essentially the result of osseous gangrene) is frequently idiopathic. In none of these instances can we give a distinct reason

for the occurrence of the local disease. Nor can we approach nearer than to say that it indicates the presence of some cachexia.

It is reasonable to suppose that the brain may be equally liable to idiopathic gangrene as are other structures.

If there be any truth in the idea, we should find the same classes of individuals who are liable to anthrax or carbuncle, are liable also to cerebral attacks. I dare not affirm positively that it is so, but certainly cachexia and cerebral softenings, etc., have very much in common.

The following illustrates our notion: Mr. M., æt. sixty-four, a stout, active, and strictly temperate man, was one evening troubled with sudden loss of memory, and with that grotesque class of metamorphoses so common in dreams, which converts a house into a palace, a child into a giant, a street into an avenue, and a gas-lamp into a fiery furnace. He placed himself under medical care, and was told that he was seriously threatened with apoplexy. He was directed to live low, etc., and did so until a profuse crop of boils appeared about the head and neck. These disappeared after a course of tonics and good living.

The idea thus enunciated receives apparent corroboration from a fact, which I have occasionally noticed, viz: that imperfect attacks of hemiplegia follow in some degree the same laws of symmetry as do other cachectic diseases. Thus I had one patient, æt. twenty-seven, with imperfect palsy on one side, who recovered from that, while taking tonics, etc., but who was affected on the opposite side in an inferior degree shortly after the first got well. When this recovered, the first became again affected, though to a small extent. He ultimately recovered perfectly. I have only recently discharged a patient from the Liverpool Royal Infirmary, in which a similar phenomena has occurred. The man, æt. sixty, had a "weakness" on the left side, which left him under the influence of tonics and a blister. No sooner, however, was the left side strong, than the right became weak, though not so much so as the former had been; no change was made in the treatment, beyond using a blister to the right temple. In seven days both sides were strong. Surely we may infer here, that had the causes of the disease been purely constitutional or general, we should not have disease developing itself in one part, while it was diminishing in another.

Still, as in both cases, the secondary attack was inferior in severity to the first, we may draw the conclusion that a constitutional treatment, such as would be applicable to the "furuncular disease," or carbuncle, is not inappropriate to a threatening of apoplexy or hemiplegia. The subject has still wider relations than those I have thus intimated, and it may be profitable to enter into some of them.

In a late number of the *British and Foreign Medico-Chirurgical Review*, July, 1860, p. 140, a reviewer, taking a very limited view of a question closely akin to the preceding, remarks: "It is fully granted that, in cases of white softening, or supposed white softening, a tonic regimen may be most useful, but to generalize from this, and to suppose that in all cases of brittle cerebral vessels we shall do good by such a proceeding, is surely not very apparent.

Will tonics make an old man's vessels elastic, after they have become brittle from earthy deposit? We trow not. But they may, with wine and full feeding (which, by the way, ought not necessarily to be classed amongst tonics), increase his mass of circulating blood, and incite the heart's action, and so increase the strain upon the vascular walls till rupture takes place." It will be apparent at once, that reasoning like this ignores altogether the parts to be nourished and kept alive. It refers, in the old jargon of the books, to the blood and the vessels through which it flows, but takes no note of the material for which that blood is provided.

The scientific physician must take into account every part of the body, not one alone. The reviewer in question would never argue that the brain of a dead calf could be kept up to its work by injecting through its vessels the blood of a living one; nor if, in the course of the injection, an arterial capillary should give way, would he attribute the hæmorrhage to an increase of the heart's action, or of the circulating fluid. He would rather say, that, with "brain-death came death of the arterial tissues, and that, with diminished equitable support on their outer surfaces, and diminished elasticity and cohesion in their own coats, the vessels would give way sooner than they would have done in health.

The use of tonics in cases of threatened apoplexy is not intended to make brittle vessels elastic or thickened ones thin. The intention is simply to obviate the tendency to death which is apparent in a part of the brain structure, and if in the aged we find that cold, starvation, misery, etc., favor the occurrence of senile gangrene in one part, while generous living, warmth, comfort, and tonics help to ward it off, the vessels in both instances being in the same condition, we are bound to accept the inference that a tendency to senile gangrene in the brain is to be warded off in a similar manner.

Although these remarks chiefly apply to cerebral disease, they may be applied to those diseases of the spinal cord in which we have imperfect or transient paraplegia. Thus, we fairly ask, what was the physical condition of the spinal cord in the following cases: John P., æt. twelve, the soon of poor parents, out of work, was, during intensely cold weather, walking with his father from town to town, in search of work. Many days were thus occupied unsuccessfully, and they returned home, where friends assisted them with food and fire. Two days after their return, and shortly after an ample breakfast, the lad fell suddenly down while walking across the room, and was found to be paralyzed in the lower half of his body. For this he was treated with tonics and local stimulation along the spinal column, in the form of repeated blisters, and in six weeks he was quite well. Had there been complete disorganization of the spinal cord, we cannot imagine that it could have been restored in so short a time, and to say that there must have been simple congestion, is to beg the questions—first, that there is such a thing as congestion of the spine; secondly, that when present it produces paralysis.

Since this case occurred, I have seen others of a similar kind, some in which the paraplegia has been referred to heat, in others to

cold, it has been attributed to cold, and in one it was connected with such an amount of melancholia that there was reason to believe that the brain was affected as well as the cord. Some of these cases have recovered completely, others partially. When we consider the close resemblance between these cases and those of anæsthesia, etc., attributable to excessive seminal discharge, we cannot help considering that they are due to some form of exhaustion, and not to congestion in any form.—*London Med. Review*, March, 1861.

REVIEW.

Review, in which some Neurological Opinions of M. Bernard and others are briefly considered.*

DURING the last decennium, the reputation of Professor Bernard,† as an experimental physiologist of the French school, has been in the ascendant. Several years ago, M. Dubois, the permanent Secretary of the Academy of Medicine, in his eulogium upon the late M. Magendie, characterized M. Bernard as being the most eminent and reliable pupil of Magendie. On the 5th of March, 1861, M. Bernard was, by an almost unanimous vote, elected a member of the Academy, in the section of anatomy and physiology (to fill the vacancy occasioned by the recent death of M. Duméril), having received seventy-two votes out of seventy-nine, the total number cast by the Academy, notwithstanding the high claims of the competing candidates, MM. Béclard, Verneuil, Sappey, and Béraud.

* It was intended to insert into this number of the Journal, a lecture by M. Bernard, on the Spinal Cord—a lecture which originally appeared in the *Medical Times and Gazette*, of Feb. 6, 1861—and also a review of the same, but the remaining space permits neither the one nor the other, except to a limited extent.

† In the 2d vol. of the *New American Cyclopædia*, the following notice of this distinguished Professor appeared in 1858, and is here copied entire: "Claude Bernard, a French physician and physiologist, born at St. Julien, in the Department of Rhone, July 12, 1813. In 1834 he went to Paris, intending to pursue literature as a vocation, but not meeting with success, soon gave up the attempt, and devoted himself to the study of medicine. He has especially distinguished himself by his researches in comparative anatomy and physiology, and has been Professor in the College of France during the last ten years. He has made special studies of the liver and pancreas."

Many pages of this Journal, as its readers know, have been devoted to the reproduction and extension of M. Bernard's able researches. His forte, however, appears to be experimentalism, which is a surer road to demonstration than chopping logic *in æternum*. M. Dubois, in summing up Magendie's character as an experimentalist, quotes and adopts M. Bernard's estimate of it, namely, that Magendie considered experimentation should altogether repel ratiocination: "a l'expérimentation seule qu'il faut s'en tenir, *sans mélange de raisonnement*." Whether M. Bernard has followed his prototype, in this behalf, is questionable, as the sequel may show:

M. Bernard says, in the lecture already referred to, that "When motor nerves have been divided, their excitability diminishes in the first place, but rapidly rises to its former level and goes beyond it. Both sensitive and motor nerves acquire unusual power through this operation: superabundant activity follows the division. The voluntary power of motion having been destroyed by this operation, it seems quite natural to suppose that reflex movements can only be produced by acting upon those parts which lie in communication with the motor nerves, by which the impressions are reflected: that the parts situate above the wound must be excited in order to produce reflex convulsions in the upper extremities, and *vice versâ*: but, strange to say, this is not always the case: when this experiment is tried several hours after the spinal axis has been divided, the exaggeration of sensibility below the injured point is such, that violent convulsions are actually provoked in the lower extremities by acting upon the upper limbs! The frog which was placed before you at the commencement of the lecture, and underwent the operation a few days ago, is a proper subject for the demonstration of this property. [The experiment is performed before the class, and succeeds.] We need hardly state that mammals exhibit these singular phenomena as well as batrachians: but we never meet with similar results when the spinal cord is perfectly sound. According to the notions which prevail upon this subject, the posterior limbs ought not to be set in motion when the parts acted upon do not lie in communication with the corresponding motor nerves; but how, in such cases, is the communication established? Not through the spinal cord, of course: most probably the sympathetic nerve, which remains entire, is the channel through which impressions are then transmitted.

There exist in the records of science certain cases which it would be altogether impossible to explain if this hypothesis were rejected. In Magendie's *Journal de Physiologie* we meet with the history of a patient laboring under a disease of the spinal cord, who was, nevertheless, able to walk, although with great difficulty, a few days before he died. On making the autopsy, the spinal cord was found to be completely disorganized, and in a semi-fluid state, on a definite point; a small tract of medullary substance alone remained to connect its two separate portions, nor could this disorder be traced to the usual effects of decomposition, for the remaining parts of the spinal axis were perfectly sound. All communication would therefore seem to have been intercepted between the upper half of the nervous system and the lower extremities; yet we find that the powers of voluntary motion still existed in the patient shortly before death. How is this apparent contradiction to be accounted for?

The sympathetic nerve obeys the same laws as the cerebro-spinal system, with reference to the augmentation of its powers when it has been divided.—*Medical Times and Gazette*, Feb. 6, 1861.

While it is not intended to examine the validity of these postulates in all their bearings, it is believed that taken in connection with his

views expressed on other occasions concerning several parts and functions of the nervous system, good grounds for dissent exist, and that his ratiocinations stand on a lower level than his skillful experimentation. Nevertheless, his facts are valuable, though his interpretation of them may not be infallible, final.

Without dwelling on special experiments, one cannot help exclaiming ‚how facile! how ductile is that logic which assumes that the anterior and the posterior roots of the spinal nerves have functions essentially different and altogether peculiar, and that when one set is disorganized, divided, or disabled, it falls back upon the other for its lost function, or it borrows from the periphery, or it inaugurates itself in what the orthodox teachers announce as a distinct, separate, and independent system, namely, the sympathetic. Thus the motor root borrows sensation from the sensory root—a loan which is called recurrent sensibility. Reflex action, recurrent action, peripheral action, crossed action, increased action from the division of the nerves, electrical action, and the like, afford quite a puzzling variety of resources in dialectics, and specious, if not valid excuses for the dismembering of the unity of the nervous system. Hence, the poly-neurologists recognize many nervous systems, as the cerebral, cerebro-spinal, the true spinal, sensori-volitional, excito-motory, the secretory, excito-secretory, sympathetic, together with other divisions, the names of which no lexicon extant can furnish—the import of which, as Hamlet would say, "must give us pause."

If the irritation of the so-called motiferous root of a spinal nerve be attended with violent convulsive motion, the latter, contrary to all analogy, all evidence which a dumb animal can give, is assumed to be destitute of sensation, as if sensation and convulsive movements were mutually exclusive of, and antagonistic to, one another, instead of being almost always conjoined, and as nearly identical, as any two separate systems, such as the muscular and nervous can be, although the sensiferous modifications, both normal and morbid in the latter, are varied to an almost infinite extent. Many of the final causes or ends of the animal economy are impossible without the combined action of both. In physiology as in physics, an apparently simple effect is often the result, not of one, but several antecedents or causes, any one of which being absent the effect fails

altogether. While the living syntheses and unities of the economy and the disorganizing analyses of art mutually illustrate each other, they necessarily present antitheses also.

In regard to diseases which theoretical pathologists assume to be purely motory, as tetanus, hydrophobia, wry-neck, tenesmus, stranguary, abortion, puerperal convulsion, cramp, and the like, the sentient system suffers acutely in most cases, as every clinical physician knows.

According to M. Bernard, if the spinal column be demolished, abolished, "completely disorganized and in a semi-fluid state, all communication being intercepted between the upper half of the nervous system and the lower extremities, yet we find that the powers of voluntary motion still exist. "How," asks M. Bernard, "is this apparent (!) contradiction to be accounted for?" He answers his own question in the next sentence, thus: "The sympathetic nerve obeys the same laws as the cerebro-spinal system, with reference to the augmentation of its powers when it has been divided."

The elementary treatises* on Physiology teach, whether correctly or otherwise, that the sympathetic nerve has neither sensory nor motory functions, being fundamentally different from the cerebro-spinal system.

M. Bernard is very latitudinarian, if not consistent, in assigning special and different functions to particular parts of the nervous system with mathematical exactitude, seeing that he changes the programme, substituting one root for the other, the sympathetic for the cerebro-spinal, making the sensory half of the nervous system send from the periphery, sensiferous nerves to the motory half, when the latter is destroyed. He appears to not only accept, but to extend indefinitely Magendie's abandoned doctrine of recurrent sensibility.

In regard to recurrent sensibility, M. Dubois, perpetual Secretary to the Academy, says, in his eulogium upon the late M. Magendie,

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* "There does not seem to be any decisive proof that any of the fibres of the sympathetic, properly speaking, are motor or sensory. The sympathetic transmits sensations so tardily that it has been supposed that one office of its ganglia is for the purpose of cutting off such impressions." (Draper.) "No experimental evidence has yet been obtained, that the proper fibres of the sympathetic system have any power of exciting contraction," etc. (Carpenter.) The ganglions of the sympathetic, according to Bichât, are so many distinct, separate, and independent centres, independent of each other, independent of, and different from the cerebro-spinal system of nerves, "not serving for sensation, having uniformly no connection with voluntary locomotion."

that, "As to this species of sensibility, designated under the name of *recurrent sensibility*, which had been thought to exist in the anterior roots, and the discovery of which had been accredited to M. Magendie, it is no more at the present day to be spoken of; researches since made, and conducted with great care, have proven that, in relation to this, there has been a sanction given to an indisputable illusion."*

Magendie, in his Journal of Physiology for October, 1822, says that he excited contractions in both sets of spinal roots: "J'ai obtenu des contractions avec les deux sortes de racines;" and he affirms "that sensation does not belong exclusively to the posterior roots, any more than motion to the anterior." In 1839, he communicated to the Academy of Sciences his matured and final results, which he sums up as follows: "Les nerfs sensitifs et les moteurs rachidiens sont également sensibles quand ils sont les uns et les autres intact. Si l'on coupe les nerfs sensitifs, les nerfs moteurs perdent immediatement leur sensibilité."—(*Comple Rendu des Séances de l'Acad. des Sciences*, May 20, 1839.)

In June of the same year, he announced to the Academy, that the anterior roots acquire sensory function from the posterior and from the periphery, which he called recurrent sensibility—a doubtful hypothesis, which, it is said, he subsequently abandoned. The facts upon which this theory is founded are susceptible of a less improbable explanation, which, however, is foreign to the purpose of this sketch.

In June, 1847, in the Academy of Sciences, M. Magendie's claim to priority in these so-called discoveries was strongly reäffirmed, while Charles Bell's pretensions were repudiated as "bien obscure, bien embryonnaire."

Ten years afterward, M. Dubois, in his "*éloge de M. Magendie*," sums up at length the parts which the latter and Bell took in these researches, awarding to Magendie the credit of the discovery: "Ainsi ce que l'un avait découvert, l'autre l'a démonstré; ce que l'un avait annoncé, l'autre l'a vérifié; ce que l'un avait vu avec les yeux de l'esprit, l'autre l'a vu avec les yeux du corps." B. DOWLER.

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* Quand à ce genre particulier de sensibilité désignée sous le nom de *sensibilité recurrente*, qu'on avait cru reconnaître dans les racines antérieures, et dont on avait voulu attribuer la découverte à M Magendie il n'y a plus aujourd'hui à en parler; des recherches faites depuis, et avec beaucoup de soin, ont, prouvé qu'on s'était laissé aller, sous rapport, à véritable illusion.—*Eloge de M. Magendie.*

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