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"Je prends le bien ou je le trouve."

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Lectures on Tumors and Outgrowths of the Cervix Uteri. By Joseph A. Eve, M. D., Professor of Obstetrics and Diseases of Women and Children in the Medical College of Georgia.

Lecture Second—Treatment of Fibrous Polypi.

The only appropriate treatment for fibrous polypi is by excision or ligation, although, when they have very small pedicles, they may be twisted off or torn away and are sometime detached, by traction intended to bring them in proper position for excision, by the bistoury, scissors, polyptome, or eraseur.

Some authors and practitioners prefer the ligature from a belief that it is safer. The correctness of this opinion is, we believe, by no means established. The only danger to be apprehended from excision is hemorrhage, which, it is admitted, very rarely occurs, and then is easily arrested by astringent injections, such as a strong solution of sulphate of zinc, or of copper, or the persulphate of iron, or most certainly by the tampon or colpeurytner.

In two hundred cases of polypi, removed by excision,Dupuytren had hemorrhage only in two, and in these, it was promptly arrested by proper means. Lisfranc had
hemorrhage to occur only twice in one hundred and sixty-five cases, in which excision was performed. In both of these it was stopped by the tampon. I have never known hemorrhage after excision. The only instance in which I have witnessed hemorrhage, was one in which a very large polypus was detached by traction, without excision or ligature. It ceased immediately on application of a tampon.

You thus perceive, the danger of hemorrhage is imaginary. The advocates of the ligature assert that the polypus is more effectually destroyed by ligation. This we consider a mere assertion unsupported by facts. It is as effectually destroyed by one method as the other, for the remnant of the pedicle always shrinks away or sloughs off. By excision, the polypus is removed at once, and the tedious uncertain process of sloughing avoided. There is no danger of local inflammation, constitutional irritation, or pyemia from the absorption of pus or putrification into the blood. I have no hesitation myself in giving a decided preference to excision over ligation, and this decision is supported by a large majority of the most eminent authors who have written on these subjects. When the stem is very large, or when an artery can be felt pulsating in it, prudence might dictate the application of a ligature previous to excision, which should be performed below it, the ligature being allowed to remain a day or two as a security against hemorrhage. But this precaution would, I think, rarely if ever be necessary. In such cases the cecraseur might be the most eligible instrument.

Dr. Churchill says "there are other cases in which excision would be impossible or hazzardous, as for instance when the polypus has only just descended through the o
eruteri. If doubtful, the ligature should be used." In these very cases I consider excision most decidedly preferable, as being more easily accomplished and much safer. But the difficulty of applying the ligature is not so great as the danger to be apprehended from allowing a metallic instrument to remain in contact with the internal surface of the uterus.
liable to irritate or pierce through its walls, and form a putrid mass contained within it for several days.

No antiseptic vaginal or uterine injections could be relied on to prevent absorption from the sloughing tumor.

It sometimes becomes necessary to tighten the ligature repeatedly, or to apply a second ligature. The time necessary for separation by ligature is indefinite. Days are always required and sometimes weeks; during all of which time the patient is confined to bed, kept in a state of anxiety, and liable to fever or phlebitis from the absorption of putrid matter.

If the polypus could not be drawn down low enough for the pedicle to be divided, by a suitable pair of curved scissors or the polyptome, I would infinitely prefer a method proposed by Prof. Sympson, which is to crush the polypus, and thus destroy it, by a properly constructed pair of forceps, or to divide and bring it away piecemeal.

When a polypus is discovered, during pregnancy, or during or soon after parturition, some authors advise to defer its removal, unless delivery be obstructed by it, as the uterus is more disposed to hemorrhage under such circumstances, in consequence of its vascular system being so much more developed. But as a polypus is itself a great determining cause of hemorrhage, it would, I think, be the much safer practice to remove it, if practicable.

Dr. West says: "the general rule, and one, concerning the wisdom of which there can be no doubt, is not to meddle with a uterine polypus, either in labor or after delivery." It is always with regret and deference I differ from authority I respect so highly. I would not willingly mislead you: I give you my opinion with diffidence; I may be wrong; I have had very little experience with polypi during pregnancy or parturition. Dr. West's experience has doubtless been much more extensive, and his judgment is reliable. Numerous and various instruments and methods have been devised for applying ligatures to polypi and polyloid tumors —time would fail were I to attempt a description of one-half of them.
The double Canula, invented by Dr. Gooch—the instrument I now exhibit to you is, perhaps, equal, if not superior, to any other. Various changes have been suggested; but it is doubtful whether it has been improved. There may be an advantage in some cases to have the extremities curved. The instrument and its use cannot be better described than in Dr. Gooch's own words: "The instrument which I use for this purpose consists of two silver tubes, each eight inches long, perfectly straight, separate from one another, and open at both ends. A long ligature, consisting of a strong whip cord, is to be passed up one tube and down the other, and the two ends of the ligature hang out at the lower ends; the tubes are now to be placed side by side, and, guided by the finger, are to be passed up the vagi along the polypus, till their upper ends reach that part of the stalk around which the ligature is to be applied; and now the other is to be passed quite around the polypus, till it arrives again at its fellow-tube and touches it. It is obvious that a loop of the ligature will thus encircle the stalk. The two tubes are now to be joined, so as to make them form one instrument; for this purpose two rings joined to their edges, and just large enough to slip over the tubes, are to be passed up till they reach the upper ends of the tubes immovably. Two similar rings, connected with the upper by a long rod, are slipped over the lower ends of the tubes, so as to bind them in a like manner; thus the tubes, which at the beginning of the operation were separate, are now fixed together as one instrument. By drawing the ends of the ligatures out at the lower external ends of the tubes and then twisting and tying them on a part of the instrument which projects from the lower rings, the loop round the stalk is thereby tightened, and, like a silk thread round a wart, causes it to die and fall off."

Dr. Churchill says: "In many cases I found great advantage from the cautious use of Musaux's forceps. continued gentle traction, it is quite possible to draw v
polypus within view; often to produce it externally, so as to apply the ligature without any difficulty, after which the forceps should be removed, and the polypus permitted to return into the pelvis. It may doubtless, by gentle tractions, in most cases, be drawn through the vulva; but I cannot agree with Dr. Churchill that it should be permitted to return; when once it makes its appearance externally, it never returns with my consent; it is too late then to think of ligatures; it should be removed at once by the bistoury, scissors or polyptome.

I have sometimes applied a ligature as a means by which to draw down the polypus for the purpose of excision; but this could rarely be necessary, if supplied with suitable forceps, unless the polypus were too soft to afford a sufficiently firm hold to the forceps.

I was formerly much inclined to the application of a ligature before excision as a means of traction, from a belief that the hemorrhage was from the surface of the polypus; but I now believe that is certainly not the principal source.

The removal of a polypus by excision is generally easily effected. The patient may lie on her back or side, with her knees drawn up; the operator should then insert one or two fingers, high up on the polypus—if practicable on the pedicle—as directors for the forceps, which should be introduced, one blade at a time, as obstetric forceps, and then united at the lock, after their extremities are firmly fixed on the polypus; gentle traction should then be made until the polypus, if practicable, is brought out of the pelvis, when it should be cut off; as near the os tincæ as possible. Some, I am aware, advise to divide it far from the os tincæ; but I cannot perceive that there can be any advantage in this course as respects excision; it may be proper sometimes, even necessary in applying a ligature, as the pedicle is in some cases sensitive near the uterus, in consequence of an extension of the uterine tissue. There is so much pain sometimes that it becomes necessary to remove the ligature; but excision of the sensitive portion could be attended with
no bad effect, beyond a slight momentary pain. The patient’s suffering may be partially or entirely relieved, if necessary, by chloroform. When the pedicle cannot be drawn beyond the vulva, it may be divided in the vagina by a pair of curved, blunt-pointed scissors, or by the polyp-tome. The pedicle may sometimes be divided by the polyp-tome without traction, and afterwards removed by the forceps or the fingers. The polyp-tome resembles a small, blunt hook with the inner or concave edge sharp. It is a very convenient and valuable instrument which I have found very satisfactory in practice.

One pair of forceps or hooks may sometimes prove not sufficient for drawing the polypus down, and two or three pairs may be required. It may even occasionally be necessary to have recourse to obstetric forceps to deliver a large polypus from the vagina. I employed obstetric forceps in one case, but I believe serrated polypus forceps and hooks would always answer a better purpose.

It is advised to plug the vagina in every case after excision; but in a large majority of cases it is certainly unnecessary; it is time enough when a disposition to hemorrhage is evinced. Although not so essentially necessary, as after ligature, it is advisable that the patient should remain in bed a few days, and not be neglected by her medical attendant, that hemorrhage or any other unpleasant symptom, may be detected in its incipiency and promptly treated.

A Large Internal Polyus Mistaken for an Ovarian Tumor.

The 15th of August, 1846, Mary, a negress about thirty-five years of age, the property of Mr. Wm. Jones of Columbia county, was sent to this city for treatment, on account of a large tumor which had existed, a considerable time, in her right side. On examination I supposed it to be an ovarian tumor. Although she had not borne a child, during the last seventeen years, notwithstanding she had enjoyed comparatively good health most of that time, to my great surprise I discovered that she was pregnant. As it
was apprehended that she might have a difficult, if not a dan-
gerous delivery, she was allowed to remain in this city until after her confinement. After a protracted and difficult labor, she gave birth, on the 19th, Jan., 1847, to a large healthy female child. She had a favorable convalescence and was able in a month or six weeks to return to Columbia county, the hard tumor still in her right side uninfluenced by treat-

ment.

About August, 1851, four years and a half after this la-
bor, my friend, Dr. John T. Smith, of Columbia county, attended her in another accouchment, in which she was soon delivered of a fine girl; but in this case the placenta was retained so long, and its delivery attended with so much difficulty, that Dr. Smith sent to Augusta for a con-
sultation. Dr. H. F. Campbell delivered the after-birth after a retention of twenty-four hours. It was detached and extruded from the uterus into the vagina, so that Dr. Campbell had not an opportunity to introduce his hand into the uterus, where he would probably have discovered the true nature of the case.

At my request, Dr. Smith very kindly furnished the fol-
lowing succinct history of this patient subsequent to the placental delivery by Dr. Campbell: "Her recovery was rapid. About six months after delivery, I was called to see Mary; found her suffering with prolapsus uteri; replaced the womb, and after removing inflammation, used a glass globe pessary to keep it up. At her monthly periods, she suffered with menorrhagia and in the intervals with leucor-
rhea; I was called to see her on the night of January 24th, 1853; found her laboring under considerable mental ex-

citement suffering some pain; on examination discovered a large tumor protruding through the vulva; being at night I could not inspect it satisfactorily; directed cold astringent applications, and an opiate for the night; called early next morning; the opiate produced a pretty good night's rest. On examining it carefully I found, instead of an inverted uterus, a large polypus. After you removed the tumor she
complained only from a little soreness; the stalk soon sloughed off, and she has been perfectly well ever since, a period now of several years."

On the night of the 25th January, 1853, I saw this patient with Dr. Smith and Dr. Thomas. The patient was suffering very much; her pulse very feeble and frequent. There was a large tumor protruding five or six inches beyond the vulva. It was perfectly insensible when touched or pricked with a pin; but when moved, it caused severe pain at the connection with the uterus. Having put the patient under the influence of chloroform, we made gentle traction on the tumor, until we brought the os tincae in view, after which we divided the pedicle very near to it. This tumor was pyriform; about six inches long and about four in width. It was redder and softer than most of the fibrous polypi I have seen, not much firmer than muscular tissue. From the length of time it had been retained in the uterus, I would have supposed it to have been a fibrous tumor that had been slowly enucleated from the parietes of the uterus into its cavity, thence expelled into the vagina, and finally from the vagina through the vulva; but its pyriform shape and thick pedicle clearly identify it as an original polypus. Had it been primarily a fibrous tumor, embedded in the walls of the uterus, it would most probably have assumed a move globular shape, and certainly would have had no fibrous pedicle connecting it to the uterus, its only connection with the uterus could have been by mucous membrane with the addition perhaps of some cellular tissue. From the large size this tumor had attained, at the time of her pregnancy, in 1846, it must have existed some years before, during all which time, during the interval between her two gestations, and during the time Dr. Smith treated her for inflammation of the womb and prolapsus, it must have been internal. It is impossible to determine precisely at what time it was expelled from the uterus into the vagina; but from all I have been able to ascertain of the history of the case, she was certainly not subject to hemorrhages, at least
the greater part of the time that the polypus was unquestionably internal; whereas she was subject to menorrhagia, when it is fair to conclude the polypus must have been in the vagina.

It is a very singular fact that, although living with the same husband, she was sixteen or seventeen years sterile, had two children while the polypus was in the womb, and has had none since, notwithstanding she has enjoyed good health.

It is to be regretted that we have not a more particular history of this most remarkable case; but Dr. Smith's notes were unfortunately lost, and the account furnished was principally from memory.

The next case I will describe was a large enucleated fibrous tumor. The subject of this tumor was a lady of first respectability, about forty-three years of age. She had been in bad health for twenty years. During several years previous to the time I saw her, she had been reduced by hemorrhage to the last extremity. This patient was brought to me in May, 1853, by my friend, Dr. Pinkerton, of Hancock county. She was at that time very feeble and anemic from frequent hemorrhages. On examination I found an insensible tumor, filling the whole pelvis, as large as the fetal head at terms; the pedicle could not be reached; ligation appeared to be impracticable, if deemed expedient. Dr. Pinkerton and myself requested the counsel and assistance of our friends, Drs. L. D. Ford and R. Campbell. In consultation it was determined to deliver the tumor by a delicate pair of obstetric forceps and divide the pedicle. With difficulty we introduced the forceps and produced the tumor partially through the external parts, at which juncture the forceps losing its hold, we seized the tumor with two crotchets and brought it through the vulva. To our surprise it came away detached, no vestige of a pedicle remaining; the only sign of attachment to the uterus was indicated by a small portion being denuded of mucous membrane.

During the passage of this tumor through the external parts
there was a slight laceration of the perineum which I think was attributable to the slipping of the forceps; with the instruments now presented to you (a strong pair of plain polypus forceps, and another pair with strong hooks, both separable from each other like obstetric forceps) this accident might possibly have been avoided; but it was most probably inevitable under the circumstances, as the tumor was very large and hard, and the patient had never borne a child. It was, however, not extensive and the patient recovered from it without any unpleasant consequence.

This was the only case in which I have known removal of a polypus followed by any material hemorrhage; and this was only alarming on account of the very feeble and anemic state of the patient; it was promptly arrested by a sponge tampon.

This patient convalesced rapidly and was soon restored to good health.

[Other cases related in the lecture are here omitted.]

ARTICLE IX.

A Clinical Lecture upon Rheumatism, delivered at the City Hospital. By L. A. Dugas, M.D., &c.

Gentlemen:—As we have here several cases of Rheumatism to which I desire especially to direct your attention hereafter, I beg leave to read to you the following paper which I published in one of the early numbers of the Medical Journal of this city, and which contains a brief history of some of the views I have long entertained upon the subject. I will then add some of the results of subsequent experience:

Rheumatism is a disease of which we find no satisfactory account prior to the sixteenth century, towards the close of which the attention of the Profession was called to it by the justly celebrated Ballonius, under the singular appellation it still retains. Subsequently, the able pen of Sydenham delineated its characteristics in bold relief, and made it a prominent feature in Nosology.
The term Rheumatism, according to Villeneuve, (Dict. des Sciences Med. tom. 48) is now applied to "a disease classed amongst the Phlegmasia, located in the muscular and fibrous tissues of animal life, and attended with the following symptoms: pain; more or less intense, either continued or intermitting, fixed or wandering, and with or without heat, tumefaction, redness, and pyrexia. It usually terminates by resolution, sometimes suddenly, followed or not by metastasis, rarely by suppuration, and still more seldom by gangrene. Lastly its course is extremely irregular, and its recurrence very frequent."

Scudamore defines rheumatism to be: "Pain of a peculiar kind, usually attended with inflammatory action, affecting the white fibrous textures belonging to joints, such as tendons, aponeuroses, and ligaments, the synovial membranes of the bursa and tendons; and nerves; occasioned by the influence of variable temperature, or by direct cold, or by moisture." It is called either acute or chronic, according to the intensity and combination of the above symptoms. The causes of this disease are extremely obscure, although they have, by universal consent, been referred principally to atmospheric vicissitudes. Exposure to a cold and humid air is peculiarly favorable to its development. Whether the low temperature and hygroscopic condition of the atmosphere, alone concur in such cases to give rise to rheumatism, is extremely questionable. I believe it by no means improbable that the electric state of this medium is highly influential in the production of rheumatic pain, as well as of many other phenomena connected with nervous affections. It is not my design on the present occasion to inflict on the reader even a recapitulation of the numerous predisposing and proximate causes assigned to this disease. The profession is happily becoming satiated with speculations on causes which must ever escape our present means of investigation; and we are now disposed to cultivate a more fruitful field—that of effects. Let us, therefore, hasten to the nature or pathology of rheumatism.
We have already said that it is now generally regarded as an inflammation of the muscular and fibrous tissues. This is, indeed, the doctrine which has prevailed, more or less, from the earliest notice of this disease. It is true that many have considered this inflammation as of a peculiar kind. Sarcone and other believers in the agency of animal-cule, &c., in the causation of disease, explained this peculiarity by referring it to the action of those diminutive beings on the white humors of joints, &c. Quarin viewed it as a constriction of the vessels, from cold. Boerhaave called it an inflammation not sufficient to cause suppuration. Cullen admits the inflammation, but adds that the muscular fibres are in a state of rigidity, which impedes and renders painful any movement. "It is," according to this distinguished pathologist, "an affection of these fibres which gives an opportunity to the propagation of pains from one joint to another, along the course of the muscles; and which pains are more severely felt in the extremities of the muscles terminating in joints, because, beyond these, the oscillations are not propagated." (Cullen's 1st lines.)

Bichat and Scudamore insist that it is a peculiar inflammation, but do not attempt to define its nature. Villeneuve states that "several authors, without determining whether the proximate cause of rheumatism be spasm, irritation, or debility, affirmed in general terms, some that rheumatism was a peculiar affection of the nerves, others that it was a lesion of sensibility, and a third class that it was a special modification of the vital powers." (loc. cit. p. 462.) Villeneuve admits that the nerves of animal life may be the seat and even the primary seat of rheumatism, but does not think those of organic life ever invaded by it. Scudamore, in his definition of rheumatism, enumerates very specially the nerves among the tissues affected by this peculiar inflammation. Sciatica is accordingly considered by him a rheumatic affection of the nervous trunk itself; whether of the nervous matter or of the neurilemma, he does not determine.
It is evident that all the writers above cited looked upon rheumatism as located alone at the seat of pain. Of late years, however, attention has been called to a peculiar condition of the spinal marrow as intimately connected with lesions of sensibility, as well as with many of those affections classed among the Neuroses.

It appears that as far back as 1821, Mr. Player, in a letter to the editor of the Quarterly Journal of Science, stated that "the occurrence of pain in distant parts (from the spine) forcibly attracted my attention, and induced frequent examination of the spinal column; and after some years' attention, I considered myself enabled to state, that in a great number of diseases, morbid symptoms may be discovered about the origins of the nerves which proceed to the affected parts, or to those spinal branches which unite them; and that if the spine be examined, more or less pain will commonly be felt by the patient on the application of pressure about or between those vertebrae from which such nerves emerge."

In May, 1828, Dr. Thomas Brown published in the Glasgow Medical Journal a very interesting article "on Irritation of the spinal nerves," the substance of which he asserts he read before the Medical Society of that city in 1823. In this paper he refers the morbid phenomena of the spinal nerves to a state of increased irritability of their origin, which he terms "spinal irritation." This affection of the spinal marrow is attended with more or less pain on pressure of the vertebrae at the diseased point. Some of his cases were evidently rheumatic, and indeed had been treated as such by the previous attendant. His treatment consisted principally of applications to the spine.

Dr. Darwall, early in 1829, inserted in the Midland Medical and Surgical Reporter, his "Observations on some forms of Spinal and Cerebral Irritation." He would establish the principle "that disorders attacking the origins of nerves, or their attachment to the central mass, whether
this be the brain or spinal chord, always disturb the functions of the organs to which such nerves are destined."

"A treatise on neuralgic diseases, dependent upon irritation of the spinal marrow and ganglia of the sympathetic nerve," by Thomas Pridgin Teale, was issued from the London press in 1829. This invaluable publication has opened to our researches one of the most fertile fields ever explored by the profession; one from which have already been elicited some of the most important truths in the domain of pathology. The observations of Teale not only confirm the views of those who wrote before him on Spinal Irritation, but are also extended to lesions of the sympathetic ganglia. I would, however, at present, refer only to that portion of his work which relates to our subject. It contains a number of cases illustrative of his doctrines, some of which, like those reported by Brown, had been considered as rheumatic by other physicians, and indeed presented symptoms such as are usually said to characterize some forms of this disease. It is not a little remarkable that with such facts before them, neither Brown nor Teale should have thought of treating the more acute forms of rheumatism in the same manner. They make no reference to it, and the merit of introducing a new and rational mode of treatment of rheumatism, was reserved for our countryman Dr. J. K. Mitchell, of Philadelphia, who, in May, 1831, published in the American Journal of Medical Sciences, his first article on the subject. In addition to the eight cases then reported, Dr. M. inserted five and thirty more in the same Journal, August, 1833; all of which concur in confirming the spinal origin of rheumatism, whether acute or chronic.

I must confess that neither of the transatlantic publications to which I have referred, had led me to reflect on the nature of rheumatism; nor was my attention drawn to it until the appearance of Dr. Mitchell's first paper. On reading this, however, and comparing his doctrine with the prevailing theories of the Pathology of this malady, I became
at once convinced that it was impossible to reconcile the various symptoms of this disease, on any other principle than that of spinal irritation, and that with this view of the subject, the treatment would be perfectly simple and efficacious.

From the definitions usually given of rheumatism, the pain is manifestly considered as dependent on the inflammation of the parts in which it is seated. That simple inflammation of the muscular or fibrous tissues should be the sole cause of the pain, I cannot admit. It is true that the patient's sufferings are generally proportioned to the degree of the apparent inflammation, and consequently that acute is more distressing than chronic rheumatism. But, I would ask, why are not other inflammatory affections of the same tissues equally painful? It is impossible not to perceive, on a close examination of the phenomena of rheumatic inflammation, that they present several peculiarities, which evidently distinguish it from ordinary inflammations; and indeed they are so strong as to have led some eminent pathologists to deny that they constituted a whole, entitled to the denomination of inflammation. Inflammation is usually said to be characterized by redness, heat, tumefaction, and pain, all of which we find united in the most violent forms of rheumatism. But there are sequelae or terminations enumerated as belonging to inflammation, which never follow rheumatism. Inflammation terminates by resolution, suppuration, or mortification. Its rise, progress, and termination, are more or less gradual; subject to certain laws, and it is in most cases susceptible of removal by antiphlogistics. Rheumatism obeys no such laws of development, progress and declension; but, not unfrequently manifests itself and disappears with a degree of suddenness utterly at variance with the course of ordinary inflammations. Its mode of termination is invariably the same (by resolution) never proceeding to suppuration, nor to mortification; and finally, it rarely, if ever yields to the antiphlogistic
treatment directed to the seat of pain.* The theory of spinal irritation is that alone by which all these peculiarities can be explained. If the point from which a given nerve arises be diseased, the functions of this nerve must necessarily be vitiated; and if its functions be vitiated, the condition of those parts to which said nerve is distributed must also be morbid. In the case of rheumatism, the morbid condition of the parts deriving nerves from a diseased portion of the spinal chord, consists of inflammation of a peculiar character, increased sensibility of the nervous extremities, amounting usually to pain more or less acute, and, in many instances, diminished motility. All admit lesions of motility to depend on an affection of the motor system of nerves, and, inasmuch as the motor cannot be separated or distinguished from the sensitive fibres after their union in a common nerve, such lesions are referred to the spinal chord. Why, then, should we not also regard all lesions of sensibility not the result of local injury,† as attributable to a morbid state of that chord which presides over this function?

Again, we see that not only the onset of rheumatic inflammation, but also its termination or cessation, is in many instances extremely sudden, and indeed that sudden metastasis is by no means unfrequent. These circumstances are most satisfactorily accounted for by the fact that nerves arising very near each other may be distributed to parts very remote. For instance, the nerves of the right hand, though very distant at their termination from those of the left, are nevertheless very near them at their origin in the

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*I am aware that there are cases on record, of suppuration and even of mortification having occurred in parts affected with rheumatism, but they are so few that we may be permitted to doubt their authenticity, or rather to look upon them as mere coincidences, dependent on complications or peculiarities of habit. The success of the antiphlogistic treatment directed to the seat of pain, is equally doubtful, especially when we bear in mind the strong tendency of rheumatism to translation or sudden cessation without appreciable cause.

†Gout, rheumatism and neuralgia.
Rheumatism.

1861.

medulla spinalis; and hence a slight affection of the medulla might for a time exist in one column, and subsequently extend or remove to that adjoining it; thus producing at first a derangement of function on one side of the body, and then on the other. My opportunities have not as yet been sufficient to enable me assert, from observation, that metastases of rheumatism are limited to the periphery of nerves arising in the proximity of each other. This, however, I am strongly inclined to think, will most frequently be found to be the case. Whenever an upper and a lower extremity are simultaneously affected, they most frequently belong to the same side of the body. It will probably also be observed that the justly dreaded translation of rheumatism to the heart, is a much more common sequel of an affection of the upper than of the inferior extremities.

The difficulty attending post mortem examinations of the medulla spinalis, has very much retarded our knowledge of the pathological anatomy of this organ. Its condition in fatal cases of rheumatism has never been systematically investigated. We find, however, on record, a few cases which I think calculated to throw much light on our subject. One of these is reported in Johnson’s Medico-Chirurgical Review, (Oct., 1827, p. 464) under the title of “Inflammation of the Spinal Marrow.” A youth, some time after bathing in the Seine, experienced wandering pains, which subsequently extended to the whole surface of the body, and became so intense that the least touch would occasion loud cries. The pains continued unabated, delirium and diarrhoea ensued, and he died on the ninth day. On opening the spine, the medulla was, from the 7th cervical to the 8th dorsal vertebrae, evidently softened and infiltrated with pus. In the same periodical (Jan., 1828, p. 184) is contained another case, in which the patient had suffered severely from rheumatic pains in the upper part of the back, shoulders, and arms, and finally became paralyzed in his arms. Dissection evinced that from the 5th cervical to the 11th dorsal vertebrae, the membranes of the spinal canal were in
flamed, thickened, and covered with a bloody effusion. The
marrow itself, for the same space, was similarly inflamed
and softened.

Dr. Mitchell gives the history of two cases of spinal dis-
ease, as corroborative of his views of rheumatism. The
first* was one of caries of the lumbar vertebrae, in which
one ankle, and the knee of the opposite side were tumefied,
red, hot, and painful, afforded a fair specimen of acute rheu-
matism. Relief promptly followed leeching and a blister
to the affected spine, although the ordinary treatment for
rheumatism had been previously resorted to without effect.
The second case was that of a physician who, after receiv-
ing an injury of the cervical vertebrae, experienced an at-
tack of acute rheumatism of the hands and wrists, which
"was always relieved by remedies applied to the affected
part of the spine, and aggravated by pressure or rough fric-
tion there."

These four cases conclusively establish the fact, that irri-
tation of the spinal contents is attended with the train of
symptoms known to characterise rheumatism. May we not,
then, by legitimate deduction, infer that there is a spinal
disease whenever we encounter this train of symptoms? If
further evidence be requisite, it is abundantly furnished by
the numerous instances in which genuine, uncomplicated
rheumatism has been speedily cured by medication applied
exclusively to the spine. Dr. Mitchell, reports 41 cases
successfully treated on the new principles.

Pressure over the vertebrae corresponding to the origin of
the nerves supplying the seat of suffering, though in many
instances attended with more or less pain, is not uniformly
so. In some, not the slightest uneasiness is produced by it.
I cannot, however, coincide with Dr. Mitchell, in consider-
ing the tenderness, merely a proof of an irritated condition

*American Journal of the Medical Sciences, May, 1831, p. 55.
American Journal of the Medical Sciences, Aug., 1832, p. 360.
of the "spinal braces;" for, whenever this tenderness does exist, it almost invariably corresponds to the origin of the affected nerves. The degree of sensitiveness may perhaps be indicative of the condition of the membranes alone of the medulla.

In the case before us, we have a happy illustration of the importance of localizing, and properly localizing diseases; for so long as rheumatism was thought to be an affection of the whole system, manifesting itself indifferently in one joint or another, all remedial agents were directed to the general system. How many poor wretches have we not seen subjected to the cruel inflictions of a regular mercurial salivation, a systematic course of sudorifics, antimonials, guaiacum, sarsaparilla, &c., the ordeals of steaming, vaporizing, sweating, &c., and after all, the patient doomed to limp the remainder of his days! But I say that it must be properly localized; for those who view the disease as confined to the seat of pain, will torture their patients with frictions, fomentations, vesications, &c., with as little success as those who endeavored to drive out or neutralize the constitutional impurity.

We have now, I trust, traced rheumatism to its true source, and every remedy based on this belief, gives additional evidence of its correctness. Regarding the disease as seated in the spinal marrow, and believing its nature to be irritation or sub-inflammation, the treatment to be instituted is perfectly obvious. The local abstraction of blood, by leeching or cupping the surface over the affected medulla, followed by the more permanent revulsive action of vesicatories, constitutes the most efficient treatment of rheumatism. In many slight cases, the mere application of a sinapism will readily allay the pain; in others a blister will be required and may be, or not, preceded by cupping, according to the tenderness of the spine, the constitution of the individual, &c. When the local affection is so intense as to induce high febrile excitement, it may be prudent to take blood from the arm, though this should not be carried
to excess. The opiates will occasionally be found useful adjuvants. In obstinate chronic cases, the counter-irritation will be most advantageously kept up by the ointment of tartarized antimony, and should be persevered in, as long as the disease manifests a tendency to return. With this plan of treatment, I repeat, the disease will be found almost uniformly to yield in a few days, and without any internal remedies, or applications to the seat of pain.

You perceive that I have, in the paper just read, used the term Rheumatism in a general sense, and without discriminating between the different forms assumed by the disease. I will, therefore, add a few remarks in order to prevent any misconception as to the pathology advocated, and which I still regard as entirely applicable to every form of rheumatism, with the exception, perhaps, of the acute arthritic variety, in which other elements are added to the spinal.

There is a form of rheumatism usually designated by authors as acute articular rheumatism, the peculiar characteristics of which are a fixed inflammatory action in one of the joints, attended with intense pain, more or less tumefaction, and high general febrile action; all of which symptoms will continue, in spite of our endeavors, a certain length of time, usually varying from four to eight weeks. This is, therefore, a self-limited disease, the intensity of which we may abate, but whose duration we can rarely shorten. In this form of rheumatism we never find more than one joint affected at a time, and this is usually one of the larger joints, as the knee, ankle, elbow, or wrist. It is in this form of the disease that we observe the heart so often implicated. According to my observation the cardiac affection very rarely supervenes as a complication of any other form of rheumatic disease. Again, acute articular rheumatism differs radically from all other forms of rheumatism in the circumstance that one attack usually secures complete immunity from any subsequent attack of the same affection.
Rheumatism.

That this form of rheumatism is, like the other varieties to be hereafter noticed, dependant, to a certain extent, upon a lesion of the spinal marrow, I firmly believe; but it is also evident that this does not constitute its whole patholo-
ygy, for it is attended with a degree of constitutional disturb-
ance that cannot be accounted for either by the spinal lesion or by the local inflammation. We moreover find that a radical change is effected in the composition of the blood in such cases, and that these obey many of the laws which govern the diseases said to be of the blood. It is, therefore, not surprising that the treatment which is applied directly and exclusively to the spinal lesion, should only mitigate and never arrest the disease. I know of no treatment entitled to much confidence in the cure of this form of the disease. Yet, I must acknowledge that I have sometimes thought that I derived advantage from the use of opiates, quinine, antimonial emetics, lemon juice, &c.

But there is another form of rheumatism also called acute, in which there are usually several joints implicated simulta-
eously, and in which there may be considerable febrile excitation. This form of the disease is usually the effect of exposure in inclement weather, and the patient will generally state that he has caught cold in all his limbs. We not unfrequently see violent cases of this kind in which the morbid sensibility invades most of the joints, as well as the muscles and even the cutaneous surface; all of which are exceedingly painful to the touch or upon the slightest motion, so that the patient can neither move nor turn over in bed without excruciating pain. It is in this form of rheumatism that we find revulsives, applied over the origin of the nerves affected, most signally beneficial; for without any other treatment the disease will yield usually in a few days to cupping and blistering over the affected region of the spine. This variety I would, therefore, designate as acute neuralgic rheumatism, in contradistinction to the former which I would term acute arthritic rheumatism.

You will perceive that there can be no difficulty in es-
establishing the diagnosis as well as the prognosis of these two forms of disease. In the former the attack comes on without any evident cause, affects but one joint, and that a large one, is attended with high febrile excitement and yields to no remedy, but goes on steadily increasing in intensity until it has reached its acme in three or four weeks, and then gradually declines in about the same length of time. The latter is, on the contrary, usually induced by exposure, affects more than one joint, is not attended with so much febrile excitement, and yields very readily to treatment. I should also add that whereas the former usually attacks the young and the robust, the latter affects all ages indiscriminately, and one attack so far from securing immunity from others, rather predisposes the patient to them in after life. It is in this neuralgic form of the disease that quinine acts most advantageously and may sometimes be substituted for the more painful spinal revulsives.

There is finally a third form of rheumatism, very generally denominated chronic rheumatism. This variety usually affects one or more joints, is not so painful as the two we have just considered, occurs most frequently after the meridian of life in the temperate, and is very common with drunkards of all ages. This, like the last described variety has also its origin in the spinal marrow, is amenable to the same treatment, but is apt to recur more or less frequently in subsequent life, especially with the intemperate, in whom I have never known it to be permanently eradicated. The tendency to relapse may, however, be entirely overcome in persons of good habits, by a faithful perseverance in the use of revulsives to the spine.

While I place no reliance in the use of liniments, nor in frictions of any kind, in this and the other forms of rheumatism, there are yet cases in which the joints, after repeated attacks, become so much involved that their tissues will not return very speedily to the normal condition. In these cases frictions with neat's foot oil, opondedoc, or even stimulating linaments, at the same time that
gentle motion is imparted to the joints, are advantageous. I have derived decided benefit from the application to them of the tincture of iodine once or twice daily as long as it could be tolerated. I have also used advantageously a solution of shellac. This may be made by dropping bits of shellac in alcohol, successively, until the solution acquire the consistency of mucilage. This, when applied with a soft brush or mop, once or twice a day, will form a thick and adherent pellicle which should be reproduced as fast as it may be disposed to scale off.

I will now read to you, from my note book, a few cases to illustrate and impress upon your minds the several forms of the disease I have just endeavored to define:

**Acute Articular Rheumatism.**

January 31st.—Mr. A. L., aged 25 years, of robust constitution and of full plethoric habit, was, last night, without any evident cause, taken with pain in the right knee, which to-day confines him to his bed. Is rubbing the knee with with liniment. Ordered cream of tartar as a laxative, and allowed the frictions to be continued.

22d.—Pain increased; has some fever; knee a little tumefied; very little tenderness at the lower end of the spine, which is ordered to be freely cupped.

27th.—Has been gradually getting worse under the use of tincture opium applied to the knee, morphine taken internally, and cooling beverages. Has refused to be blistered, but is now willing to submit to the application of tartar emetic ointment to the spine. Morphine continued, pro re nata, and a tablespoonful of tinct. guaiac. to be taken three times a day.

29th.—Pains increased; fever high; unable to move his limbs in the slightest degree without intense pain; tumefaction increasing. Took 24 ounces blood from the arm. Ordered the knee to be poulticed with flaxseed and laudanum.

31st.—Disease still progressing. Ordered the spine to be
freely cupped to-day and to-morrow, and then blistered, _pule. dor._, at bed time.

February 8th.—No amendment. Re-apply the blister and take denarcotized opium as freely as may be necessary to relieve pain.

13th.—Still suffers dreadfully; fever still high and continuous. The blistered surface has healed. Ordered another blister and the anodynes to be continued as heretofore.

18th.—Febrile symptoms less intense, and pains not so excruciating. Thinks his knee would feel better if rubbed. Ordered a liniment consisting of oil, _tinct. opii._ and _sp. tereb._, also _tinct. guaiac._ and morphine internally.

28th.—Is gradually improving; same prescription continued.

March 10th.—Has improved very little since last date, with the exception of a considerable diminution of the fever. Ordered a blister to the knee. Continued the guaiacum and anodynes. Bowels kept open with laxatives.

16th.—All symptoms subsiding rapidly; knee blistered again; _ung. ant._ applied to the spine.

26th.—Still improving; knee blistered again.

April 5th.—Case discharged, although the knee is so stiff as to allow but little motion. The patient ordered to continue frictions with neat's foot oil, and to exercise the limb as much as possible until he regain its free use.

Remarks.—We have here the details of a case such as we have denominated acute arthritic rheumatism, which occurred without evident cause in an individual in the full vigor of life; which affected but one joint; which ran its course uninterruptedly and without being modified in the least by any remedy prescribed, whether directed to the spine or to the general system; and which continued upwards of 70 days, attended with a degree of febrile excitement entirely disproportionate to the local affection. This gentleman had never suffered from rheumatism before, nor did he experience any subsequent attack for fifteen years afterwards,
when he died of a dropsical affection which may have been occasioned by some disease of the heart, consequent upon the above attack of rheumatism. I did not see him in his last illness. His exemption from subsequent attacks of rheumatism is the more remarkable from the fact that he became very intemperate a number of years before his death, and that intemperance is a very common cause of one of the other forms of rheumatism.

**Acute Neuralgic Rheumatism.**

January 20th.—Thomas Bernard, a native of Ireland, about 30 years of age, and of sanguineous temper, was taken about the first of this month with rheumatism when working on the railroad; was subjected to a variety of treatment by a country physician, the details of which are unknown. I found him stretched upon his back, without the power to move either of his limbs, and complaining of the most excruciating pain in the loins, knees, ankles, shoulders, elbows and wrists. Fever high, pulse full and strong, great thirst, no appetite, and costive. Ordered free blood-letting from the arm. Ol. ric., and diluent drinks.

January 21.—Fever still high; cathartic operated well; passed a wretched night, without a moment's rest. Upon examination found the spine extremely painful on the least pressure over the origin of the nerves of the lower extremities. Tenderness also existed, though to a much less degree, in the upper portion of the dorsal vertebrae. Prescription—To be cupped freely over the origin of the nerves of the superior and inferior extremities; pulv. dov. at night; light diet; diluent drinks.

January 22.—Pains much less intense; can draw up his legs. Cups repeated; pulv. dov. at night.

January 23.—Can turn over in the bed, and feels pain only when he moves; swelling at the joints reduced, blister over lower end of spine.

January 24.—Legs entirely relieved with the exception
of a little weakness. Fever entirely subsided. Cups to the upper portion of the spine.

January 25.—Arms much better. Cups repeated.

January 26.—Can rise and move about the room, though stiff and weak. Ung. tart. ant. to be applied at each extremity of the spine.

January 28.—Has improved so rapidly that he now walks about the streets, and the case is discharged.

February 4.—Exposed himself considerably, and has again taken his bed, with great pain in the upper and lower extremities. Blister to the lower end of the spine, and ung. ant. to the upper.

February 5.—Much better. Pulv. dov. at night.

February 6.—Walks about the room. Saline carthartic; pulv. dov.

February 11.—Feels quite well in every respect.

**Chronic Neuralgic Rheumatism.**

February 17.—Resumed his work on the railroad.

Case 1.—March 21.—Mr. J. G., aged 25 years, had syphilis about eighteen months ago, for which he was treated successfully with mercurials, but was seized with rheumatic pains about six months afterwards in various parts of the body, which he says have returned repeatedly under exposure to bad weather. He has now been suffering severely several days with pains in the knee and wrist of the left side, both of which joints are swollen and very sensitive to the touch; has slight fever; pressure upon the spinal column reveals great tenderness over the two lower lumbar vertebrae alone. Freely cupped over these vertebrae, and also over the uppermost dorsal and the cervical vertebrae.

March 22.—Feels no pain whatever; swelling considerably diminished; feels a little stiff. Ung, tart. ant. to be rubbed over scarified surfaces, and a plaster of the same kept on all night.

March 23.—Is apparently well, and complains of nothing but the soreness of the scarified parts. Case discharged.
April 4.—Has had no return of pain and continues well.

Case 2.—February 3.—Mrs. C. P., aged about 20 years, of robust constitution, experienced, about a week ago, pains in her limbs, which, in a few days, were located in the knee and wrist of the right side, which are now very much swollen and painful. Liniments have been used freely without the least relief. Pressure on the spine causes slight pain only in the upper dorso-cervical region; no fever. Ordered sinapisms to the upper and lower portions of the spine.

February 2.—Pains much alleviated; sinapisms repeated.

February 3.—Swelling rapidly diminishing, particularly in the knee; no pain of consequence.

February 7.—Walks about the house, and complains of nothing but a little stiffness. Case discharged.

Case 3.—January 31.—Mr. G. F. P., about 30 years of age, has been suffering excruciating pain from rheumatism of the head for three weeks, during which time he has been subjected to venesection, cathartics, a low diet, frictions, cold affusions, to the head, &c., without relief. Pressure over the last cervical and first dorsal vertebrae produces considerable pain. The hair had been shaved from the upper part of the neck and a small blister applied, but this did not extend as low as the sensitive part and it produced no diminution of pain. I now ordered the application of another blister of sufficient length to extend from the upper cervical to the second dorsal vertebrae.

February 1.—Blister has drawn very well, but still suffers as much as ever. Ordered simple dressing.

February 2.—Pain rather less severe; ung. tart. ant. to be spread over the blistered surface.

February 3.—Much relieved. Same prescription.

February 4.—Quite well and gone to work.

This case illustrates the importance of making the revulsive application immediately over the seat of irritation, or, in other words, over the painful vertebrae in order to insure success.
Sub-Acute Neuralgic Rheumatism.

April 1.—Mr. S. W., about twenty-five years of age, a circus rider, has just arrived from a country tour with severe pain in the right shoulder and right hip, which he says he has had nearly a week. He can neither stand upon the affected leg, nor remove the arm from the side of the body. The affected joints are tender to the touch, and so are the vertebrae at the origins of the nerves of the upper and lower extremities. He has some fever, and is confined to his bed. He begged to be relieved as speedily as possible, without regard to the severity of the treatment, as he was an important member of the company to which he was attached. I accordingly ordered him to be cupped freely over the tender vertebrae at each end of the spine, and to have the scarified surfaces immediately covered with blistering plasters.

April 2.—Patient much relieved, and states that he was enabled to move his limbs with but little pain immediately after the cupping. Ordered simple cerate to the blisters.

April 3.—Entirely relieved.

April 4.—Resumed his performances at the circus.

Symptomatic Lumbar Pain.

March 26th.—Mr. H. J., affected with orchitis for several days, complained of pain in the lumbar region to such a degree as to prevent any rest at night. On examination found that he could not bear the least pressure over the vertebrae of that region. Ordered a large sinapism to be dept on as long as he could bear it.

March 27.—Relief complete.

March 30.—The sinapism was re-applied and he has since had no more pain in the back.

In this case the pain in the loins was probably symptomatic and not rheumatic. Yet it was very promptly relieved by the same treatment.
Lectures on the Theory and Therapeutics of Convulsive Diseases, especially of Epilepsy. By Charles Bland Radcliffe, M. D., Fellow of the College, Physician to the Westminster Hospital, etc.

LECTURE III.—(CONTINUED FROM MARCH NUMBER.)

In the last lecture I spoke of simple epilepsy, and endeavored to show that the facts are more in accordance with the theory of muscular motion propounded in the first lecture than with that ordinarily received theory which would ascribe the convulsion to over-stimulation on the part of one or other of the nervous centres. In doing this, I insisted particularly upon the asphyxial state of the circulation and respiration, and argued that the want of red blood during convulsion must necessitate at that time a corresponding want of action in every one of the nervous centres. In the present lecture I propose to continue the inquiry, and see whether the same theory is applicable to convulsive diseases generally. I also propose to add a few words upon the therapeutics of these maladies.

I.—The Theory of Convulsive Diseases Generally.—In proceeding to a cursory examination of convulsive diseases generally, I shall divide these diseases into three categories, of which the distinctive signs respectively are tremor, convulsion and spasm. In the examination itself, I shall do as I did when speaking of simple epilepsy, and consider first the condition of the circulation and respiration, and afterwards review the several nervous phenomena, other than tremor, convulsion, or spasm, which must not be passed by in silence.

II.—The Theory of Tremor.—The category of convulsive diseases of which the distinctive mark is tremor, includes the tremblings of delicate and aged persons, of paralysis agitans, of delirium tremens, the rigors and subsultus of fevers, and the shakings of slow mercurial poisoning.

1. The state of the circulation and respiration in these several conditions is sufficiently obvious. There is no doubt that both these functions are much depressed during common trembling; for this is evident as well in the paleness and chilliness of the person trembling as in the decided relief afforded by wine. In delirium tremens, the perspiring skin, the cold hand, the quick compressible, fluttering pulse
are all significant and unmistakable facts. It is evident, also, that the trembling is connected with this state of things; for if the dry skin and excited pulse of true meningitis make their appearance, the trembling is at an end. On the other hand, an argument to the same effect is to be found in the fact that tremor is exaggerated into subsultus, or even into convulsion, as the heart and pulse fail in the downward course of the disorder. Rigor, moreover, is coincident with a sense of coldness, a feeble pulse, a sunken countenance, a corrugated skin, and subsultus, with a pulse faltering in its final throes; and that this coincidence is not accidental, is seen in the fact that rigor disappears as the pulse and warmth return, and that subsultus may be checked for the time by the use of wine. And in mercurial tremor, an inference as to the real state of the circulation may be drawn from the general practice prevailing amongst the subjects of this disorder of resorting to gin and other stimulants to make themselves steady.

2. The nervous phenomena, other than tremor, are in accordance with the foregoing facts. In a bout of ordinary trembling the mental faculties are all unstrung; and in the permanent and extremest form of this trouble, as in paralysis, they have altogether succumbed before the inroads of age or disease, and the sufferer lives only to sleep and eat. In delirium tremens the mental state is passive in every point of view. The patient lies unmanned, as it were, before some dim phantom of evil; or if not—if, that is to say, active delirium takes the place of the delirium tremens, and other symptoms betoken the existence of active inflammation—then the affection ceases to be delirium tremens, for the trembling has disappeared. In the initial rigors of fever, the mental state is one of dejection, languor, stupor: in subsultus, it is one of vague dreaminess, or of drowsiness not removed from mortal sleep. In slow mercurial poisoning, the failure of the mental powers keeps pace with the decay of the bodily strength, and the condition is one of premature old age.

In the different forms of tremor, therefore, the state of the nervous system, as reflected in the condition of the mind, is one of comparative inactivity. Nor is it easy to suppose that the condition of the brain is different from that of any other part of the nervous system; for if a due supply of blood be necessary to the due exercise of the different nervous functions, as it undoubtedly is, then it follows
the medulla oblongata, the spinal cord, and every other nervous centre, must be in a similar state of comparative inaction during trembling.

II.—The Theory of Convulsion.—The second category, in which convulsion is the distinctive feature of the muscular disturbance, is divided naturally into two sections by the absence or presence of consciousness during the convulsion. Where the consciousness is preserved the convulsion may be called simple; where consciousness is in abeyance, the convulsion is epileptiform. Simple convulsion occurs in hysteria, in chorea, and in those strange affections which take an intermediate position between the two, as the dance of St. Vitus and St. John, tarantism, and other affections of the kind. Epileptiform convulsion includes the convulsion connected with certain diseases of the brain—chronic softening, chronic meningitis, tumor, induration, hypertrophy, atrophy, congestion, apoplexy, inflammation—with fever, with uremia and other suppressed secretions, with "irritation" in the gums and elsewhere, and with death from haemorrhage and other causes.

A. The Theory of Convulsion.—I. The pulse of persons who suffer from hysterical convulsion is generally soft, quick, and variable. The skin is frequently pale, and the hands and feet are often subject to chilblains, even when the weather is not very cold. Nor is there any real excitement of the circulation during the paroxysm. Indeed, the mode of breathing which is slow, embarrassed, and accompanied by deep sobs and hiccup, is altogether incompatible with anything like excitement in the circulation. There is, moreover, some reason to believe that unnecessary stress has been laid upon a disposition to inflammation as one of the characters of hysterical subjects; but, be this as it may, there is no reason for supposing that any inflammatory disturbance of the circulation in any organ has anything to do with the symptom with which we are here concerned—the convulsion.

As in hysteria, so in chorea, the circulation is subject to considerable fluctuations, but the habitual state is one of marked depression. The pulse most generally is quick and weak, and the heart is readily thrown into a state of palpitation. In many cases, also, as additional evidences of a feeble circulation the face, lips, gums, and tongue are pale, the skin is pasty, and in extreme cases the serous cavities are more or less water-logged. In some instances there
may be all the signs of actual chlorosis; in other instances there may be predisposition to rheumatic fever, but this predisposition cannot be urged as an objection to the idea, now very generally admitted, that chorea is essentially a feverless malady; for it is certain that chorea is never coincident with rheumatic fever.

2. The habitually feeble state of the brain in persons subject to hysterical convulsion is shown in a variety of ways—indecision, irresoluteness, fickleness, pliability, over-sensitiveness, fidgetiness, and so on. And in the fit the will is altogether in abeyance, and the mental state is one approaching very closely to unconsciousness. The condition of the circulation at the time of the convulsion is also incompatible with any but a very low degree of action in any one of the nervous centres. Nor is it necessary to suppose that the uterus has anything to do with hysterical convulsion beyond this—that many common and important causes of weakness and exhaustion refer more or less directly to this organ.

The subjects of chorea present the same evidences of mental feebleness as those which are met with in hysteria—the same vacillation, irrationality, inordinate sensitiveness, timidity, fretfulness, irritability. It is to be supposed, also, that the mental state reflects the state of all the nervous centres; for the circulation is manifestly unequal to maintain the action of these centres at the normal pitch. Nor is any contrary evidence presented after death. In a certain number of cases, no doubt, traces of inflammatory action have been found in or on the brain or spinal cord; but as such traces are not found in the majority of cases, it is evident that inflammation of the brain or cord cannot be regarded as essential to chorea. What the occasional traces of inflammation may signify is another matter. It may be that the inflammation preceded the chorea, and left the nervous centres damaged, and to that extent weakened; and this opinion would not seem to be improbable where the signs of mischief were evidently of no very recent date. It may be that the inflammation has been a consequence rather than a cause of the chorea—the nervous centres in connexion with the muscles, like the muscles themselves, breaking up, as it were, from sheer fatigue. At all events, it may be seen now, and will be seen more distinctly presently, that inflammation of the brain or cord is not to be regarded as a direct cause of any kind of choreic movement.
B. The Theory of Epileptiform Convulsion.—1. In a case of general epileptiform convulsion, the state of the circulation is as far removed from anything like excitement as it is in simple epilepsy. There is, indeed, the same failure of the pulse at the commencement of the fit, and the same state of positive suffocation during the fit. In the case of partial epileptiform convulsion, the only difference is one of degree. In any case, the pulse is scarcely to be felt at the beginning of the paroxysm, and everything shows that the circulation is at a very low ebb; and if the pulse acquires any semblance of power as the paroxysm proceeds, the dusky and livid color of the face, the interrupted breathings, and other unequivocal signs of suffocation, afford sufficient proof that this phenomenon is due, not to the increased injection of red blood into the arteries, but to the impeded circulation of black blood, as explained in the last lecture.

Nor is there any evidence of a contrary character, in the antecedent history of epileptiform convulsion, for in those cases in which the malady is of an inflammatory or febrile character, it will be seen that the fit occurs either in the period of prostration which precedes the development, or else in the period of collapse which comes on after the dying out of the fever or inflammation.

In chronic softening of the brain, the habitual coldness of the hands and feet, the weakened and perhaps degenerated heart, the atheromatous or calcareous deposits in the arterial coats, are amongst the many signs which show the innate weakness of circulation—a weakness to which fever and inflammation are alike uncongenial.

In chronic meningitis, as might be expected from the unmistakable evidences of a scrofulous, habit, and from the state of weakness and exhaustion which are so generally present, the pulse, for the most part is quick, weak, and much affected by changes of posture. There may be some hectic excitement in the evening, the cheeks flushing, the eyes shining, and the aching head becoming a little hotter than it was before; but this faint excitement is not sufficient to raise the pulse to a normal pitch of activity. In no case, indeed, is this reaction of the circulation a marked and conspicuous phenomenon, and in the majority of instances it is scarcely sufficient to impart even a semblance of power to the weak and feverless pulse. And if there is little vascular excitement in ordinary chronic meningitis, there is, if possible, less in that form of the disease which is known as chronic hydrocephalus.
In tumor of the brain the pulse is quick, weak, irritable, fluctuating, or if not, it will be so as soon as pain, want of sleep, and despondency—common symptoms of tumor—have had time to bear their natural fruit of weakness and exhaustion.

In induration of the brain, such as met with in lead-poisoning, &c., the phenomena presented by the circulation differ very little, if at all, from those which occur in advanced stages of ordinary epilepsy, and any difference there may be, is one which indicates a state still more fully removed from fever.

In atrophy of the brain, as in simple epilepsy, there is no evidence of anything like excitement in the circulation.

In congestion of the brain, the head and face are congested and dusky, the lips purplish, the jugular, full, the pulse and respiration slow and labored, the hands and feet habitually colder than the head. There are, indeed, many evident signs which show that the circulation is not carried on with proper vigor, and which appear to point to imperfect arterialization of the blood as one cause, of this defect.

In apoplexy the convulsion is most apt to happen at the end rather than at the beginning of the period of coma, when the purpled lips and the inadequate breathings show the respiratory changes are rapidly failing. Or, if it happens at the beginning, it is in those forms of apoplexy in which the condition of the circulation at the time is more akin to collapse than anything else, and not in those forms in which there is an excited pulse, and strong determination of blood to the head.

In inflammation of the brain, the condition of the circulation may vary a good deal with respect to the inflammation, but little with respect to the convulsion.

Simple meningitis begins with paleness of the skin, a feeble depressed pulse, cutis anserina, vomiting, rigor, perhaps convulsion. Then follow rapidly the symptoms of high febrile reaction and cerebral inflammation, the pulse becoming hard and frequent, the breathing irregular and oppressed, the skin—particularly the skin of the head—hot and burning. After continuing for two or three days, these symptoms of high febrile reaction give place to an opposite state of things, in which the pulse loses its force, and becomes weak, small, irregular, and the breathings are interrupted by frequent sighs and pauses. Or, if at this time the pulse retains any degree of resistance, it is evident, from the dusky color of the skin and the suspirious and labored respiration, that the whole of this re-
sistance is not due to the injection of arterial blood into the artery. Now, it is in this stage of collapse, or semi-suffocation, which follows, or else, in the cold stage which precedes, the febrile and inflammatory excitement, and never during the period of excitement, that the convulsion happens. And this rule is constant. Indeed, the history of simple meningitis shows most conclusively that vascular excitement is as incompatible with convulsion as it is with rigor and subsultus.

In tubercular meningitis, the pulse is weak and variable from the first, now quick, now comparatively slow, rising in frequency when the head is raised from the pillow, and falling when it is laid down again; and from the very first the respiration is irregular, unequal, and interrupted with frequent sighs and pauses. For some time there may be little disturbance of a hectic character, particularly in the evening, but this soon comes to an end, and the prostrate pulse forgets to put on even this faint semblance of fever. In some cases, there may, indeed, be a short stage of fever, and something like active cerebral inflammation, especially in young children; but as a rule the symptoms are altogether of a passive, non-febrile, non-inflammatory character. In any case, however, the convulsion is connected with a depressed state of the circulation, and never with febrile and inflammatory excitement, if such state there be.

In rheumatic meningitis, also, there is little or no febrile excitement from the beginning, and the pulse has become powerless and utterly weak before the convulsion happens.

In general cerebritis, the pulse, at first slow, soon becomes variable and readily affected by change of posture; the respiration, also, is very variable and suspirious. From the first, indeed, there is scarcely any fever, and little heat of head, except the phenomena of cerebritis are mixed up with those of simple meningitis; but if such symptoms are present, they soon pass off, and give place to symptoms of slow sinking—a state in which, hour by hour, the breathing is more interrupted with sighs and pauses, and the pulse more powerless, unless it may have a fictitious power, from the presence of more or less black blood in the artery, in which case the dusky countenance and the purple lips will show very clearly that any increased injection of red blood is at this time out of the question.

In partial cerebritis there is even less febrile disturbance than in general cerebritis, and at no stage of the malady is there anything like increased vascular action.
The immediate antecedents of the epileptiform convulsion which may attend upon the onset of fever are—paleness of the face, coldness of the hands and feet, a feeble, soft, and fluctuating pulse, a respiration that is short, accelerated, and interrupted by frequent sighs. The immediate antecedents of the convulsion which may attend upon the end of the fever are, a weak and threadlike pulse, a frigid hand, and lungs too much gorged with blood to allow of any proper respiration—a state in which, febrile reaction having long since died out, the hand of death is already upon the heart or brain. The convulsion which may attend upon fever, indeed may take the place either of rigor or subsultus, and like these forms of muscular disturbance, it is associated, not with the state of depression, which is as much below the natural standard as any febrile excitement is above that standard.

In the convulsion connected with dentition, there may have been little or no previous fever, and by quick degrees the pulse may have become excessively weak, or there may have been symptoms of cerebral inflammation with high fever, and afterwards a state bordering very closely upon collapse. In any case, the immediate antecedents of the fit are indicative of great vascular depression—great vascular depression brought on slowly without any very obvious fever or determination of blood to the head, or else that which precedes or succeeds active fever and determination. And so likewise with the convulsion which is connected with worms or other sources of irritation in the alimentary canal; for if there has been any febrile disturbance, this has passed off; and left the patient not only feverless, but pale and chilly. Nor is it otherwise with those forms of convulsion which are referred to uterine irritation. In the convulsion connected with menstruation, the circulation is in the state in which it is in ordinary epilepsy or in ordinary hysteria; and a similar remark applies to several of the convulsions which may happen in the course of pregnancy. In the convulsion of flooding, the face and even the tongue is blanched, the hand frigid, the body bathed in cold sweat, the pulse fluttering and well-nigh imperceptible, the breathing a continuous sigh or gasp. In the convulsion occurring in labour without flooding, the head is often greatly congested, and the aeration of the blood seriously interfered with, partly in consequence of the way in which the lungs sympathize with the semi-comatose brain, and partly because the regular expansions of the chest are interfered with by the constant efforts at straining. In such a case the pulse may be full; but if so, the venous color of the lips
will show that this fullness is due to the circulation of black blood rather than to the circulation of red blood in the vessels. In the convulsion which may happen during puerperal fever, the vascular antecedents are the same as those which may happen towards the end of every fever. And finally, the condition of the circulation before the convulsion which is referred to "irritation" of a sexual character, if it differs at all from that which is met with in ordinary epilepsy, differs only in being one of still deeper depression.

Nor is there any trace of vascular excitement before the convulsion which may happen in the moribund state. In the convulsion attending death by haemorrhage or asthenia, the blanched face and tongue, the frigid hand, the sighing or gasping respiration, the faltering pulse, are signs which require no comment; and in the convulsion attending death by speedy or gradual suffocation, the state of things is equally opposed to the idea of vascular excitement; for how—to ask this question once more—can vascular excitement and a state of suffocation be compatible conditions?

In a word, there is no instance in which epileptiform convulsion can be supposed to have any connection with an excited state of the vascular system, and there are many instances in which the circulation is as far as possible removed from such a state; and the only conclusion which can be drawn from these facts is one which seems to harmonize with the physiological premises, and with the previous conclusions respecting simple epilepsy.

2. In a case of general epileptiform convulsion, the mental faculties are as completely suspended as they are in epilepsy. The dilated pupil remains immovable under the brightest light; the ear is deaf to the loudest noise; and when the patient recovers—if he do recover—his memory is absolutely blank as to everything which happened during the fit. In partial epileptiform convulsion, such as occurs not infrequently in chronic softening or tumor of the brain, as in partial epileptic convulsion, the mental faculties may not be altogether suspended, and the memory is occasionally able to recall some of the circumstances attending the fit. In the case of general epileptiform convulsion, therefore, the condition of the mind is evidently one of inaction. Of this there is no doubt. Nor can there be any doubt that the state of the mind is one of comparative inaction in partial epileptiform convulsion; for the utter bewilderment, the inability to collect and control the thoughts, the trepidation, and the want of power over the muscles, are all signs which cannot be mistaken.
It would seem, also, that the brain is not less inactive than every other centre of nervous action, for (to repeat the argument already used so often) none but the very lowest degree of action is compatible with the circulation of unarterialized blood in the vessels. Nor is there anything contradictory in this conclusion in the facts which remain to be mentioned.

In chronic softening of the brain the fits are preceded by unquestionable, and often very marked, impairment of the mental faculties, and in some cases the mind may be a total wreck. Fire and energy are dying out and dulness and drowsiness point to the coming coma, of which they are the forecast shadows. The brain, also, is blighted, not inflamed. It is pallid, whiter than it ought to be, deficient in red spots, and in parts, softer than natural; and, on microscopic examination the softened substance is found to consist of broken-down brain tissue, with a greater or less number of cells containing oil, and sometimes reddened with blood corpuscles, (for haemorrhage is a common consequence of softening) but without any of the products of true inflammation—exudation and pus-corpuscles.

Impairment of the mental faculties, progressively increasing, is also a prominent symptom of chronic meningitis—impairment which would seem to be more marked by peevishness, impatience, fidgetiness, and not unfrequently this wandering may settle down into insanity. Or there may be no positive symptoms of any kind. After death the principal sign of disorder is effusion of serum beneath the arachnoid or into the ventricles, and this is often the only sign. In some instances there may be congestion of the pia mater, or evidences of tubercular degeneration in this membrane and in the contiguous parts of the brain; but, as a rule, the appearances are altogether negative. Indeed, in some instances, where the quantity of effused fluid is large, as in chronic hydrocephalus, the brain has a blanched, bloodless appearance, and the effused fluid is much less rich in solid constituents than the serum of the blood—a fact which is somewhat calculated to show that inflammation has no share in its production.

In the majority of cases of tumor, the intelligence does not appear to suffer in any very marked manner, and when it is otherwise, it is owing, in some degree at least, to the presence of chronic meningitis. The pain, however, the want of sleep, the depression of spirits, all combine to exhaust the brain, and this exhaustion is generally shown by vagueness in the ideas, by inability to fix the thoughts, or in some other manner. Nor is the pain, which is usually so very prominent and dis-
tressing a symptom, an objection to the idea, that the brain is acting inefficiently in these cases, indeed, pain in the head is a sign that the brain is inefficiently supplied with arterial blood, it ceases, and gives place to delirium, when the arterial injection increases. Nay, in some instances there is reason to believe that the nervous energy is lessened during pain, and that pain may be as much a sign of want of action in a sentient nerve as spasm is a sign of want of action in a motor nerve. At any rate Professor du Bois-Raymond has shown that the nerve-current in the nerve of a frog fails when the cutaneous ramifications of the nerve are subjected to a treatment which must give rise to pain. But be this as it may in other instances, in tumor of the brain it must be difficult to regard pain as a sign of over-action, for the companion symptoms during life, and appearances after death, are alike opposed to such a conclusion.

In induration of the brain, there is as little evidence of any excitement in the mental faculties as in any of the previous cases, probably less; and the condition of the brain after death affords no countenance to the idea of inflammation, for the brain is harder, darker in color, drier, more bloodless than it ought to be.

In cases of atrophy of the brain, where the condition is congenital, the probability is that the patient is idiotic as well as epileptic. In cases of hypertrophy of the brain, which cases are occasionally met with in children, while the bones are sufficiently yielding to allow expansion in the enclosed organ, the patients have not had any other inconvenience beyond the deformity—a faint argument, possibly, that want of brain and therefore want of cerebral action, had really to do with the convulsion which would seem to be a constant phenomenon in atrophy of the brain.

A person suffering from congestion of the brain is less "bright" than he was, his conceptions are wanting in clearness, he is deficient in the power of attention and application, his sight is dim, his hearing dull and perplexed with ringing or rumbling sounds, he is drowsy, and feelings of weight in the head and pain are familiar troubles. Everything, indeed, indicates an oppressed and inactive brain.

In apoplexy, the mental antecedents are those of congestion or softening, not of inflammation as such. There would, indeed, appear to be a strange absence of inflammatory tendency in the brain in apoplexy; and if there are any evidences of inflammatory action around the clot, it will generally be found that this action was anterior to the haemorrhage in point of
time—that, in fact, the blood had escaped in consequence of a previously softened state of brain. It is possible, also, that an argument in favor of a tendency directly opposed to the idea of inflammation may be found in the fact pointed out by M. M. Andral and Gavarral, that the blood in apoplexy is deficient in fibrine; for if the effect of inflammation be to increase the amount of fibrine contained in the blood, it may be supposed that a deficiency of fibrine indicates a state of things which is the reverse of inflammatory.

Nor is there the least reason to believe that any over-action of the brain is concerned in bringing about the convulsion which is connected with inflammation of the brain.

In simple meningitis, convulsion may attend upon the very outset of the disorder. In this case, it coincides with the cold stage which ushers in the true inflammatory reaction, a stage of which the mental signs are, depression, confusion, perhaps drowsiness. Or convulsion may attend upon the period of final prostration which follows the true inflammatory reaction, a period in which the mind is rapidly sinking towards a state of coma. Convulsion may occur at one or other of these times but it never occurs in the true inflammatory stage, when the pupil is contracted to the size of a pin's head, when the impatient sensitiveness of the eye and ear is scarcely to be quieted by absolute darkness or silence, and while there is agonizing pain in the head or fierce delirium.

In tubercular meningitis the acute pain, the wild delirium, the intolerance of light or sound, which mark the outburst of simple meningitis, are wanting, and the course of the disease is insidious. In ordinary cases, where the symptom set in thus stealthily, the usual period for the convulsion is after the brain and the system generally have given many unequivocal signs of exhaustion. In other cases, where there may be more marked febrile disturbance, the convulsion may happen in the initial cold stage, or after the febrile symptoms have calmed down and left the system in a jaded and exhausted state. As a rule, however, the idea of inflammation has as little to do with this affection as with phthisis pulmonalis; for when the diseased products are examined microscopically, they are found to consist, not of products of inflammation, but of the well-known elements of ordinary tubercle.

In rheumatic meningitis the convulsion observes the same rule, occurring either in the initial cold stage of the fever, and preceding the accession of the violent pain and delirium, or else waiting until the excitement has passed off, and the patient is left drowsy and semi-comatose.
In general cerebritis anything like wild delirium or acute pain in the head is absent, unless the affection is complicated with meningitis; and the characteristic state is dulness and drowsiness, rapidly progressing into typhoid prostration.

In partial cerebritis the course of the disease is less rapid, and the downward progress may be interrupted by pauses of longer or shorter duration, but in other respects its characters are the same. From beginning to end, in either case, there are no evidences of an excited condition of brain to be gathered from an analysis of the mental phenomena, or at any rate there are no such evidences at the time the convulsions make their appearance.

In fever, convulsion may precede the establishment of the febrile excitement, in which case the mental state is one of great depression, oppression, prostration, stupefaction. In other words, it may occur in the initial period of collapse or rigor—the cold stage; or it may occur in the final period of prostration, when a few incoherent mutterings are the only traces of the previous delirium—when the last traces of mental action are rapidly succumbing to the drowsiness of approaching death. It may occur at one or other of these times, but not during the active period of fever.

In epileptiform convulsion depending upon retention of urine, the patient before the attack is drowsy, stupid, listless, despondent, his eyesight dim, his hearing dull, his speech drawling; and in convulsion depending upon retention of bile, delirium is at an end, and drowsiness has become well-nigh comatose before the time for the attack has arrived.

In difficult dentition the brain is exhausted by pain and want of sleep, and drowsiness is taking the place of fretfulness and wakefulness before the occurrence of the fit; or if there be any cerebral inflammation, the fit follows the rule which has been already laid down.

In worms, and in other forms of irritation in the alimentary canal, the mind as well as the body is not braced up to the proper pitch of health, and the patient is jaded, irritable, and drowsy.

In convulsion arising from “uterine irritation” the mental state is that which belongs to either epilepsy or hysteria.

In the convulsion of flooding the pupil is dilated, the thoughts are undefined and incoherent, and before the tossings change into convulsion the last trace of mental action has died out.

In the other convulsion occurring during labour the brain is exhausted by pain and straining, and upon the point of lapsing into a state of coma when the convulsion happens.
In the convulsion of true puerperal fever the mental condition is the same as in the convulsion of ordinary fever.

And, lastly, the epileptiform convulsion referred to "sexual irritation" has the same mental accompaniments as ordinary epileptic or hysterical convulsion, one or other.

Nor can there be any doubt as to the condition of the brain connected with the moribund state. In death haemorrhage or asthenia, mental action fails pari passu with the flowing of the blood out of the vessels, and the sufferer has become altogether insensible to pain and trouble before he is seized by the convulsion. And when death is brought about by suffocation, whether slowly or rapidly, it is no less certain that all mental action fails pari passu with the failure in the respiration, and that the last spark of mind has vanished before the time for the convulsion has arrived.

Whenever epileptiform convulsion makes its appearance, therefore, the attack is preceded by some evident failure in mental energy, and in several instances this failure is almost or altogether complete. Nor is it possible to suppose that this state of inaction is confined to that part of the nervous system which is the scene of mental life; for the depressed or oppressed state of the circulation which precedes the attack involves a corresponding degree of inaction in the complete chain of nervous centres.

In a word, there is nothing in the history of epileptiform convulsion which is not in perfect accordance with the history of simple epilepsy, or which may not be interrupted in the same manner.

(to be continued.)


Prostatorrhœa is defined to be a discharge from the prostate gland, generally of a thin mucous character, dependent upon irritation, if not actual inflammation, of the component tissues of that organ. It has generally been confounded with other lesions, as gleet, or chronic urethritis, seminal losses, and cystorrhœa, or chronic inflammation of the mucous membrane of the bladder. It does not often occur among children or old people, but is most common during the ac-
tivity of the sexual organs, and is most frequently met with in those whose sexual propensities are the strongest. The exciting causes are not always evident, but the disease has generally been traceable, either directly or indirectly, to venereal excesses, chronic inflammation of the neck of the bladder, stricture of the urethra, or some affection of this canal; it may have its origin in diseases of the rectum, and the use of internal remedies, as cantharides; turpentine, may excite a temporary prostatorrhcea; a common cause in young men is masturbation. The symptoms are a discharge of mucus, generally perfectly clear, ropy, varying from a drachm upwards in twenty-four hours; in efforts at defecation the flow is greatest. It is attended, also, with a pleasurable, tickling sensation sometimes. Prostatorrhcea may be distinguished from urethritis by the gradual supervision of symptoms, the transparency of the discharge, the absence of charges in the urine, or difficulty in micturition.

The pathology of this affection consists in a disorder of the follicular apparatus, leading to an inordinate secretion of its peculiar fluid. This may be due to inflammation, but in some instances the organ appears to be entirely healthy, in which case it is supposed to be due to a heightened functional activity. The prognosis is generally favorable, as this affection is not a disease, but a symptom of disease, usually slight, and easily removed; it is often, however, very obstinate, and when the mind deeply sympathizes with the local affection is very difficult of management.

The treatment should be directed to the removal of the cause, and to this end there should be a thorough exploration of the genito-urinary apparatus, the anus, and the rectum, and a careful inquiry as to the habits of the patient. If he is weak, gentle exercise, nutritious diet, wine and tonics are indicated. The tincture of the chloride of iron in union with tincture of nux vomica is especially recommended; if he is plethoric, the antimonial and saline mixture is useful; the most useful topical applications are cooling and anodyne injections, as Goulard's extract with wine of opium in the proportion of one or two drachms each in ten ounces of water, three times daily; in obstinate cases, cauterization once a week may be necessary; the cold hip bath is also important, and if the symptoms do not yield, leeches should be applied around the anus and to the perineum.
On the treatment of Goitre by the external application of Biniodide of Mercury. By Dr. Frodsham, Physician to the Farringdon General Dispensary.

Dr. Frodsham reports very favorably respecting this plan of treatment—a plan to which we have already directed attention ("Abstract," XXVI, 150), as having been carried out with marked benefit in India, by Capt. Cunningham, of the 11th Irregular Cavalry.

"I have myself," says our author, "had considerable opportunity of testing its efficacy, and always with a most fortunate result. A certain amount of difficulty is, however, experienced in its application, as the influence of the solar rays appears to be absolutely essential to its curative action, and therefore in this country it can only be adopted with perfect success during a few of the summer months.

The following is the plan I have invariably pursued with the patients under my care:

"An ointment of the biniodide (biniodide of mercury, sixteen grains; lard, one ounce) has been first rubbed into the swelling for several days. Then seizing the opportunity of a powerful mid-day sun, the patient has been exposed to its influence, the throat being thoroughly smeared with the same application, and the head well elevated. It is generally borne for upwards of an hour, when a severe sensation only of blistering is produced. The patient should then be allowed to return home, and cautioned not to rub off the ointment.

"Dr. Moreal suggested the application of artificial heat; and thinking it possibly might have a similar influence, though in a modified degree, I made several experiments, though, I regret to say, with but little success. In one case I caused the patient to sit before a large fire; in another, I held a hot flat-iron a short distance off the swelling. In the latter case, the pain was so great as to demand immediate discontinuance.

"Some of the cases in which this treatment was most eminently successful had been of long standing, and all the usual remedies, both internal and external had been tried in vain. One woman had suffered from the swelling for four years, and for upwards of one year had been taking the iodide of potassium internally, and applying the iodide of potassium ointment externally, but without deriving the slightest apparent benefit. The biniodide was only applied once; and before the expiration of a month a diminution of
two inches, by measurement, in the size of the tumor had taken place. At the end of six months no sign of the former disease was perceptible.

"The superiority of this mode of treatment consists in its great cleanliness, its not discoloring the skin, and causing no external breach of surface, together with its speedy remedial action (one application generally sufficing). As to the modus operandi, whether it is due to rapid absorption or to chemical changes, is, I believe, as yet undecided."

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**On Delirium Tremens.** By Dr. Jeffrey A. Marston, Assistant Surgeon, Royal Artillery, Maine.

The following paper by Dr. Marston is a most sensible one, and they who are now treating all cases of delirium tremens without alcohol will do well to consider it. Few are more strenuous advocates of total abstinence from all stimulants than ourselves in cases of health, but in certain diseases we have found it indispensable to carry the patient over certain periods of exhaustion. Dr. Marston says:

First of all, let us see that our terms are precise and clear. I would say that 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 e potu, or Delirium Ebrietas properly so called.

II. Delirium Ebriosorum.

III. Delirium complicated with

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\begin{align*}
\text{Renal} & \\
\text{Hepatic} & \\
\text{Gastro-Enteric} & \\
\text{Cardiac} & \\
\text{Central} &
\end{align*}
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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 24 or 48 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 drunks, in contrast distinction 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 who 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 drunks, 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 suddenness 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 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 disease 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 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, &c., 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 alco-
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Delirium 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 (toxaemia 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 medal.—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 learnt 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 5i of laudanum, but was sick, vomiting nearly it all; at 2 p. m.
he had some warm brandy and water, with 5js 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 apnæa. 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 defaulters' 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 ever having 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 epitomised 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
Delirium Tremens.

[April,

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, &c., (such as opium, betel nut, tobacco, cocoa, 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 effect 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 on 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 economises the food and tissues, by arresting the amount of secondary metamorphosis. Then we have the 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., aged 30, admitted June 8, 1858, from the guardroom, 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 unmistakeable delirium tremens. After the administration of a purgative and a saline antimonial mixture for twenty-four hours, without any amendment, opium in grain 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 bedside 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 guardroom. 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 recommenced, 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 und, excellent advice, the good effects of which are borne by actual experience.

Treatment.—The use of stimulants (alcoholic) in cases of delirium tremens with the view of removing the exhaustion, laying the morbid irritation, and procuring sleep, would be looked upon as even more wrongly directed. If theiology 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 that the presence of alcohol in the system is preventing—sleep.

G. M., aged 45, but grey, and looking much older, was admitted into hospital for some gastric disorder. This man, and had for years been, a very hard drinker, and his natures, particularly the nose, indicated “potations deep.”

The morning (after he had been in hospital for some days) 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 collision 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 bucket of cold water over the head, I took advantage of few moments of apparent consciousness to pour a glass of brandy and water into his stomach; and he recovered most immediately, so much so, that the medical officer, whose patient he was, could scarcely credit the state in which I found him.

G. P., aged 36, admitted April 14, 1858, from the guard, where he had been confined two days. His disease is unequivocally delirium tremens, and no remedial measures seemed to benefit him. He was tremulous, restless, lirious, and did not sleep even with the aid of the fresh administration of opiates. Two bottles of porter were given him bed-time, and he was observed to smoke during the day strong tobacco. His hands were so tremulous that the elderly had to hold the pipe in his mouth. By these means 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 re-establishment 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 cognisance. 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 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 embarrassed circulation exists, marked by venous congestion of the mucous membranes and duskeness 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.—**Edinburgh Monthly Journal**.
by producing asphyxia, into the thoracic cavity by its pressure producing collapse of the lungs, or when, by the long-continued exposure of a large amount of surface of any of the internal organs whose normal temperature is much above that of the atmosphere, it reduces it so as to produce a morbid action.

2d. That the division of entire ligaments about the joints, is not only no impediment to their ultimate strength but facilitate the cure by enabling the surgeon to open the affected part fully, for the purpose of applying medical substances to the articular surfaces when these are ulcerated or otherwise diseased.

3d. That the only true mode of treating ulceration of bone, however slight, within a joint, is to lay it open freely and apply remedial agents directly to the part affected.

4th. That opening the joints early in cases of matter burrowing in them is far more imperiously demanded than the opening of other parts thus affected, and the operation produces no further pain or inconvenience to the patient, in any respect, than when performed upon parts remote from the joints.

5th. That after opening a large joint, the knee, for instance, by an incision several inches long, the wound should be kept open by the introduction of lint or other similar substance until the parts within the articulation become healthy, and in all cases it should be made to heal by granulation.

6th. That extensive wounds opening freely the large joints, such as the knee, (even when lacerated as by a saw, which must necessarily heal by granulation) do not as often give rise to violent symptoms as very small wounds, such as are made by the corner of a hatchet, an adz, or a penknife, which heal on the outside by first intention.

7th. That there are no known limits beyond which a tendon or ligament will not be reproduced after division, provided the parts are made to heal by granulation, and that the present acknowledged rule of two inches being the maximus, distance in which the divided ends of a ligament to tendon can safely be separated, has not the least foundation in fact. Each of the above propositions has been fully tested by experience in numerous cases, which, during the course of this series of articles, shall be drawn upon as largely as brevity will admit.

Case 1st.—Mr. A. J., æt. 29, received a penknife wound
in the knee joint, immediately on the outer edge of the patella, which being small and causing little inconvenience, gave him no concern whatever.

The wound healed by first intention on the surface, and he continued his work as drayman as usual for two weeks, having not the least suspicion that mischief was brewing.

At the end of that time, however, the joint began to inflame, and shortly after attended with the most excruciating pain. The inflammatory action rapidly extending, the tissues of the whole joint were soon involved, and in a week more, when I was called, extensive fluctuation could be distinctly felt not only about the articulation, but in the lower part of the thigh. Chloroform and morphine had been used extensively, affording only temporary relief from the intense pain.

The case being a common one, I at once opened the joint freely by two incisions, eight inches long each, just back of the patella, on the internal and external side of the leg, which gave exit to nearly a quart of purulent matter, which was burrowing in the joint and lower part of the thigh. The smarting of the incisions had hardly subsided before the patient pronounced himself relieved, and the following night slept as well as if nothing had been the matter. The incisions were filled with lint, wet in an evaporating lotion composed of one part of alcohol and ten of water; a roller wet in the same was applied all over the limb as tightly as the patient could conveniently bear, commencing at the foot. About 24 oz. of spr. mindereri were given every 24 hours for the first three days, and an opiate administered occasionally.

On the fifth day, the wound being in a state of suppuration, the cold lotion was discontinued and poultices applied instead.

The roller was still continued upon the limb from the foot to the upper third of the thigh, a small opening simply being left at the most dependent portion of each incision. The poultices were applied outside of the roller.

The lint was permitted to remain in the wound for about two weeks, when it was removed. Tincture of iodine was applied every day all over the joint after suspending the use of the evaporating lotion.

A gentle motion was instituted about the tenth day, and kept up through the major part of convalescence, which lasted about nine weeks, when the patient was able to walk
comparatively well. He improved rapidly after that until recovery was complete, though the wound was not entirely cicatrized for over five months. Not the least immobility followed in this case, and the patient recovered completely in every respect.

Remarks.—In this case a single incision would doubtless have answered the purpose, though not so well as two. The true plan of operation in these cases is not only to discharge every drop of purulent matter that may be collected, but likewise prevent any more collecting; and free incisions kept well open until the parts inside become healthy, together with a roller tightly applied to the limb, are the means of securing this object. The operation is not a severe one when well performed, as it may be done safely with great rapidity.

The knee-joint is surrounded by a large number of tendons covered with sheaths lined by bursæ mucosa, which on being wounded are liable to cause the burrowing of purulent matter among the surrounding parts, and may thereby give rise to symptoms almost as violent as when the matter forms in the joint itself; and though not so apt to generate a disorganizing disease of the joint, still, if neglected, this often would occur, and it is difficult to ascertain before an operation whether matter has formed internal or external to the capsular ligament. In the treatment, however, it makes but little difference whether the capsular ligament contains the pus or not, so far as the operative procedure is concerned, because it is nearly the same in both cases.

The surgeon should be sure that he opens the parts to a sufficient extent to admit of the discharge of all the purulent matter that may be accumulated, and it is immaterial whether he involves the joint or not in the operation. It is necessary to keep the incisions well open, other matter might burrow still after the operation, and the worst consequences ensue.

To sum up, it is the accumulation of purulent matter that is to be prevented or removed in the treatment of injuries about the joints; and without this, all remedial measures will be abortive, and local, and constitutional symptoms of the highest grade will come on, jeopardizing the limb, if not the life of the patient.

When matter forms between the deep-seated facia and capsular ligament, involving the bursæ mucosa lining the
sheaths of tendon about the knee, the pain is almost as great as when within the capsular ligament.

The bursa mucosa being the same in structure as mucous membranes, are disposed to suppurate under slight inflammation; and being extensive here, pus is rapidly formed as soon as the parts are lighted up by inflammation.

Case 2d.—M. R. æt. 24, received a wound on the outer side of the knee by the corner of a sharp new hatchet, which gave exit to a drop or two of blood. The external wound was about half an inch in length, and as it gave him no pain, was not the source of the least anxiety, and the patient continued his employment of day laborer as usual for a week. At the end of that time the knee became painful, which induced him to go to bed. From this time on, for five days, when I was called, the pain he suffered was most agonizing. Finding fluctuation all over the knee, I at once made an incision seven inches long, which gave exit to more than a pint of purulent matter, and with it perfect relief. After the pus had been discharged it was found that the capsular ligament had not been opened, but that the pus had collected between it and the deep-seated fascia, which had not been freely opened by the knife.

After Treatment.—The after treatment was the same as in case first, excepting that the tincture of iodine was not used. Gentle motion was instituted, in about one week from the time of the operation, and continued more or less every day, until the patient recovered sufficiently to walk, which was seven weeks. He has since recovered perfectly, without the least weakness or immobility of the joints.

Remarks.—The incision was made on the outer side of the knee, which is the point of election in all cases where one incision only is made, for the better discharge of purulent matter in or about this joint, seeing that the patient nearly always wishes to take a position on his back, with the knees separated, and the diseased limb flexed, which brings the wound on the outside of the knee, in the most dependent position. Without giving this matter due consideration, I have occasionally operated differently, but seldom with entirely satisfactory results. In the next two articles I shall give cases of division and reproduction of the ligamentum patellæ.—American Medical Gazette.
New Experiment Regarding the Origin of Cow-Pox.

The opinion of Jenner regarding the origin of vaccinia, alternately supported and contradicted by various observations, is at present, at Toulouse, being tested by new experiments, of which, Dr. A. Fontan has given the following account, dated Toulouse, May 24th, 1860:

"A happy accident occasioned my passing through Toulouse at a time when a question of the highest importance was being submitted to experiment, I mean the question of the origin of vaccinia. The following is an abstract of the principal facts: Some weeks ago, M. Sarans, of Rieumes, observes that several mares brought back to his establishment for the second or third time, were affected with the grease (eaux-aux jambes.) There was a sort of epidemic of the affection, for nearly a hundred horses were found to be suffering from it. The variety of grease was the pustular form.

"One of these mares was taken to Toulouse to the veterinary school, where the learned Professor M. Lafosse recognised the true character of the epidemic. He inoculated with some of the matter of these pustules the teat of a cow, in the presence of his assistant and numerous pupils. Soon afterwards, fine pustules made their appearance on the udder of the cow. One of the most distinguished physicians of Toulouse, Dr. Cayrel, the official vaccinator of Toulouse, vaccinated with matter from the pustules of the cow, several infants who had never been vaccinated. Well characterized vaccine vesicles followed, presenting their pearly aspect, central depression, and rose-colored areola, increasing in size from day to day without any trace of erysipelatous inflammation.

A second cow was vaccinated with matter from the first cow, and infants were vaccinated with the matter from the second cow; the results were equally satisfactory as in the former case. At present they have arrived at the fourth vaccination from the first cow, and at the third from the second cow. I was present at this vaccination; the vesicles were very fine. One was photographed in my presence, with a tolerable satisfactory result. The vesicle presented the most characteristic appearance of vaccinia. When pricked, no purulent matter escaped, but gradually a serous fluid oozed out in great abundance, with which several infants were vaccinated."
"The new matter is very active, and succeeded in the case of a pupil of the veterinary school, vaccinated in infancy, and in whom all attempts at re-vaccination had failed. I saw a vesicle in an infant produced by the virus of this pupil, finer and more developed than three other vesicles produced by an ordinary vaccination in the same infant. (No doubt the two vaccinations were performed simultaneously.)

"Already thirty infants have been vaccinated at Toulouse. No unpleasant symptoms have manifested themselves in any ease; and in all, the result has been most satisfactory."

"Dr. Izarie, formerly vaccinator in Paris, considered the vesicles so good, that he had his son vaccinated this morning with virus from one of the infants."

"An official commission has been named by the Prefect to carry out these experiments. A report will be drawn up and communicated in due time.—Edin. Med. Jour.

A Treatise on a Chronal Law of the Pulse. By Alex. McBride, M. D., Beria, O.

In 1850, I treated more cases of bilious fever than any previous year. The cases were mostly in and about a marshy district. In the course of the season I observed that during the principal part of the fever the pulse was, in the men patients, at 96 per minute; in the women generally higher. This was so uniformly so as to attract my attention; and further observation through the season confirmed the fact that 96 in man and 108 in woman was the standard pulse of the season. In cases where there was gastro-enteria, or gastro-enteric irritation or inflammation, or other special irritation, superadded to the ordinary fever, the pulse rose to a higher point. I further observed, during the same season, that quinine would not interrupt the fever in man, unless the pulse was at or below 72, nor in woman till at or below 84. My observations this season, 1860, have confirmed, accurately, the above, having treated numerous cases of miasmatic fever.

Recently I was struck with the remarkable fact that those numbers which the pulse usually indicated were exact multiplies of 12, and that the stages of increase and diminution were 12; from which I conceived that there must be some exact law of gradation. I began, therefore, a
series of careful observations on the pulse of individuals in all conditions, both of health and disease, which resulted in a remarkable confirmation of the conception, and from which observations I deduce the following chronal law:

1st. The number of pulsations per minute in the adult man, in a state of health and repose of body and mind, are 60; of the adult woman, 72. There are a few exceptions, in which they will be found respectively 48 and 60. Both in sickness and health, the corresponding grade of woman’s pulse is twelve above man’s.

2nd. Uneasy attitudes, and various disturbing causes, vary these numbers. The pulse of men, generally, during business hours, and also of women, is often found from 12 to 36 above these numbers; but it is seldom found to remain long on any other point than one of the multiplies.

3d. The accidental variations from the multiplies of 12 are more common in ordinary health than in fever.

4th. In fever the pulse will always be found, when regular, at 72, 84, 108, 132, 144, 156; above which last point the patient will die, if a woman, and when above 144, if a man. In some exceptional cases the patient will die with pulse not above 108 up to the time of death, or until it is lost. In other cases the pulse will arise to 144 or 156, near the time of death, and then descend with some regularity till lost a short time before death.

5th. The pulse will be found at intermediate points for a brief period during the transit from one point to another, while the patient is under temporary excitement, either mental or physical; but under permanent or continued excitement it will settle on a regular point.

6th. The lowest grade of febrile pulse in man is 72, in women generally 84, except in some peculiar typhoid states, when it falls actually below standard. But it is questionable whether fever really exists in such a state.

7th. The pulse of children obeys the same law of gradation by 12, though it is often difficult to keep a child quiet long enough to make an accurate observation.

8th. There are some apparent and probably some real exceptions to these laws; but in by far the most cases, when a pulse is found to vary from these numbers it will settle to the grade above or below in a few minutes except regular sub-grades, which frequently continue longer.

9th. In persons in ordinary health there will be found more variation when hungry, when greatly fatigued, and
after a full meal, than at ordinary times. Excessive use of tobacco, and other causes which weaken or derange the nervous force, cause irregularity.

10th. A pulse of 84 or 96 is not of rare occurrence in persons of ordinary health, during business hours; 72 and 84 are the most common numbers during the day.

11th. In many cases, both in health and disease, the pulse will rapidly increase or diminish in frequency when first manipulated, and in some persons this irritability will continue several minutes, so that it will be found at any irregular point between the true point and the grade next above and below; but unless there is some peculiar state or disease, it will generally soon settle on a regular grade or sub-grade. The regular differences of number between lying, sitting and standing, are by grades and sub-grades depending upon the nerve force of the individual.

12th. There is a regular sub-gradation by six found in persons of ordinary health, while standing, sitting, etc., and in convalescents: these pulses of 54, 66, 78, 90, etc., but in most cases of short duration. There is also a more transient under sub-gradation—sixths and thirds of 12, which gives pulses of 58, 62, 64, 68, 70, etc., as high as 154; these are all more transient than the regular sub-gradation by 6.

Uneven numbers are of exceedingly rare occurrence. Pulses of the under sub-grades and uneven numbers may all properly be called transition pulses.

Remarks.—I think the reason we often have pulses reported at irregular numbers is, that they are not carefully counted long enough. Example: An error of counting of one in a quarter, or two in the half minute, gives an error of four in the minute; hence we get 64, 68, 76, 80, etc. An error of one in the minute gives 61, 70, 73, 83, etc., which must generally be erroneous. Another fruitful cause of error is the omission to notice the irregularity of the first ten or fifteen seconds.

Since discovering the facts of the above laws I have not seen much of continued fever; but what cases I have seen were confirmatory. Phthisis, and diseases of the heart, are obedient to the same laws, but for obvious reasons are more subject than fever to transient variation in time.

I think any one who has carefully observed in continued fever can call to mind particular cases in which the pulse remained for days at some of the numbers given above. The following observations will suggest some reasons why this
exact gradation has not been noted by many: Most physicians examine the pulse without counting by a watch; and many of those who do use a watch count only a minute, or a part of a minute, by which means it is impossible to arrive at accuracy. The other qualities of the pulse than its frequency convey different notions of frequency through the sense of touch, to wit: A very round and tolerably soft pulse, without jerk, bound or vibration, conveys the notion of unfrequency; a hard, jerking, bounding, or vibrating pulse conveys the notion of frequency. The particular mental or physical condition of the observer varies his perception of time, viz.: when one examines a pulse when drowsy, or just after rising from sleep, the pulse seem to him more frequent; when one is in a hurry it will seem slow, and the like. There is only one way to arrive at accuracy, and that is to carefully and for a length of time count by a watch.

The subject is so new that it would be premature for me to attempt many deductions at this time; but if these are found to be the real time laws of the pulse, the conclusion is obvious that important hints can be taken from them in diagnosis, prognosis, and treatment. I shall only venture the following:

**Deductions.**—I have already intimated that quinine operates as an antiperiodical when the pulse in the two sexes is at or below 72 and 84, which are the first fever grades; but I suppose if the pulse, during an intermission, were, in consequence of special excitement, at or above these numbers, the medicine would operate nevertheless. Let it be borne in mind that quinine is an anti-intermittent, and not an anti-remittent, and then it will be apparent why it operates with a pulse below the first four grades; it is simply because it is an intermission. Then, if this be true, we gain some light on the question of administering quinine in the various forms of continued fever, viz.: we need not give quinine in continued fever with a view to terminate directly the fever, because it is not intermittent. It is continued by some cause over which quinine has no direct control; and this we may know by observing the grade of pulse; and many will save, by observing the rule, a large amount of the medicine, as well as vexation. When we visit our fever patient, and find the pulse averaging below the grade on which it was stationary the previous day, we may rest assured that the fever is about abating on grade, at least; if we find it above
we are sure the fever is increasing by a regular amount. If our woman patient has a pulse of 108, we know that she is not more sick than the man with a pulse of 96. If the woman's pulse arises to 144, we do not conclude that she will certainly die; but if the man's pulse arises to that point, and above, we announce to his friends that they have no grounds of hope in the case. This at least is the general rule, and the exceptions are few.

I give below numerical statistics of observations with the prominent peculiarities of each case briefly noted. I give the particulars of such a large number of observations, so that it may be seen that I have not formed my conclusions from a partial or hasty view. While engaged in the observations, I have been careful to note all the cases carefully observed, as well as those which give regular grades and even numbers, as irregular and uneven numbers; and it will be seen, in nearly every case where there is an irregular number, that there was some reason for it. I have not noted the pulse of all the patients visited during the time, because I could not always have time and opportunity to carefully count the pulse long enough to get its true number. Those persons who were examined in ordinary health were sitting, unless otherwise noted; others were in bed, or sitting, as noted. My method of examination is to continue the observation in each case till the temporary excitement, if any exists, abates, and then count the beats from one to five or more minutes, and then immediately note down the result and the particulars of the case. In some cases the

Note.—I do not court controversy with those who talk of curing bilious fevers with quinine, or of breaking up terrible western fevers by giving the quinine in the high febrile stage: I merely say I cannot do it. I know very well that quinine may sometimes, during the paroxysm of an intermittent, and if he does not happen to vomit it up, take good effect during the intermission; but I never found it profitable to either the patient or myself to give it in that way. During one season I made numerous attempts to break up remitting bilious fever with the medicine, given both during the paroxysm and the remission; the result was that a good many doses were wasted by vomiting. I concluded that ipecac was a cheaper and better emetic than quinine, and so left off that kind of practice. However, in some cases of bilious fever, where the patient is comatose, with thick, yellow, brown, or black coat on the tongue, quinine will aid in changing the action.
first minutes gives as true an indication as longer time; but frequently it requires several minutes.

As it is the chronal law that I am aiming to demonstrate no attention has been paid in my notations to any other qualities of the pulse than its chronal qualities. In my note book the cases are nearly all more fully described than in the synopsis; but I deemed it more important to present a large number of cases than to present a few more fully described; for it is the numerical character aimed at solely, and the larger the number of cases presented the more nearly we approach the truth.

As my numbers and facts appear to me conclusive, it only remains for the reader to consider whether my observations have been carefully made and faithfully recorded and published; in proof of which I have nothing to offer but the facts as here stated, and leave it for each person interested to prove by his own observations, which he can do in a very few days, by careful observation.

There will be found a larger proportion of irregular pulses in the city than country, for very obvious reasons.

[Dr. McBride here adds a tabular statement of more than 100 observations of the pulse, giving in detail the occupation, age, condition of health or disease, etc., etc., of each individual. This table is of considerable length, and we take the liberty, with our press of matter, to crowd it out; remarking, however, that these observations in a remarkable degree confirm and justify the deductions of the essay. —Eds.]

There are carried out in the table 129 actual observations, which give: Regular multiples, 90; sub-grades, 8; irregular, 31. Total, 129. Proportion: $\frac{212}{129}$ regular, to 1 sub-grade and irregular.

With a view to further confirm or refute the principles declared in the chronal laws, I recently, in November, 1860, carefully made and noted 45 observations, not one of which was a regular fever; 5 were on a woman who had nearly died of menorrhagia; 3 on a boy with atonic hydrocephalus; several were upon persons drinking and smoking, some of whose pulses would of course be irregular; several upon persons who had come in from hard labor, riding, etc., in cold, windy weather; some hysterical, etc., etc. In nearly every irregular case there was some very obvious causes apparent. They resulted thus: Regular multiples from 60 to 132, 23; regular sub-grades from 54 to 114; 31,
irregular and under sub-grades from 56 to 98, 9—the multiples in this medley of cases being one more than half, and the irregular cases one-fifth of the whole. It will also be seen hereby that there are more irregular pulses at this season of the year than in the fever season.—Cincinnati Lancet & Observer.

Popliteal Aneurism Cured by Digital Compression. By George C. Blackman, M. D., Professor of Surgery in the Medical College of Ohio, Surgeon to the Commercial, St. John's, And St. Mary's Hospitals.

In June, 1859, I was consulted by Joseph Humbrick in reference to a large pulsating tumor in the left popliteal space. He was an American, and was 27 years of age. For some years he had been engaged in carting lumber, and consequently was often compelled to sustain heavy weights. He was not aware, however, that he had ever received any injury upon the part affected. About thirteen months before I saw him he suffered excruciating pain, which extended along the inner part of the thigh and calf of the leg as far as the heel. About three days afterwards he noticed a small pulsating tumor, about the size of a pigeon's egg, in the middle of the popliteal space. His case was regarded as acute rheumatism, and he was treated accordingly. The swelling continued to increase; and when I first saw him, on the 5th of June, it measured about four and a half inches in the axis of the limb, and five and a half in its transverse direction. It had a pyriform shape, the apex being above. For two months the pain had been severe; and at the time of his visit he was unable to extend his limbs completely.

Having noticed the favorable reports of cases which had been treated by the London surgeons by flexion, I determined to unite this to the combined method of compression, manipulation, and the internal administration of veratrum viride, which I had successfully employed in a case of femoral aneurism of large size. On the 7th of June, after having given four drops of Norwood's tincture, I broke up and dislodged some of the layers of fibrin in the sac, by means of pressure with my thumbs and fingers (Fergusson's manipulation); after this I applied a bandage, as recommended by Prof. Dudley of Lexington, in 1818. The foot and leg were bandaged from the toes to the inferior margin of the
aneurism, over which a compress was placed, and a still firmer one along the course of the femoral artery reaching to Pourpart’s ligament. These were covered by the bandage which extended to the groin. The leg was strongly flexed upon the thigh, and secured in that position. The only effect of the veratrum was to cause an intermission of the heart’s action every thirteenth beat. For an hour after the manipulation the pain was intense; but morphia, freely administered enabled him to pass a comfortable night. On the following day, however, the patient became exceedingly restless, and the compressor and bandage became deraged. After a week’s trial, Dudley’s dressing was abandoned and Petit’s tourniquet substituted. At the expiration of another week this was changed for Skey’s. At this time the tumor had diminished somewhat, but still pulsated strongly. Under the use of digitalis the patient’s pulse rose from 85 to 110, and it was discontinued. Compression was continued for another week, by the alternate use of the tourniquets above mentioned. The patient now left for his home in Newport, Ky., the tumor having diminished about one-third in size, but the pulsation being quite distinct.

On the 1st of July I requested my pupil, Mr. John Billings, and Mr. Charles Greenleaf, then a medical student, to go to the patient’s house and try digital compression at the groin. This was employed for three hours, when the pulsation entirely ceased.

On Monday last (February 4th, 1861,) the patient came before the class of the Medical College of Ohio, and declared that his left leg was as good as the right. The contracted and indurated aneurismal tumor can still be felt, by pulsation has never returned. It is a question whether this indurated mass will ever disappear; for M. Paget has reported an examination of a case fifty years after the cure by ligature—John Hunter’s fourth patient—and even after this long period a hard, olive-shaped mass still occupied the popliteal space.

Shortly after the treatment of the above case, a patient came under our care having an aneurism of the innominate of small size. Instead of ligating the subclavian and carotid on the distal side, I applied Bourgery’s tourniquet, or compressor, for the subclavian, while a truss was adjusted to the neck to compress the carotid. Veratrum in this case had a happy effect in moderating the force of the circulation; and with compression above mentioned, I succeeded
in producing a temporary consolidation of the aneurism. In a few hours, however, pulsation returned, and in the course of a few days it became again consolidated.

Thus alternating, matters progressed for several weeks, when, after trying digital compression for some hours, at several trials, it became evident that all our efforts were in vain. The patient left the country, the tumor constantly increasing; and in a few weeks more, after reaching and enormous size, it burst internally and suffocated the patient. A post mortem revealed an aneurism of the innominata, and the opening communicating with the sac was of large size.—Cincinnati Lancet & Observer.


From investigations, with a view of improving upon the old plan of management of the delivery of the placenta, Dr. Clay ascertained that a very simple sign existed, by which its separation, after the birth of the child, might be indicated, having tested it in upwards of nine hundred cases. Before dividing the umbilical cord he applies two ligatures. If the maternal part is now examined, it will be found in a flaccid condition, and almost free from blood; but after an interval of from one to three minutes, it will be found to have acquired specific weight, and that the vessels are more or less filled with blood. The one fact may be ascertained by poising the cord on the fingers; the other by slightly grasping the cord near the vagina, with the thumb and fore-finger of the left hand, and, with the right hand, suddenly compressing it, when a well-marked sense of fluctuation is perceived, a kind of resilience like that felt when an elastic tube filled with fluid is suddenly compressed. When the placenta is detached the cord loses its increased specific weight and the hydrostatic property just mentioned. This is so invariable, that the loss of the previously acquired hydrostatic properties of the cord after the birth of the child constitutes the sign of detachment.

The whole of the phenomena are manifested in three stages—flaccidity, repletion, flaccidity.

If the cord be tightly grasped by a spasm of the os, or by irregular contractions of the uterine muscles, the loss of the hy-
drostatic properties may for a short time be delayed. These signs are not, of course, equally marked in every case. When the uterus is flaccid, they are but slightly manifested, though perfectly reliable. When, on the other hand, the contraction is firm, the most inexperienced may detect them. In cases of partially adherent placenta, the disappearance of the hydrostatic properties, and the failure to deliver the placenta by the usual manipulations indicate the necessity for artificial detachment by introducing the hand. In twin cases, the signs persist till after the birth of the second child, except where the two placentas are present.

It sometimes occurs that the placenta is separated simultaneously with the birth of the child. Here the first series of phenomena are absent, and it may be generally effectuated with safety.

The practical value of these facts is obvious, as the placenta, when thus known to be separated, may be at once extracted. The prompt delivery of the placenta is very important, as the uterus then contracts more effectually, the risk of hemorrhage is not so great, and it may be fairly assumed that the convalescence is less protracted.

To inexperienced practitioners it might be a safe instruction to impart, not to interfere in the extraction of the placenta, so long as the hydrostatic properties herein defined are persistent.—Dub. Quar. Jour.

The action of Alcohol, Anæsthetics and the Carbonic Gases upon the Cerebro-Spinal Nervous System.

M. Lallemand read the following memoir containing his own views and those of MM. Perrin and Duroy upon the comparative action of alcohol, anaesthetics, and the carbonic gases, on the cerebro-spinal nervous system:

"When etherization was first discovered Flourens demonstrated that there are successive stages in the action of sulphuric ether and of chloroform upon the nervous centres, and that the sensibility and motive power of the spinal marrow are abolished by both of these agents—In repeating the experiments of Flourens we have studied the action of these substances in the same manner, and we have ascertained that while alcohol and amylene, like ether and chloroform, abolish the sensibility and motive power of the spinal cord, the inhalation of carbonic acid and carbonic oxide al-
ows these properties to be retained up to the moment of death in animals subjected to the influence of the two gases.

Action of Alcohol and Anaesthetic Agents.—Into the stomach of a dog of middle size we introduced 100 grammes of alcohol, at 21 degrees, diluted with an equal quantity of water, in three doses at intervals of fifteen minutes. One minute after the administration of the first dose the animal was in a state of complete intoxication. The limbs were flaccid, the skin had lost its sensitiveness, as had also the ball of the eyes; the pupils were dilated, the pulsations of the crural artery were 120, and the acts of respiration 22 in a minute. The posterior arches of the last three dorsal vertebrae were then elevated, and the spinal marrow was laid bare to the extent of about twenty-five centimetres. The posterior and anterior columns were pierced, and the posterior and anterior roots of a spinal nerve were seized and drawn out with the forceps. No sign of sensibility was elicited, and not the slightest muscular action. Four hours after the operation this lethargic condition gradually passed off; the tongue and jaws of the animal began to move, and the eyelids closed when the balls of the eyes were touched. Upon piercing the cord again the animal uttered moans, and the hinder limbs were convulsed. The dog was then strangled."

Experiments with chloroform, sulphuric ether and amylene, from which analogous results were obtained, are described, after which the authors of the memoir continued as follows:

"Thus the action of alcohol, chloroform, ether and amylene completely interrupts the sensibility and motive power of the spinal cord and nerves. We have also ascertained that by passing an electric current through the spinal marrow, when its action is thus suspended, its excitability may be aroused, and may be manifested by muscular action. We would add that the interrupted properties of the cord and nerves will reappear upon the cessation of the disturbing influence of the agents that have been administered.

Action of the Carbonic Gases—Carbonic Acid.—The posterior arches of the last two dorsal vertebrae of a large dog were removed, and the cord exposed to the extent of about three decimeters. The animal was then made to inhale carbonic acid mixed with a very small quantity of
At the end of 10 minutes it was entirely insensible and motionless, and the arterial blood had assumed the dark venous hue. The posterior columns of the cord and the posterior root of one of the nerves were then pierced with a pointed instrument, without producing any manifestation of feeling; but by puncturing the anterior root and the anterior columns, violent agitation of the hinder limbs was occasioned. The sciatic nerve being exposed and irritated, convulsive motions were excited in the muscles of the limb to which it was distributed. The muscular contractions produced by irritating the cord and nerves grew more and more feeble, but did not entirely cease until the animal expired.

Another experiment in which the oxide of carbon was used, gave results similar to those just described.

The preceding facts allow a very distinct line of demarkation to be drawn between alcohol and the anaesthetic agents—chloroform, ether and amylene on the one side, and the carbonic gases on the other—with respect to their physiological action.

I. Alcohol, chloroform, ether and amylene act primarily and directly on the nervous centres, in the substances of which they may accumulate.

II. The carbonic gases exert their primary and special influence on the blood; carbonic acid imparting the venous hue to the arterial blood, and carbonic oxide altering the condition and physiological properties of the blood corpuscles.

It seems difficult not to admit that the insensibility produced by inhalation of these gases is merely the secondary and consecutive effect of an alteration of the blood. It is known, in fact, that innervation is accomplished only under the physiological condition of the excitement of the nervous system by blood; and it is also known that when the blood cannot obtain a due supply of oxygen—as in asphyxia produced by a mechanical obstacle to respiration, or in croup—an anaesthetic condition supervenes betokening imminent danger, and, indeed, the speedy extinction of life.

Anaesthetic agents, then, depress the functions of the nervous system, and by their progressive action suspend the respiration; which is under the control of the medulla oblongata. They produce anaesthesia primarily, and asphyxia secondarily or indirectly.

Carbonic acid and carbonic oxide, on the other hand,
modify the properties of the blood—disqualify it for sustaining innervation, and thus produce asphyxia primarily, and anesthesia secondarily or indirectly.

Conclusions.—1. Alcohol, chloroform, ether and amylene act immediately upon the nervous system.

2. Carbonic acid and carbonic oxide act immediately upon the blood by modifying its properties; and it is by means of this modification of the blood that they produce insensibility. These substances then are only pseudo-anæsthetics.—Jour. des Connaissances Médicales.

Woorara in Epilepsy. By M. Thiercelin.

M. Thiercelin, struck by the counteraction of artificially-produced convulsions by woorara, has been led to administer the drug in the treatment of several convulsive diseases more especially epilepsy, and with most marked effect. Particulars of two cases of epilepsy, which had resisted a variety of previous treatment, were laid before the members of the Academy of Sciences at their last sitting. One of the subjects treated by woorara was a young man, aged 23. In him the disease was hereditary and congenital. The patient had passed 4 years at Charenton, and was accounted incurable. The number of attacks during the month amounted to 20, whereof the greater part was most severe. The second case was that of a girl of 17, a sufferer from epilepsy for 8 years past, and during the last 12 months subject to daily fits. Under the influence of the woorara, treatment, (the drug being applied daily in doses varying from half a grain to a grain to the suppurating surface of a blister,) the attacks diminished in frequency so considerably that in the first case they fell in number from 20 to 5 per month, and in the second, from 29 or 30 to 8. Not only did the frequency of the fits decrease, but a striking general improvement occurred in the health of both patients, and a marked diminution of the nervous irritability always accompanying epilepsy was also noticed. Unfortunately, the treatment could only be persisted in for 8 weeks, as the stock of woorara ran short; nevertheless, the results obtained were decidedly of a nature to encourage other practitioners in following in the footsteps of M. Thiercelin.—Lancet.
THE MEDICAL PROFESSION—ITS GRATUITIES.

This following paper has been in our hands for some time; but has escaped our notice till this late period. We deem the subject of calling the attention of the public to the unjust draft made on the Profession, of so much importance, and also for the able manner in which the grievance is presented, that we here make room in our editorial department for the Memorial of the Committee appointed by the Medical Association of Georgia:

To the Senate and House of Representatives of the State of Georgia:

MEMORIAL.

At the Annual Meeting of the Medical Association of the State of Georgia, assembled at Rome, April 11th, 1860, the following Resolutions were adopted, viz:

Resolved, That this Association Memorialize the Legislature of Georgia, to abolish the Professional Tax upon Physicians, and to urge the passage of an Act requiring the Inferior Court of each county to set apart such portion of the county tax as the Grand Jury shall recommend to purchase drugs for the use of the poor.

The undersigned were appointed a Committee to bring this matter before your honorable body.

In performing this duty we beg respectfully to submit a few reasons for this appeal to the Law Making Power.

It is a fact, apparent to every observing mind, that Medical men, far more than any other class of citizens, contribute gratuitously, their time, labor and money, to the relief of the indigent. And as it is the duty of the State authorities, and not of a particular class to bear the burden, these gratuitous services can be regarded in no other light than contributions to the State.

The per centage of population requiring these services is by no means inconsiderable. Taking the county of Floyd as an average county, observations have been made by which we are enabled, confidently, to assert
that the amount thus donated by medical men in Georgia, in the single article of quinine can scarcely fall short of

*Thirty Thousand Dollars per annum*, with a strong probability that it largely exceeds that amount.

If, in connection, with this startling fact we consider the value of the time and labor and other Medicine contributed, it is evident that the amount of this gratuitous outlay of physicians to the State is enormous. It is remarkable that the public, and especially the Legislature, has so little appreciation of the extent of these gratuitous labors of medical men. True it is that the Inferior Court, under existing laws, is required to provide for the poor, and the physician pays his part of the annual tax, levied for this purpose. But, whether from defects of law, or gross neglect of the Courts, it is well known that the instances in which the poor are thus provided for are very few, and the procuring of medical services and drugs do not seem to be regarded as belonging to their list of duties. Indeed, except in cases of *Lunacy*, or in extreme and rare instances of helplessness, where the subject has been entirely abandoned by his acquaintances, it is seldom that the Courts make any provision whatever. Yet even in these extreme cases, deserted by all, the physician alone is expected, without compensation or thanks, to give not only his personal attention, but his money, to the relief of the sufferer. At all seasons, in all kinds of weather, in the dark hours of night when others are asleep, the medical man passes from one scene of distress to another, bestowing his labor, risking his own health, and dispensing drugs to the indigent sick. To this course he is impelled by two powerful forces. The first and greatest is the demand of humanity, which to a conscientious man leaves often no alternative by which to escape the call. The second is the force of public sentiment which will not tolerate in the physician that freedom of action which it allows to others. The merchant may refuse credit to whom he chooses. The druggist may decline to sell to an insolvent customer and it is well, but the physician who exercises this liberty brings upon himself the severest censure, and consequent injury to his character and business.

To the many cases of casualty and death which occur in this fast age, a large proportion of which is amongst the poorer classes, the physician stands a ready servant, subject to every beck and call, and is expected and required to have in readiness all the appliances and material, at whatever cost—adapted to every emergency. By his promptness and benevolent agency he relieves large numbers, and oft times rescues them from impending death. When, under analagous circumstances, a party is snatched from a burning dwelling, or a watery grave the individual
who performs the deed is exalted into a hero. When a mariner rushes to the rescue of a distressed crew, he gains for himself Laurels of Praise and Medals of Honor. Not so the Physician. He is regarded as having discharged a mere common-place duty, and scarcely meets with a passing commendation. And such is the tyranny of custom and law, that if he fail to respond to every call, he encounters the indignant frown of the community, and failing from want of proper facilities or other cause to adopt the most scientific treatment he becomes liable to prosecution and heavy damages. Although medical men, as a class, are proverbially benevolent and kind, and are ever ready to heed the call of suffering humanity; and while they claim and desire no special exemption from the moral responsibilities and duties incident to their noble profession; yet-they feel that the public authorities can and ought to do more than is or has been done for the poor in this particular, and that they ought not to require the physicians services nor his drugs without compensation; much less to heighten the infliction by imposing a specific tax. If it be urged that a physician's profession is his capital and, therefore, ought to be taxed, we reply that it is taxed, and that heavily in the manner, and for the reasons above stated. The calls of humanity, and the necessities peculiar to the practice of the medical profession; the exposure, irregular hours, impairment of health, encountering contagious maladies and raging epidemics, witnessing painful scenes, suffering and death, and the moral and legal responsibilities incurred; all bear heavily upon the practitioner, and can find no adequate compensation, even though the tax were removed, and the ordinary fees allowed in all cases.

We, therefore, respectfully petition your Honorable body to abolish the specific tax, and extend such relief to the poor and the medical profession in the matter under consideration, as wisdom and justice may suggest to the patriotic Representatives of a great State. And we feel well assured that such legislation so obviously necessary, so manifestly just and proper, and so highly called for by the growing philanthropy and benevolence of the present age, cannot fail to meet the sanction of a liberal and enlightened constituency.

ROBT. C. WORD, M. D., Rome, Georgia.
ROBT. SOUTHGATE, M. D., Augusta, Georgia.
J. G. WESTMORELAND, M. D., Atlanta, "
S. W. BURNLEY, M. D., Forsyth, "
B. B. BROWN, M. D., Dalton, "

Committee.
ETHER VERSUS CHLOROFORM ET. AL.

Having received the following Circular, and seeing that it interests the whole Profession, we submit it to our readers in the hope that by so doing we may promote the laudable purpose of the learned Society at whose instance the appeal is made for facts tending to settle the question of the relative danger of some of the anaesthetics in most common use:

Boston, Massachusetts, U. S.

The question of the entire immunity from danger which is claimed for Anaesthesia produced by Ether, being still under discussion, the Boston Society for Medical Improvement has appointed the undersigned a Committee “to investigate the alleged deaths from the inhalation of Sulphuric Ether, and to report thereon,”

They would, therefore, request the Medical Profession, or any person into whose hands this may fall, to communicate to either of them such cases, coming within their observation as shall serve to this end; giving the place, time and circumstances of their occurrence, with the mode of inhalation adopted, and, especially, information in regard to the following points:

1st. The kind of Ether used, whether pure Sulphuric Ether, Chloric Ether, or Ether combined with Chloroform.

2d. The period after inhalation at which death occurred;—also any other facts which may enable them to form an opinion on the subject to their investigations.

Richard M. Hodges, M. D.
George Hayward, M. D.
Solomon D. Townsend, M. D.
Charles T. Jackson, M. D.
J. Baxter Upham, M. D.

February, 1861.

Have you known death to occur from the inhalation of pure Sulphuric Ether?

Where did this occur?

At what date?

For what purpose was Ether administered?

What method of inhalation was adopted?

What kind of Ether was used; was it pure Sulphuric Ether, Chloric Ether, or Ether combined with Chloroform?

At what period after the inhalation did death occur, and how did death take place?

Please state may other circumstances connected with the case.

(Signed)
ON DISEASES PECULIAR TO WOMEN,
Including Displacements of the Uterus. By Hugh L. Hodge, M. D.,
Prof. of Obstetrics and Diseases of Women and Children in the
Book-making is so often resorted to as a mere trade by persons of in-
experience, that we instinctively welcome the productions of those who,
like the author of the volume before us, bring forward the result of ex-
tensive observation, enlightened intellect and mature judgment. Zeal-
ously engaged in the practice of his profession in a large field for up-
wards of forty years, the unostentatious record of his final conclusions
must be of great value; and although he may sometimes differ from
those whose opportunities are equally advantageous, the student of truth
will thus, like the juror in a court of justice, have the benefit of argu-
ment upon both sides of difficult questions. In the author’s neat letter to
Prof. Meigs he says: “I know well that our productions—each charac-
teristic of its author—differ exceedingly in theory and in practice; but
nevertheless, the student who examines each book may discover the
truth more clearly, and be prepared to render such truth more efficient.
The very opposition, which may be perceived in the views of experienced
men in the profession, is often beneficial—ex collisione scintilla.”
Prof. Hodges’ work is divided into 3 parts; the 1st comprehending
the “Diseases of Irritation;” the 2d, “Displacements of the Uterus;”
and the 3d, the “Diseases of Sedation.” As the limits of this notice will
not permit any comments upon the special views of the author, we can
only indicate the scope of the work by a brief reference to its contents.
In Part 1 he treats of Nervous Irritations and its consequences; irri-
table uterus, its local and general symptoms, its progress and results, its
cause and pathology, its complications, and its treatment. Under the
head of Displacements of the Uterus, we find chapters devoted to the
anatomy of the pelvic organs, to the various displacements of the uterus
and their causes, to the symptoms of these displacements, and to their
treatment by hygienic and by mechanical means, of which latter he pre-
fers the “Lever pessaries,” designed by himself. The diseases of seda-
tion are disposed of in three chapters on sedation and its consequences,
sedation of the uterus, amenorrhœa, and diagnosis and treatment of seda-
tion of the uterus.
This volume is destined to take a conspicuous place among the most
valuable original contributions to American medical literature. We,
therefore, cheerfully recommend it to the attention of our readers.
THE BLOOD IN MANIA.

In England the investigations of W. C. Wood, M. D., as far as they go, indicate that there is a marked deficiency of fibrin during the period of maniacal excitement, and a correction of this deficiency during convalescence.

RESIGNATION OF PROF. MEIGS.

We learn that Dr. Charles D. Meigs has resigned the Professorship of Obstetrics, &c., he has so long filled with marked ability in the the Jefferson Medical College, Philadelphia. Professor M. is a Georgian by birth.

Hydrocyanate of Iron in Epilepsy.—The Cincinnati Lancet & Observer says: "Dr. G. S. Bailey, a retired physician of Iowa, states in a letter to the editor of the Journal of Materia Medica, that his only son after having been treated six years for epilepsy with every remedy that medical skill could suggest, without success, was finally cured with the hydrocyanate of iron, by Prof. D. L. McGugin of Keokuk. The formula employed corresponds with the one used by Dr, Treat (Cin. Lancet & Obs., June, 1860, p. 388); hydrocyanate of iron, one drachm; powder of valerian, two drachms; extract of Indian hemp, one drachm, being originally added by McGugin. Make into one hundred and twenty pills. One of them is to be taken three times a day, gradually increased to four.

How to Improve the Taste of Cod-Liver and Castor Oils.—The Louisville Medical News says: "Cod-liver or castor oil, shaken up with an equal volume of water distilled off the leaves of the wild cherry-tree, in a manner similar to that directed in Edinburgh or Dublin Pharmacopoeia for cherry laurel water, and left to rest forty-eight hours before separation, acquires by this simple operation an extremely sweet perfume and agreeable taste of almonds; the taste remains as long as the digestion lasts. Oil flavored in this way could be taken by many patients who reject it in its natural state. Castor oil is not affected in its purgative action by this process."

Criminal Insane.—A State Asylum for the Criminal Insane comprising 290 acres of land, and accommodations for 500 convicts, is about to be completed in England. The number of this class of persons has steadily increased for several years, until, at the beginning of the present year, not less than 731 were reported.—American Journal of Insanity.