The Treatment of Dysentery—A Clinical Lecture delivered at Jackson-Street Hospital. By Robert Campbell, A.M., M.D.; Demonstrator of Anatomy in the Medical College of Georgia.

"Pathology is only valuable when it has a tendency to the prevention, amelioration, or cure of disease, and the results of our most successful labors in this department are but nugatory, unless in them can be found, a clue to a more rational and, perfect management of the affections to which they refer."


Gentlemen:

In our recent consideration of the "Pathology of Dysentery," we attempted to present to you a brief analysis of the nature of that disease. We now propose to inquire as briefly, into the character of the remedial means and measures which are to be employed for the relief of that condition, and which must necessarily be derived from, and depend upon—as in the treatment of all diseases—a full appreciation of the ends to be attained, and a proper understanding of the qualities of the agents appropriate for their accomplishment.

Now, from the very naming of this disease, as well as from the foregoing pathological deductions, if they be just, you might almost sufficiently anticipate us in the recital of the measures to be adopted, as necessarily depending upon the application of the indications therein set forth, and which are to be fulfilled in the treatment; so much so as well nigh to render a farther discussion of the subject but a work of supererogation—were it not, that experience, the impartial teacher, is a better verifier of theo-
It will be perceived, that there are four important elementary conditions presented for our consideration in the study of this disease, which must be observed throughout, and also reconciled to each other's demands and from these four conditions arise the four indications of Treatment: they are—

First. The existence of Fever, dependent upon spinal disease, which confirms and enhances, at each return or exacerbation, all the other evils of the case. Hence prevent this fever.

Second. There is inflammation of a mucous membrane, requiring its own peculiar treatment.

Third. This mucous membrane lines the interior of an excretory canal—the seat of the inflammation—which must be kept open—it will not do to obstruct it; for besides the ordinary and necessary demands of health, that this prima via should be unencumbered, and which also has a tendency (notwithstanding all interposed efforts) to convey its contents onward to their exit—if, from any cause, the detritus of the process of digestion is detained within its calibre, it would become concrete and consolidated, and would act as an irritating body to the inflamed mucous lining—especially as every excited contraction of the muscular coat of this canal, would compress its inflamed lining, firmly against this resisting substance, where it would probably be held for some time, on account of the loss of normal tone in the mucous and muscular coats at this point, and would greatly enhance the difficulty—therefore prevent constipation.

Fourth. There is a state of Exhaustion or, more properly, Fatigue—Regular rest and resuscitation of strength are to be secured to the patient—by whatever means attainable, provided they can be reconciled to the three other obligations to be fulfilled—in order to indemnify his vital energies for the effect of the harassing influences preying upon them.

In answer to the First, it is of the last importance, during an intermission or remission, to stave off a return, or an exacerbation, of fever, with the well known specific, Quinine—that magnificent boon of Heaven to Earth. Quinine should be given unconditionally, and irrespectively of the other elements of treatment, at such time and in such quantity as will accord with the
typal arrangement and suit the degree of the fever. As some of you may not be acquainted with the mode of administering this medicine, we would say that, if the period of accession or increase of fever is distinct, 20 grs. of quinine should be given, to an adult, in four doses—5 grs. every two hours, commencing eight hours before the expected paroxysm, that the last dose may be taken at least two hours before its effect is required to be displayed, that each dose may be fully absorbed, and place the system decidedly in that condition which supplants or resists the invasion of fever. But should the paroxysmal character of the fever be more indistinct, or even so as not to be recognizable, commence at any stage of the case and give quinine, until its effect upon the patient is heralded in by the ringing of bells, so fortunately characteristic of its adequate exhibition; after which, continue to give it at longer intervals, just so as to keep up its influence; as indicated by the tinnitus aurium or "ringing in the ears," for several days if need be, that you may be sure of falling in with the paroxysmal period—though at some point in the mean time, your perseverance will be amply rewarded by a decided abatement, or an entire absence of fever, and the consequent diminution or discontinuance, even, of every other symptom. Many cases occur wherein, during the first paroxysm of fever, the dysenteric symptoms are very intense, but on the timely administration of quinine, a return of fever is prevented and there is no further trouble from the Dysentery.

As to the modus operandi of this agent, there are many who advocate the opinion of its sedative properties, ascribing all its powers to its quieting effect—the quality of inducing sedation; while as many, perhaps, are as confident in the opposite belief—viz., of its stimulating influence, (among whom are the Homœopathic,) attributing its virtues to the stimulation which they imagine it produces. Now, Gentlemen, while we may see excuses for the entertainment of either opinion, we think we have better grounds for deciding that neither is correct. Although, in explanation of our tolerance for the retainers of these opposite views, we will cite the evidences of two cases, which very recently came under our observation:—One, a case of Typhoid fever; the subject, a little boy, aged 5 years, wherein, always, when under the influence of quinine, the frequency of the pulse was twenty beats lower, than it was uniformly, when he had
taken none. This was tested satisfactorily by several trials, during his attack, which lasted about thirty days. The other, a little girl, about the same age, affected with Intermittent fever, with croupy symptoms, wherein, quinine, given during an intermission, induced a quick pulse, hot and dry skin, tenderness in the epigastric region, pain in the stomach, nausia and persistent vomiting—in fact, the whole assemblage of symptoms simulating gastritis, which condition generally follows the introduction of quinine into her stomach. The mother of this child has been affected with the most violent urticaria, accompanied with the semblance of intense fever, invariable, during the past three or four years, (but not before,) upon the ingestion of 5 grs. of quinine. Thus, it will be perceived that these phenomena resulted from the action of an irritant (in the latter cases) upon the stomach—the three cases cited, in our opinion, being instances of idiosyncrasy of constitution, or were dependent upon a—then existing—peculiar condition of the organism, giving rise to these extraordinary manifestations, as neither class of these results uniformly or commonly follows its exhibition, and yet it never fails in either case to prevent the recurrence of a paroxysm.

We would rather adopt the opinion, which attributes its efficacy to its power of disseminating or equalizing the nervous influence. And if we take into account the known effect of this agent upon enlarged spleen and such like engorgements, we might venture to suggest, that it is a disseminator or equalizer of the circulation, and acts by dispersing, wherever found, all vascular accumulations, possibly, by giving tone to the vascular tissue, and that it has control over the nervous system, under such circumstances, by dispersing such engorgements in its centres. Hence, in congestive fever affecting the brain, remarkable results have been often witnessed, from large doses of quinine, introduced into the rectum, during the existence of the coma.

And here we would remark, that it is difficult to convince or even argue with those who shrink from the administration of quinine in all cases of fever, where there are any "head symptoms" present—thus denying the patient, often, the only means of escape from their continuance and progression into other and far more serious and fatal results. Not to give quinine when there is congestion or inflammation of the brain, or its membranes, as well as in acute inflammation of any organ, ac-
accompanied with paroxysmal fever—and it is always paroxysmal, if it were but detected—is a prejudice, or an error, which is unpardonable, because of murderous consequence. When did quinine ever produce an inflammation, or increase it? For instance, in traumatic fever, which, in its sthenic form, belongs to the class of paroxysmal fevers,* we see, during the paroxysm, the wound presenting all the evidences of increased inflammatory action, but on the use of quinine, the paroxysm is prevented and the increased action is found to subside. We will say to such practitioners, with a distinguished writer, in speaking of some mooted point—"get first into the sphere of thought by which it is so much as possible to judge of this thing, otherwise than distractedly; we may then begin arguing with you!"

There is an observation which we think, at least, every Southern practitioner will bear us out in affirming. It is, in the 1st place, that commonly, quinine when given during an intermission or a remission of fever, prevents the return of the paroxysm: 2d, that in ordinary doses it will not reduce the fever after the paroxysm has begun; and 3rd, that if given in very large doses, during the paroxysm, it will often abate the fever, apparently by overwhelming it. Of course we refer to paroxysmal fever alone.

It hence does appear, that quinine, in any disease depending on spinal irritation, probably acts by dispersing the cause of that irritation, whether active or passive hyperemia in the spinal cord—and thereby relieves the general resultant condition. The explanation which we would offer for these phenomena is the following:

When quinine is given only during a paroxysm of fever, no opportunity is allowed for the display of its power over the distended, congested or excited vessels; for the universal vascular excitement which pervades the organism, with the heart's increased and more forcible action pumping the blood in upon these, already surcharged local vessels, and maintaining or increasing their derangement, the display of its powers is prevented, its effects are canceled. Hence, it is only during the absence of fever, unless extraordinary doses are employed, when

* See "Classification of Febrile Diseases," by their Relation to the Nervous System, in Introduction to volume on "The Secretory and Excrete-Secretory System." By Henry F. Campbell, M. D., just published.
it has not these opposing influences to contend with, that it readily overcomes the local condition, and thus suspends its symptomatic results.

So, may it be perceived, that in the treatment of Dysentery, quinine forms necessarily an essential element—we had almost said, without the single exception of a case—for in those instances unaccompanied with fever, if they do not yield promptly to that management, of which this does not constitute a part, we believe, that by acting upon the idea of its spinal basis, in accordance with our previous pathological suggestions, its addition to the course would be acknowledged the desideratum in almost every case.

We are aware that, as regards the employment of this agent unorthodoxly, or otherwise than for "chills and fevers," there is some opposition on the part of the community, who, consulting their own prejudices will, through intentional and covert neglect of the strictest injunctions, cause the failure of its object, to the serious detriment of the patient's safety and the physician's reputation. We know also—and the knowledge is humiliating in our climate, where almost all acute diseases appear to be impressed with the type of periodicity more or less decidedly—that there are members of our own profession, (charged as it is with so awful a responsibility—the arbitership of human life,) whose minds being impregnated with the spawn of that popular medical doctrine, above alluded to, or from some ill-begotten prejudice, or some ill-fated notion, legitimately inherited, perhaps, from some outlandish Alma Mater,—some we say, who look upon this invaluable and indispensable remedy, as "dangerous," something not far short of a poison, and therefore fail to see its applicability to disease, or use it so daintily, as not to allow themselves the opportunity of witnessing its efficacy; whilst the devoted patient, deluded and lulled by the semblance of a systematic course of attack being made upon the disease, is cheated by periodical gradations into irrevocable ruin—the malady still raging with increasing fury against him, with every reinforcement of its morbific armament—the returns of fever with the accompanying increase of all the other ills—derived from its cerebro-spinal ally—until life "is sunk amid its foes." Such is an unfortunate prejudice, and melancholy have been its results—for which the lives of many patients have doubtless been made to atone.
But what argument shall we employ against that stubborn stupidity which, in this late day, still questions the right of this agent to hold the rank it does in the Materia Medica; or what logic can avail to assure that doubting pusillanimity which yet does not dare, or affects to fear, to use this remedy in efficient quantity, after the mammoth, though innocuous doses, of Mailloit, of Dundas, and of others. Let such seek the first opportunity by experiment upon his fittest subject, to divest himself of so dangerous and criminal a delusion. Yes, let him take 40 grains of this poison at one dose, (as we had occasion to administer to a forlorn case of congestive fever, which actually recovered,) and if he does not die, he will be convinced of its harmlessness, but if he does—well then, his patients in this region will stand the better chance for living. We would not have you, Gentlemen, to understand us to recommend such doses in ordinary practice, as they are unnecessary; for remember, that the two cases, (both that of the doctor and that of the more pitiable patient,) here coupled, are of a desperate type.—But what we say is; GIVE QUININE IN DYSENTERY!

The most important and efficient adjuvant in the treatment of that element of the disease, embraced in the condition of the great nervous centre, is manifestly to be found in the application of revulsives along the spinal column; dry cupping and sinapisms, or if any portion of the cord is discovered to be decidedly irritable, by acute sensitiveness on pressure upon the corresponding spinous processes, it may be necessary to resort to vesication or to cupping with the abstraction of blood. We have known the whole aspect of affairs in a case, wherein uncontrollable tenesmus was a very threatening accompaniment, to be most astonishingly improved by the application of a blister to the lower part of the spine.

So much for the consideration of the remedial means, which are necessary for the relief of the cerebro-spinal ingredient of this disease; let us examine now into the demands of the other existing condition—that of the large intestine. These are comprised in the 2nd and 3rd indications, which may be treated of in connection—the latter being in this instance, involved in, and forming a necessary condition to, the former—that is, whilst the mucous membrane, here, requires the treatment appropriate to mucous membranes elsewhere,—here, it is besides
the lining of an excretory canal, which conveys a material of more or less solid consistence; therefore, it is also necessary to combine with that specific treatment, some peculiar method of procedure to prevent the irritation of the contained solid excrement, in its transit through the inflamed canal—since it must pass through; and this is best accomplished by reducing its consistency from a solid to a fluid state, preventing its accumulation and solidification, and also, by shielding the sore surface, if possible, with some emollient or soothing application. These two indications, then, together with derivative measures, comprise the treatment of the local or intestinal element of this disease.

Now, let us examine briefly into the rationality of a few of the most prominent among the various measures which have been proposed and are much practiced, for the relief of Dysentery, the accomplishment of which can alone be attained, we conceive, in accordance with the specifications just laid down, whatever be the means put into requisition, for their fulfillment.

The procedure which we have designated the "Opiate and Astringent routine," or the system of giving, indiscriminately, a specified quantity of some opiate and astringent compound, after each discharge, mistaking them for passages, in order more fully to clog up the bowels, cannot be too severely reprehended, as it is indicative of pure ignorance or an entire misapprehension of the nature of things, and is in this instance attended with no ordinary amount of pernicious result. For the administration of astringents, there can be found no shadow of excuse—their avowed attribute, being their capability of inducing, just that condition which already exists as the chief difficulty in Dysentery, and which should be one of the prime objects of the physician, speedily to overcome. But the demand for opiates, in view of their anodyne effect, is rather more plausible, as this disease is attended with much suffering, and the unwary and irresolute might perhaps be decoyed, through so urgent a plea, into disregarding the admonitions of his better judgment, for the sake of temporary respite, at the expense of radically increasing the difficulty, even to fatality, or delaying in so much, the fortunate termination of the case. This, Gentlemen, has reference to the error of giving opium systematically, as a part of the radical treatment of Dysentery, in the same manner that
diarrhoea is treated by it—and here let it be well understood, that with this object, opium is never indicated in this disease; because there is constipation already existing as an element of, and a very serious aggravation to it—and also as, very unfortunately, one of the most prominent effects of this agent, is to induce or increase that very same condition. But, although opiates are not admissible, as part and parcel of the regular treatment, yet there are frequent circumstances under which their pro re nata employment is demanded for another purpose—that of procuring rest and sleep, notwithstanding their very inconvenient and pernicious quality, here obtaining, of suspending the peristaltic action of the intestine, and thus increasing constipation; which effect has to be guarded against and overcome, by the unremitting pursuance of some procedure which will prevent or neutralize this deleterious influence, by keeping the bowels in a relaxed condition—that procedure, fortunately, being the proper and only appropriate treatment, under this head, for Dysentery, as has been indicated and will be further shown.

The secondary position assigned to this agent then, will be found to be in the fulfillment of another and far different indication; not in the treatment of the disease itself, but for the relief of some of the untoward evils consequent upon the disease, and will be noticed in its proper place. And it is to be esteemed a great misfortune, in reference to this class of remedies in this disease, that their valuable anodyne effects cannot be put in requisition, except at the expense of enhancing the diseased condition, through the consequent evil of their constipating effect. Hence, you perceive, that the "opiate and astringent" treatment is worse than no treatment in the end—that in fact, the disease demands the reverse interpretation, to what is here evident, as the basis of an opposite treatment.

The practice with Cold-water or other soothing enemata, cannot take the place of treatment in Dysentery, but is valuable as an adjuvant in some cases, to allay irritation. This subject has been treated of at length, by Dr. Brown of Alabama, who in regard to it, employs the following extravagant language, viz., "I will now briefly consider the superior advantages of the Cold Water Treatment, as pursued in the foregoing cases, and particularly its topical application by enemata. The immediate effect of its introduction is remarkable—the patient generally expressing
entire relief from the pain and burning sensation, which suspension of suffering lasts for a considerable time. Thus, in its *anodyne* effect, surpassing, by promptness and completeness, all the ordinary means. The nervous irritability which is excited in these cases, with nausea and intense thirst, especially in females, and the high febrile excitement, yield equally to its *sedative* and cooling effects. The *evacuant* and cleansing properties of the measure, are unsurpassed by purgatives, and without the danger of reducing the patient by hypercatharsis or interference with nutrition. While hydragogue cathartics may reduce the inflamed condition, by a draught upon the turgid vessels of the part—the cold application, by a more economical process, would suppress the inflammatory action, by contracting these distended vessels, driving out their superabundant blood, and fortifying them against a continuance of the phlogosis."

Dr. B. recommends two modes of applying cold water in Dysentery:—1st. By towels, wrung out of the coldest water, kept constantly to the abdomen, and renewed as often as they assume the temperature of the body; and, 2ndly, by the introduction into the bowel, with a syringe, of a pint of cold water, after each dejection. The suggestion is certainly a rational one, having afforded much comfort to the patient, under our own observation; and it is worthy of being borne in mind, to be brought into requisition, to quiet the excessive irritation in the bowel, inducing frequent tenesmus, as an accessory to the treatment of some cases, where there is present no contra-indication.

The *Mercurial* practice has been recommended according to two different modes of application, for the accomplishment of two distinct objects—viz: 1st. By the repetition of large doses of calomel or blue mass, for the purpose of effecting continuous mercurial purgation. 2nd. By the administration of small doses, combined perhaps with some opiate, Dover's powder most frequently, with the view of inducing ptyalism—on account of the supposed virtues of that condition, in controlling inflammation. Now, we conceive the wholesale administration of mercury, in any disease, to be an unnecessary and unwarrantable procedure—as also is the indiscriminate and unscrupulous subjection of the patient to its poisonous effects, in the employment of complete salivation, upon all occasions, as is common with some practitioners—small doses of calomel and Dover's powder seeming to
be their panacea for every diseased state, supplying with this convenient compound, the place, often, of diagnosis; and whether the patient suffers through the intentional design of his physician or his want of judgment as regards the danger of inducing that state, with this medicine, the injury is the same—it is mercurial salivation notwithstanding.

We would suggest to those who habitually give mercury, as a routine or mechanically, because they cannot interpret the manifestations of disease, that they might disguise their ignorance in some less hurtful manner—by giving bread-pills, for instance. And for those who wish to purge the patient in Dysentery, we would remind them, that they might employ some agent of equal or superior activity, which would not be obnoxious to the same objections, from untoward consequences, owing to the peculiar therapeutic properties of this article. Hear what Mr. Annesley says upon this subject in his *Sketches of the Diseases of India*—(He performed many experiments with the express object of testing the true operation of calomel)—he says, "These experiments presented uniform results, viz., that while the stomach and duodenum of dogs that had taken large doses of this preparation were much paler and less vascular than in ordinary circumstances, the *colon* and *rectum*, from the caecum to the verge of the anus, were most acutely inflamed, thereby explaining the results of clinical observation, namely, that although large doses of calomel calm those symptoms usually caused by increased vascular action, or inflammation of the mucous surface of the stomach and duodenum, they lower the vital energy of these important organs, and occasion tenesmus, griping pains in the course of the colon, mucous or bloody stools, hemorrhoids; and if persisted in, many more of the symptoms of Dysentery, or even structural change of the colon or rectum. I am confident that Dysentery becomes chronic; that an occasional indigestion lapses into a constant dyspepsia; and that habitual constipation often passes into strictures of the rectum, and hemorrhoids into fistulae, from the frequent exhibition of large doses of this medicine.* Ingenuity cannot devise a more successful method of converting a healthy person into a confirmed invalid, of destroying many of the comforts of existence, and of occasioning hypochondriasis and melancholy than the practice of prescribing large doses of calomel on every trifling occa-

* These italics are ours.
sion, or when the bowels require gentle assistance; or because the patient erroneously supposes himself to be _bilious_, or is told so by those who should know better. The unfortunate word ' _bilious_,' is the scape-goat of the ignorant."

As to the indispensableness of mercurialization for the cure of acute diseases, generally, the dogma has long since been exploded by the introduction of quinine into general use. And with special reference to this disease, it is satisfactorily evidenced that no additional benefit accrues to its employment. Dr. Bell remarks, that "As regards the use of mercury in Dysentery, it is mere empiricism to look to salivation, either as a necessary proof that enough of mercury has been administered, or as an indispensable means of curing the disease. Salivation is an occasional result to be deprecated and avoided rather than sought for."

Now, gentlemen, we would not be understood to wish to detract from this agent, a whit of its value and importance as a remedial means; but would claim for it, as such, an appropriate place, and for its use, a specific object, with due regard to its potency and its peculiar properties—and would have you recollect, that we only caution you against its _abuse_, the deplorable effects of which, there is much recorded testimony to establish.

Moreover, after all that has been said, should you ask us if we give mercury in Dysentery—we would answer, that we do give it; not in all cases, but in many—though, expressly, without either of the objects which we have been hitherto discussing. We use it but as an aid to the treatment—yet _not as a_ purgative, for our doses would be insufficient for that purpose: _not to salivate_, for it is given under such circumstances as would render such a result next to impossible. Formerly ptyalism was attributed to the patient’s taking cold, or drinking cold water after taking calomel; and doubtless many a poor victim has been goaded on his way and been initiated prematurely into the inconveniences of a _warmer climate_, by this merciless notion— "without one drop of water to cool his parched tongue." Fortunately, for the sake of humanity, this error has subsided, and it has now become an acknowledged fact, that mercury will not affect the system thus, except it be retained from want of action—unless this peculiar property should be determined by idiosyncrasy of constitution. We remember the case of a lady, of our acquaintance, who cannot take the slightest dose of any
of the preparations of mercury, although it be followed immediately by an active purgative, without suffering all the horrible realities of a complete salivation.

As was premised in our lecture upon the "Pathology of Dysentery," that, either as a co-incident event, or in consequence of the pyrexic condition which constitutes a part and parcel of this disease—the Liver, in some cases, is found to be in a state of disorder or inaction, as is manifested by the yellow, furred tongue, tenderness on pressure over the right hypochondriac region, and by the persistent stubbornness with which the bowels remain in a state of constipation—the retained scybala resisting their disintegration and dislodgment.

Now, it is well understood in Therapeutics, that the different elements of the Materia Medica are classified from the fact, that they are found to exert their specific agency upon different and particular organs. It is also well known, that among the effects of mercury, is its peculiar property of "stimulating the torpid liver into action;" and it is as well recognized in Physiology, that the product of this secerning organ, the bile, is the natural solvent of the heterogeneous residuum of digestion, the faeces, as well as the ordinary excitant of peristaltic action, and thus it has been styled "the natural laxative of the system."

Well, in such cases as are here indicated, and only in such, have we found it necessary to resort to the use of this agent. And we use it, not as constituting the basis of the treatment, as others do, but to counteract an embarrassment in the management of the disease, i.e., the co-incident or consequent derangement of an important organ, whose suspension in function materially interferes with the natural processes, which are ordinarily contributive to relief. With this view, we administer the mildest preparation, in small doses, and repeat them as seldom as the demands of the hepatic disorder will warrant. And we probably anticipate when we say, that in the appropriate treatment of the intestinal element of this disease, no opportunity is allowed for its retention in the system and the consequent effect of ptyalism.

The preparation which we prefer is the following:

\[ \text{B. Blue mass, } 3j. \]
\[ \text{Prepared chalk, } 3ij. \]

Triturate well together.

It forms a blue powder, very similar in physical properties to
the officinal hydragryrum cum cretâ, to which, we scarcely know why, (as they are almost identical in constitution); but, be it fancy or fact, the former seems much superior and more satisfactory, in many respects. And this is probably somewhat owing to the fact, that this preparation does not have the effect of sickening the stomach, so common to the officinal article. At any rate, the impression has weighed sufficiently with us, to have the effect, for many years past, of substituting the one for the other preparation, with children, as well as in all other cases, wherein its use was formerly indicated. Of this compound, we prescribe 10 grs. morning and night, or 20 grs. at night, as long as necessary, irrespective of the other means employed, for the purpose of acting upon the liver, and thereby operating upon the fecal mass contained in the intestinal canal, to effect its evacuation, and we give it with no other design, than thus to assist in the accomplishment of the THIRD indication of the treatment that we have already distinctly laid down, the requirements of which, being now under our consideration.

The Saline or purgative treatment, so strenuously advocated by MM. Bretonneau and Trousseau, is entitled to our consideration, as a practice now much in vogue, and which, it cannot be denied, is not without favorable evidence in the result of its operation in many cases.

This treatment originally consisted of one or two drachms of the sulphate of soda, dissolved in any vehicle and given in divided doses; and has been said "usually to arrest Dysentery in twelve, twenty-four, or forty-eight hours;" and that "any acute Dysentery which is not suppressed in this time by it, demands the closer attention of the physician, as presenting complications or being of extreme gravity." But this article has been replaced pretty generally, in our country, where there has been ample opportunity for testing the relative value of all the various practices ever recommended—and where, we must say, all the suggestions ever made, have had a full and thorough trial with various results—we say that this treatment has been superseded by the substitution of the sulphate of magnesia, used pretty much in the same way, as less liable to irritate the stomach and bowels. A tablespoonful of its saturated aqueous solution is given at various intervals to suit the exigencies of the case. The acidulated solution is sometimes used, prepared
according to the formula, and given as recommended by Dr. Henry of Dublin, viz.—"To seven ounces of a saturated aqueous solution of the salt, add an ounce of the diluted sulphuric acid of the Pharmacopoeias, and give a tablespoonful of the mixture for a dose, in a wineglassful of water."

Now, the action of these salts is similar, and their modus operandi and effect in Dysentery, precisely the same. That is, they deplete by producing watery stools, or by exciting from the mucous membrane of the small intestines, the exhalation or secretion of large quantities of serum, the fluid element of the blood—probably, through the agency of a species of irritation there determined, as the specific therapeutic property of this class of agents.

It presents itself to our mind in considering the applicability of this class of remedies to Dysentery, that they must act without any special reference to suitableness, or correspondence of their peculiar therapeutic properties, to this particular diseased state, as well as the ordinary and characteristic requirements of the organ and tissue affected, when used under the operation of this disease; and that the good they accomplish, whenever it is manifest, must be by virtue of their depleting properties, as well as that of revulsion or derivation, through the species of irritation which is engendered in one portion of the canal, deriving from that previously existing in another. They also have the effect, during their exhibition, of keeping the canal clear of solid material, thus, as long as their use is continued, placing out of the question the danger of irritation thereby, to the sore mucous lining of the faecal receptacle, the large intestine, which is the seat of the disease. But it is an observation which has probably presented itself to every practitioner, that as soon as the use of this class of purgatives is suspended, there is a proneness to constipation more determined than ever. Now, let us consider these effects, in relation to the case in question, and with reference to the physiological attributes of the organs involved, with their dependencies, as well as with reference to the natural proclivities of these organs under this condition of disease, which, you recollect, we endeavored to develop to you on a former occasion, when considering the Pathology of Dysentery. And reasoning upon these premises, it is evident, that those cases which are relieved—(and there are many, when they are treated
thus, in the inception of the attack)—are relieved by virtue of depletion, as would blood-letting relieve them, and often does. And here let us remark, as we may not recur to this subject, that there are cases which not only admit of depletion by hydragogue cathartics, but demand the use of the lancet—although these cases are rare. But when the symptoms are extremely violent in the onset of the attack, or where there is enteric hemorrhage threatening danger; or when, after the appropriate management of the two elements of this disease, the symptoms do not relax in violence, in a reasonable time—then may recourse be had to blood-letting for their abatement, as under the same circumstances in any other one of the phlegmasiae. And we would prefer depletion from the arm, in these rare cases of Dysentery, to depletion to any great extent, from the mucous lining of the small intestine—a surface continuous with, and connected to, the diseased membrane by nervous, reflex association, as we have endeavored to show—for the following reasons, which we may say are borne out by experience. In the first place, after a case has been relieved by the depletion of the saline treatment and the medicine is discontinued, the bowels become constipated, as is usual after the exhibition of these purgatives—the contained solid excrement passing over the recently sore surface, has a tendency to re-establish irritation from that point, restore the difficulty and "tear agape the healing wound afresh." And we believe that this is the explanation of the frequent relapses occurring in cases treated thus. And again, we have the phenomenon referred to, in the pathology of this disease, viz: that it has a tendency to run into diarrhoea, in the latter stages—the interpretation of which, you recollect, was by attributing it to reflected irritation, producing an excito-secretory result. Now, if this treatment—which operates by exciting irritation at this point, which point is also liable to reflected irritation—should be carried too far, or be continued too long, it must have the effect of predisposing or determining to a metastasis of excitement, or so derange the organization of the tissue, that when it does occur, as to render it incapable of recuperation, and the patient's strength and vitality must speedily be exhausted in the diarrhoea which supervenes. We have had the unenviable opportunity of witnessing two cases, which followed this course ad finem, through the patients' or their at-
tendants’ disobeying or mistaking instructions, and continuing the purgation too far. And since then, we must say, that as for ourselves, we have abandoned in toto the saline treatment of Dysentery, without the entertainment of a single regret for its banishment, for another—one by which the patients or their attendants can effect no serious injury by mistakes or disobedience of injunctions—and more especially without regret, as we have felt that its loss was more than recompensed in the adoption and amendment of a treatment of general applicability, and one more rationally satisfactory to our mind, inasmuch as it supplies fully, what we conceive to be, every demand for the relief of that condition of the organism, which we have endeavored to interpret to you—a remedy having none of its disadvantages, but more than its every advantage.

Although we have thus spoken of the Saline treatment, and of its rejection by us, for a better plan—yet in justice to the result of its action in many cases, and to the somewhat appropriateness of the rationale of its operation—in which, after all, there is more of the semblance of reason, than in the application of the various other practices, to which we have heretofore referred—we deem it but fair, before quitting the subject, to assign to this mode its proper place, in strict accordance with the consideration it deserves.

Then, we would say—that it is next in importance, and next in reason to that treatment, which it now remains for us to investigate, as supplying fully the requirements of the two indications under consideration: and well deserves to be borne in mind, as second to none other than the latter, in the earlier stages of the disease, when from any cause its practicability is impossible—yet its use should be always in subjection to the proper restrictions, that its dangers may not lurk, too long concealed, in its more deceptive advantages.

The appropriate Treatment of Dysentery will form the subject of another Lecture.
ARTICLE VI.

Notes to a Report on Diseases 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.

Note 1st.—Chlorate of Potash.

In the July number of the American Journal of the Medical Sciences, Dr. Bedford Brown of Caswell county, N. C., proposes chlorate of potash as an efficacious and certain remedy in the treatment of inflammation of the cervix and cervical canal. Dr. Brown says:

"The discovery of some simple and efficient means as a substitute for the uncertain astringent injections in common use, and the tedious and often unsuccessful caustic and speculum, would relieve the physician of an extremely disagreeable duty, and the patient of an almost intolerable necessity.

"In those cases of leucorrhoea attended with ulceration of the os uteri or cervical canal, and enlargement of the muciparous glands of the vagina, or simple ulceration without leucorrhoea, I believe the injections of the chlorate far more certain and efficient than the ordinary astringent injections, or the local application of caustic. In these cases I have not thought proper to give detailed reports of their symptoms and progress."

Since reading Dr. B.'s communication, I have several times prescribed the chlorate of potash, and intend to give it a fair trial; for if nearly as efficacious as he asserts, it would be a valuable addition to our resources in the management of those affections. But when Dr. B. speaks of "the tedious and often unsuccessful caustic and speculum;" he shows that he has not a thorough practical acquaintance with cauterization, or at least that he has not been sufficiently persevering in his employment of it: for if there be certainty in medicine, it is seen in the treatment of simple inflammation and ulceration of the cervix by caustics, when properly and perseveringly used; and although oftentimes tedious, it is less so than any plan hitherto devised. Chlorate of potash will probably succeed well in many of the lighter and more recent cases of inflammation of the cervix without or with
superficial abrasion, and it will I trust prove at least a more valuable adjuvant to caustics than other vaginal injections; but I would rejoice to find it prove as efficacious as nitrate of silver in the more inveterate and serious cases. It would indeed be a great benefaction both to patient and practitioner; and Dr. Brown should be justly regarded as a friend, not only to the ladies, but to his professional brethren.

My friend, Prof. Campbell, used chlorate of potash with bismuth with perfect success in a case of inflammation of the cervix and vagina, in the City Hospital. This patient had an extensive vesico-vaginal fistula, before operating for which, it was necessary to remove the inflammation. Dr. Campbell prescribed vaginal injections of this salt and subnitrate of bismuth, three times per day; at the end of a few weeks, he examined and found the inflammation had entirely disappeared. This patient, it is true, was favorably circumstanced for the success of any plan of treatment, but none could possibly have succeeded better.

Patients generally speak of it as pleasant in its effect; one patient, however, complained of its causing great pain. This was an elderly lady who had for some time complained of symptoms of prolapsus, for which astringent vaginal injections were prescribed; as she was not relieved, a digital examination was made, which detected moderate prolapsus, but nothing abnormal in the cervix except that the os was somewhat more patulous than usual. A globular pessary was inserted, which caused considerable pain and which she succeeded in removing herself: after which the chlorate of potash was prescribed and its administration followed by much pain, which is only explicable upon the supposition that in consequence of the patulousness of the os, it passed into the cavity of the body of the uterus. When this patient had used vaginal injections of cold water a few days, a specular examination was made; the cervix externally was perfectly healthy, but intense inflammation was observed extending from the os deep into the cervical canal. There was in this case a very unusual occurrence, a remarkable exemption from leucorrhœa, which induced me to suppose there could be very little, if any, inflammation, and therefore to defer so long the use of the speculum. In cases wherein there is much prolapsus with relaxation of the vagina, it is very doubtful whether injections of chlorate of potash will succeed as well as alum and
tannin in promoting the restoration of the uterus to its normal position.

Note 2nd.—Dr. Tyler Smith and Dr. Rigby.

In the first part of this Report the testimony of these gentlemen was said to be strongly in favor of the frequency of ulceration of the cervix: a little explanation may be proper. Dr. Tyler Smith certainly recognizes the frequent occurrence of ulceration, especially of the lighter grades—"epithelial abrasion and superficial ulceration"—but he considers it to depend on leucorrhœa and not to be a consequence of inflammation. He observes (page 92): "The loss of portions of epithelium, the first step towards ulceration, is so common in cases of confirmed leucorrhœa, that there must be some very frequent and simple cause which produces it, and it appears to me that it is far more reasonably accounted for by looking to the irritant discharges than in any other way." But for full confirmation, we would refer to the whole of the fifth chapter in his able treatise on leucorrhœa.

Dr. Rigby, employing the term in its most restricted sense, excluding all except deep ulcers, does say, (page 105,) "Ulceration of the os and cervix uteri, not connected with malignant disease of the uterus, is, in fact, a rare affection." But from the following paragraphs (page 94), and other passages in his work on Diseases of Women, he plainly admits the frequency of inflammation of the cervix, and what Dr. Bennet and others consider, and very properly, lighter degrees of ulceration.

"The female generative organs, situated at the lower part of the trunk, supporting the chief weight and pressure of the intestines, and subject to such great periodic alterations of vascularity, not to mention the wonderful changes they undergo during pregnancy and parturition, are rendered peculiarly disposed to be affected by any morbid action which may occur, especially in the great machinery of the chylopoietic system, and liable to be fixed upon in the various blood diseases, on which to localize their energy and expend their virulence.

"It will therefore be seen that there are few affections of the general health in a female, in which the generative system is not more or less involved; and although these local affections, which in the first instance are mostly effects of deranged health, react
and produce in their turn considerable sympathetic derangement, yet it must be borne in mind that, unless a distinct local cause be present, they must be looked upon as "the local manifestations of a general derangement, in order that we may form correct and rational ideas respecting their nature and treatment.

"Inflammation of the os and cervix uteri seldom occurs as an acute affection, but, in far the majority of cases, in a subacute or chronic form."

It is true, he regards them as most frequently secondary or sympathetic affections, depending on the state of the general system, disappearing and reappearing as the patient's health improves or declines, for he says, (page 103):

"Allowing for the difference of position, &c., I would say that the os uteri presents as great a variety and frequent change of appearance as the tongue and throat do; and I, moreover, feel convinced, that if these parts could be as readily inspected, experience would soon enable us to recognize the appearances which they present as indications of the state of the patient's health—much as we are accustomed to do in examining those presented by the tongue."

How this may be when these affectionous are recent and slight, I do not know; nor can I conceive how Dr. Rigby has arrived at this conclusion; for when sufficiently intense to indicate and justify a specular examination, they have been found remarkably persistent, varying very little, until they have been properly treated; after which I have never known a case relapse. My experience cannot recall a single instance in which a patient, after having been cured, has had a return of the disease; although suffering once does not afford any immunity for the future.

Dr. Bennet says, (page 277,) "Since I have made it a rule minutely to investigate the state of the cavity of the cervix, and never to dismiss a patient so long as there is the slightest vestige of disease remaining, I am much longer in curing my patients, but when they are once cured, I never have any relapse of the ulcerous disease. The relapses which I formerly used continuously to witness in the practice of the French surgeons, were clearly owing to the disease not being followed into the interior of the cervical canal, and thus not being entirely eradicated."

From the very first, in employing caustic, I have adopted this
rule with respect to the cervical canal, and therefore I do not remember ever to have had a relapse.

Dr. Rigby says, "Inflammation of the os and cervix seldom occurs as an acute affection, but in far the majority of cases, in a subacute or chronic form." Is it usual for chronic affections to present great variety and frequent change of appearance?

**Note 3rd.—Repetition of Caustics.**

It is very important not to repeat caustic applications too often—once weekly is often enough: every sixth day is the shortest interval admissible. The eschar does not always fall off in a week. After several applications have been made, from four to six, it is advisable to allow a period of two or three weeks to intervene, that the effect of the caustic passing entirely off, the real amount of improvement may appear. If the cauterizations be kept up without intermission, it would be impossible to determine when the patient was cured. A physician expressed his surprise, that although he had cauterized the cervix every other day for a considerable time, he had not succeeded in curing his patient—he was advised to stop and give her an opportunity to get well. In another, cauterization was repeated weekly for a year: if curable, she ought to have been cured in less time, and with fewer applications.

Cauterization ought not to be too often repeated, or too long continued. Few cases require more than from five to ten applications. I have known four to suffice, and two, even one, to do much good; though sometimes from fifteen to twenty have been required.

**Note 4th.—"Dishonest Use of Caustics."**

Among the causes of inflammation of the cervix, Dr. Rigby mentions what he terms the "dishonest use of caustics," a favorite phrase which he uses several times, and which savours more of sensoriousness than of sense. That the injudicious use of caustics may keep up inflammation, or may cause it, when through error unnecessarily applied, is highly probable—all are liable to make mistakes, especially the young and inexperienced; but I cannot comprehend what he means by "dishonest:" certainly an unscrupulous money-loving physician can charge what he pleases for his advice and visits, without resorting to means so
unpleasant to practitioner as well as patient; most assuredly physicians of the great metropolis, Dr. Rigby's confrères, must have much less repugnance to making such examinations and manipulations, unnecessarily, than physicians in this latitude, who are much more apt to neglect them when proper.

According to my experience, patients are much more profitable, when treated without caustics; for if relieved at all, they are constantly relapsing and requiring professional assistance. But it is to be hoped no one would, for an instant, be so uncharitable as to suppose that those gentlemen, who adopt such practice, are actuated by a love of lucre. However erroneous their views, it is presumed they do what they conscientiously believe best for their patients.

Note 5th. — Effects of Nitrate of Silver in Overcoming Sterility.

Dr. Tyler Smith says, in reference to his 35th case, (page 164,)
"In this case, as in several others, I attributed the result of pregnancy to the application of the nitrate of silver. On both occasions the patient became pregnant after a free use of this application immediately before the catamenial period. It appears as though the application of the solid nitrate of silver is either followed in a few days by a healthy secretion from the surface to which it is applied, or the irritating discharges are neutralized by its use. Of its influence in removing sterility in leucorrhœa I have had many examples. Some cases of this kind which I have seen in consultation with Mr. Guthrie, and Mr. Walter Bryant in particular, leave no doubt upon my mind of the effects of this remedy, in cases where the disordered condition of the secretions of the os and cervix is the cause of sterility." This accords with my own observation, for in a review of cases treated by nitrate of silver, as very frequent consequences, are observed conception in patients previously sterile, and fortunate gestation in those previously subject to repeated abortions. Its influence in removing sterility probably depends on its curing the leucorrhœa, which usually attends and which in many instances is doubtless the principal obstacle to conception. It prevents abortion, by removing the inflammation and restoring the natural condition and healthy action of the cervix in which resides the retentive power of the uterus in gestation.
Many cases might be adduced in illustration: very few may suffice.

Mrs. ——, from Carolina, had been married 3 or 4 years, and was in wretched health as long. She had been under the care of a number of eminent physicians and had undergone a variety of treatment for various diseases, but as the true pathology of the case was overlooked no relief was experienced. This lady suffered so many severe local and constitutional symptoms that life had almost become a burden, and she had very little hope of ever being restored to health. Upon careful investigation, she was found to have prolapsus, with inflammation of the cervix and cervical canal, to which I thought all her sufferings were fairly referrible, that this was probably the primary affection and the others secondary and sympathetic. The local affection was treated by cauterization with nitrate of silver and astringent vaginal injections. The principal constitutional remedies employed were preparations of iodine and iron and other tonics. Very many intercurrent symptoms and sympathetic affections were met by such medicines, as were severally indicated for them; these were indeed so numerous that it would be tiresome to attempt to particularize. The treatment of this case, local and general, extended over more than two years. The first cauterization was on the 3rd of March, 1853, and the last on the 24th November of the same year—sixteen in all, through a space of nine months; few cases have ever required as many; but after all traces of uterine inflammation had disappeared, she was under prescription for the secondary affections during the whole of the following year.

It often happens, when cases have been of long standing, that the secondary affections do not subside for a long time, and not unfrequently demand considerable treatment.

Fewer cauterizations, perhaps, might have sufficed, if they could have been made with more regularity, but as this lady lived at a distance, they were frequently unavoidably deferred too long.

After all traces of inflammation had been removed and leucorrhoea had entirely ceased, this patient was subject to menorrhagia at nearly every menstrual period until June, 1855, when she became pregnant, and in the following April gave birth to a fine little daughter, since which Mrs. —— has generally enjoyed
very good health. And thus a most amiable and excellent couple were rendered as happy as they well could be, who before were perhaps equally miserable—the husband from sympathy with his wife in her sufferings, and she, perhaps, less from her own sufferings than from the distress they caused him. Last October this lady was in Augusta, looking as young, and more blooming and happy than previous to her marriage, five years before.

This case exemplifies the happy effects of the most patient perseverance under the most adverse and discouraging circumstances. It required a longer course of treatment than any I have ever attended. Had this lady not possessed and exercised the most indomitable patience, she would have given up in utter hopelessness, long before a cure was accomplished.

Some two years past, a Scotch lady about 30 years of age, some years married, consulted me occasionally for leucorrhoea, for which I prescribed medical treatment and vaginal injections. In 1855 she had an alarming hemorrhage from the womb, which might probably have depended upon an early abortion, but no embryo or ovum was discovered. She had another excessive hemorrhage Nov. 12th, 1856—no embryo or ovum being seen. Vaginal examination detected very considerable enlargement and congestion of the uterus, but no evidence of pregnancy.

She was informed that she probably had inflammation or ulceration of the neck of her womb, and that as soon as she had recovered sufficiently from the effects of the hemorrhage, she ought to submit to specular examination, by which alone it could with certainty be determined. On the 29th of the same month, the speculum revealed a deep pus-secreting ulcer, extending from the anterior lip into the cervical canal, which was freely cauterized by nitrate of silver. Chalybeate tonics and astringent vaginal injections were also prescribed. Caustic was applied again on the 12th and 27th of December and on the 10th and 27th of the following February—in all, five times. At the last examination, in February, there was great improvement. Having called two or three times afterwards, without finding her at home, and for a long time not having heard from her, I lost sight of the case, supposing that, tired of this treatment, she had sought assistance elsewhere.

But, to my surprise, in August she called to inform me that
since I saw her last, not only the whites, but "the reds," too, had ceased, that she had no discharge at all for some months—remarkable, with perfect artlessness, what alarmed her most was a large lump in the lower part of her stomach, and that her principal distress was being very sick to her stomach, especially of mornings. Her gloomy apprehensions were very easily and pleasantly dispelled by assuring her that the tumor was perfectly natural, and that she was just "as ladies wish to be who love their lords."

This worthy lady and her kind husband were made perfectly happy in December by the birth of a little daughter.

This case is remarkable for such happy results, from so comparatively small an amount of treatment—affording great encouragement to patients whose circumstances may not admit of regular systematic treatment.

A lady, twenty-two years of age, who had been married about two years, during which time she had one premature birth, came from Muscogee county, and remained in Augusta five weeks. She had been suffering since her labor, some nine months before, with the usual functional symptoms of prolapsus and inflammation of the cervix, which were verified by digital and instrumental examination. Nitrate of silver was applied four times; first, on the 28th day of January, 1854—on the 8th and 22nd of February, and on the 4th of March; in a few days after which she returned home, with a silver-gilt globular pessary.

Some six months after her return, I heard from her friends that she was enjoying good health, with good prospects ahead, which were in due process of time happily realized.

This patient also used astringent vaginal injections. As she was very feeble, thin and pale, chalybeate and other tonics were prescribed. She suffered exceedingly from vesical irritation, for the relief of which she took a comp. syrup of buchu, uva ursi, &c., with very good effect.

The medical treatment was continued some time after her return home.

This case is remarkable for the promptness of its recovery from such a distressing state.

Many more cases might be adduced, but it would be unnecessary and tiresome; for to me nothing appears more dull and uninteresting than a narration of many cases substantially the
The general rule has been, that married ladies, during the reproductive age, have borne children after having undergone treatment by nitrate of silver for inflammation or ulceration of the cervix: there are, however, some exceptions; many of these, we believe, are due to displacements, such as retroflexion, retroversion, &c., which sometimes persist after recovery, and are not easily corrected.

Note 6th.—The Speculum.

Whilst it must be acceded that the speculum, like every other valuable medical or surgical means, has been abused by being employed in cases to which it is not applicable—in which it could neither throw light on the pathology, nor prove of any benefit in the treatment. But attempts have been made to throw unjust and undeserved obloquy upon its use, by some from whom better things might have been expected: As an instance in point; Dr. Robert Lee makes the following illiberal and ill-natured remark:—"The speculum emanates from the syphilitic wards of the hospitals at Paris, and it would have been better for the women of England, had its use been confined to those institutions."

It is true, that all of the most important discoveries in pathology, and valuable improvements in practice, have not resulted from experiments and investigations made in the Parisian hospitals; but if physicians, from pride or prejudice, were to ignore or repudiate all that has emanated from that same source, who could calculate the immense loss to science and to humanity?

Admitting, for argument, that the speculum emanates from the venereal wards of Parisian hospitals—does not Providence often bring good out of evil? And on whom could it be more justifiable to make investigations and experiments, that might redound to the benefit of the good and virtuous, than on the vicious and profligate of the same sex?

There is no doubt but that the speculum has often been misused—that is, applied in cases wherein no knowledge could be obtained or benefit secured, as, for example, in some cases of large polypi and other tumors, and of cancer, especially when far advanced, and in the various displacements and malpositions of the uterus.

But the speculum frequently reveals much important informa-
tion, which cannot be obtained by the finger alone. Many morbid changes which are not palpable to the touch are easily detected by the eye.

Dr. Churchill (page 29, Dr. Condie’s edition) makes the following very sensible remarks in reference to the employment of the speculum:

“It enables us to ascertain accurately the length and thickness of the cervix uteri, to detect variations from the natural color of the mucous membranes, slight erosions which might be passed over by the finger, elevations on the cervix uteri or walls of the vagina, too little raised to impress the sense of touch; small vesicular polypi within the os uteri, eruptions upon the cervix, and we are enabled to discover the color of the surface of an ulcer. It will also confirm many characters recognized by the touch. On the other hand, we must be careful that we do not mistake for morbid changes those appearances which are caused by the instrument itself. For instance, pressure on the outer end of the instrument may change the elevation and position of the uterus, and produce swelling and puffiness of the cervix. There can be no doubt of the great value of the speculum, both for the detection of disease, and the application of remedies; but it is possible that injury, beyond the violation of delicacy, may be occasioned by it. It should never be used, if it be possible to avoid it, in virgins; or when there is any alteration of tissue, involving its greater liability to laceration, and as rarely as possible with nervous women.”

Dr. Churchill has omitted inflammation and ulceration extending into the cervical canal, which are of very frequent occurrence, and, generally at least, are not at all discoverable by the finger.

His caution against mistaking “for morbid changes appearances caused by the instrument,” is very well timed and judicious, especially in using Ricord’s four-branch speculum, which he recommends very highly and which formerly I employed much oftener than any other. This speculum possesses the advantages of being very easily introduced when the blades are closed, and of giving a good view by the separation of the blades in the vagina, but it is perhaps more liable than any other, in expanding, to give pain, and by irritating the vagina and cervix to cause temporary discolora-
tions, which might deceive the unpractised eye and possibly mislead the more experienced. Another great objection is that if necessary to change its position at all, it must be withdrawn and re-introduced, for otherwise the expanded blades could not fail to irritate and cause pain: it is also very apt to give pain in being withdrawn; unless closed with great care, the extremities of the blades will almost certainly irritate, and if not withdrawn gradually and cautiously while closing, the mucous membrane of the vagina will be pinched.

Having tried and rejected a large number of complicated and expensive specula, I now decidedly prefer the glass mirror speculum, in general at least, to all others. Although it has no obturator, by introducing the projecting lip first carefully, and pressing it gently backward against the perineum, it may be introduced almost if not quite as easily as the bivalve or quadrivalve with the obturator; and then it may be moved freely in any direction after its introduction so as to bring the os and cervix in view, if needs be to hook them up and bring them forward, when, as often found, inclined too far back to be readily seen.

Much has been said against the speculum on the score of delicacy; but I cannot perceive that it is any more indelicate to make a specular than a digital examination; it is the necessity of the case that renders either proper, and I do believe a truly sensible and delicate lady would submit to the one as readily as the other—indeed, were it not that a digital examination almost necessarily precedes the introduction of the speculum, the specular would involve less indelicacy than the other; for example—were it practicable for the speculum to be introduced without the intervention of the physician, as I have known, in a few instances, by the patient herself, or a female friend, and the physician only required to look through it and, if necessary, make an application, would it not wound her delicacy less than a digital examination? It is said that it involves more exposure, but this is not necessary; for it certainly can, by proper care, and ought always to be avoided.

When the speculum gives much pain, its use ought to be deferred, until the patient is better prepared for it, by soothing and sedative vaginal injections. I cannot conceive that any injury can result from the speculum, when used with proper care
and caution, and under circumstances to indicate and warrant its application.

Dr. Churchill says, "it should never be used, in virgins, if it be possible to avoid it," that is, if at all compatible with the proper treatment of their diseases, and the same may be said in reference to all; but besides the greater physical difficulty and liability to inflict pain and injury, it is proper, on other considerations, to defer it longer in the former, and wait until the necessity is great indeed.

But when there is truly a necessity for a specular examination in virgins, the physical obstacle is generally not so great as the objection we naturally feel to subject them to any such investigations; for the long continuance of uterine disease has the effect of so relaxing and dilating the vagina, that an examination is attended with comparatively little difficulty. A respectable young lady had, at 13 years of age, about the time of the first eruption of the menses, been thrown from a horse with great violence, alighting on her pelvis, ever since which, she had been subject to symptoms of prolapsus. When examined at 17, her womb was very much hypertrophied, and at the orifice of the vagina which was so relaxed, that almost any speculum could be introduced with ease.

On a distant visit, in 1856, I was requested to see a married lady, about 20 years of age, who had a decided procidentia, the uterus projecting about two inches beyond the vulva: she and her mother told me, she had had this affection five years before her marriage, which had taken place a few months before I saw her. She was of very respectable family, and of unimpeachable character.

These are indeed extreme cases, but more or less relaxation always results from uterine disease of long standing. In any case wherein it may be at all proper to make a specular examination, Whitehead's bivalve speculum may be used with safety.

As respects the position; in many cases, it answers very well to have the patient on her back, or on her side, with the pelvis near the edge of the bed; but very frequently there is a great advantage in having the patient on her knees and elbows, as recently advised by Dr. Churchill, and many years ago by Professor Antony. In this position, with the thorax lower than the
pelvis, gravity causes the womb to pass from the floor of the pelvis toward the abdominal strait, elongating the vagina to its full extent, so that, if not shortened by the long existence of prolapsus, the os will be about the centre of the pelvis, and there will be ample room to inspect the whole subvaginal portion, and to make a satisfactory application to any part of it; whereas, when the patient is on her back or side, situated, as the womb often is, low down and in the axis of the superior strait, the speculum passing in the direction of the axis of the inferior strait, they necessarily meet at such an angle that it is often impossible to obtain a good view of the os, or to insert a piece of caustic into the cervical canal. When the uterus has approached so near the vulva, as to have necessarily changed its direction from the axis of the brim to that of the outlet, it is of course most easily inspected while the patient is on her back or side.

The position of the uterus in the pelvis and the condition of the vagina, must determine what position of the patient will be most eligible in each particular case.

It is utterly futile to declaim against the speculum in cases demanding its use, when, in Europe and the United States, so many hundreds and thousands of the most interesting and valuable of the sex, whose health was wrecked, and whose lives were rendered miserable, with an untimely grave in view, have, by treatment involving its use, been restored to health and to happiness, and have become again blessings to their families and to society, without the slightest diminution of purity, or even of delicacy, and in the highest possession of every moral and religious excellence that can beautify and adorn the female character.

With such witnesses in its favor, the opponents of the speculum will exhaust their disapproval in vain declamation.

The State of Georgia must, for purposes of medical topography, be divided into three unequal parts.

The largest occupying more than half the area of the State, extends from the sea-coast and Florida line on the south to the head of navigation of the larger rivers.

The second division is separated from the first by a line beginning at Augusta, at the head of navigation in the Savannah River, and running nearly west-southwest, by Milledgeville and Macon, to Columbus, at the head of navigation in the Chattahoochee; and is bounded on the northwest by a line drawn from the northeastern corner of the State, and running nearly southwest till it reaches the western boundary line of the State, about half way between Columbus and Nicajack, on the Tennessee River.

The third occupies all the space, within the State, lying northwest of the last mentioned line, and is much smaller than the second.

The first division is, geologically, of tertiary formation, varying in height and quality of alluvium according to the distance from the sea-coast.

Dr. P. M. Kollock describes the part nearest to the sea thus:

"The topographical features of this district may be distinguished into three separate orders, marked by strips or sections extending lengthwise from northeast to southwest.

"Commencing with the Sea Islands on the east, we remark a series of sand-knolls or hillocks, apparently washed up by the sea from its bottom, varying in elevation, intersected by salt-marshes and creeks, and inclosing frequently brackish ponds and lagoons."
"The growth of these islands is live-oak, water-oak, bay, gum, and pine. The live-oak predominates on the southern parts of the islands, almost to the exclusion of the pine; while this last is found at the northern end.

"The soil is a grayish and yellowish-brown sand, mixed with shells and vegetable mould, without any mixture or substratum of clay. This soil, for the most part, is thin, extending only a few inches in depth.

"These islands are separated from the mainland by extensive salt-marshes, which are intersected by numerous creeks, and overflowed by every high tide.

"The islands are also separated from each other by sounds, or arms of the sea, which are the outlets of the rivers to the ocean.

"Leaving the islands, and crossing over to the main, we enter upon another section or strip of country, varying in its topographical features from the islands; a low pine-barren, intersected with the rivers and swamps before mentioned.

"The growth of these barrens is the short-leaved pine, mingled with scrub-oaks and gums. The soil is sandy, with here and there a sprinkling of red clay.

"In wet seasons, while the swamps are full of water, this pine-barren soil is kept in a sobbed state, the drainage being bad by reason of its flatness.

"Passing across this section, inland, twenty or thirty miles in width, we strike a somewhat more elevated and rolling region of sand-ridges and hills, intersected with bay-galls and branches, and sometimes ponds.

"The soil is sandy, with a substratum of clay at varying depths. The long-leaved pine takes the place of the short, and predominates, to the exclusion of almost every other tree."

The mainland adjoining the salt-marshes, which divide it from the Sea Islands between the Savannah and Altamaha Rivers, usually commences with a line of bluffs, which rises twenty or thirty feet above the level of high water, separated by arms of salt-marsh and small streams of fresh water, carrying the water springing from a line of sand-hills twenty or thirty miles further inland.

These streams have a tide flowing a distance of ten or fifteen miles above the bluffs, and for about the same distance further they are margined by a fresh-water marsh and swamp, from half a mile to a mile in width, with strips of higher land between them, which are of an older formation than the alluvium of the swamps, this last being yet in the process of deposit.

Some of these strips of higher ground are remarkable for the growth of plants not usually found growing so near the seacoast.
Between the line of bluffs and the line of sand-hills the greatest part of the rice which is grown in Georgia is produced, and also much of the long-stapled cotton.

The line of sand-hills is an abrupt rise from a comparatively level plain, of about sixty feet, which height is very gradually increased as the distance from the beginning line is increased, with a succession of undulations of no great altitude, except near the river swamps. These swamps are like wide, shallow valleys cutting through the undulations, in which the streams meander from one side to the other, without any apparent cause for keeping any particular course.

These valleys are filled to their present surface-level with the most recent alluvium, the vegetable mould now forming on the spot, sometimes covered with water and a growth of cypress, and in other places dry, with a heavy growth of such trees and bushes as delight in a damp, rich soil.

Into these swamps and lowlands the above-mentioned undulations project more or less, producing an irregular line of river hills, having the valleys between them gradually rising from the level of the river swamps to that of the innumerable ponds that are scattered all over the face of this part of the country. These valleys, which carry off the surface water after rains, wind about among hills of but little height above them, until approaching the river swamps, where they seem to have been washed deeper, but are accompanied in their whole course by that kind of water-drain called by the inhabitants "bay-galls," which are from thirty to sixty yards or more in width; these are like the river swamps, on a smaller scale, and often resemble vast hedges dividing fields of open pine-barren, or dense thickets of low whortleberry-bushes, or species of Andromeda called by the people "tie-tie."

When these bay-galls, in their course to the river, meet together, they make considerable streams, which seldom run dry, and in some places have cut for themselves channels with fall sufficient to drain the swamps on their sides for some distance; these channels are commonly filled more or less thickly with silicious stones, often being casts of some bivalve.

What is here called "rotten limestone," probably underlies this whole region, and is found in digging wells, where they have to be sunk deeply; and where this is the case, the water is commonly impregnated with what seems to be putrid animal matter, which renders it exceedingly disagreeable, and, in the general opinion, unhealthy.

At the distance of about one hundred and twenty miles from the sea, the rotten limestone ceases, and mica-schist begins to be found in the beds of rivers and other deep excavations; here, also, the hills are higher and steeper, and oak and hickory
are mixed with the pines; cypresses are no longer found, and the small water-courses have high, steep banks, without swamps; here, also, the long-leaved pines cease, and soon the primitive formation crops out.

South of the Altamaha River, after leaving the tide-way, the face of the country is described by Dr. Kollock thus:—

"The soil varies in its qualities and appearance, "being either a dark-gray or a black mould, and is superficial, with an argillaceous substratum to the depth of five or six feet, and in a dry time becomes so hard that it is almost impervious to the plough or hoe, and cracks in every direction, forming extensive fissures of considerable depth." In such localities it is rare to find good water. According to Dr. T. S. Hopkins, of Wayne County, white clothing, washed in this water for a time, will assume a yellowish hue, analogous to that which would be produced by a very weak solution of sulphate of iron.

"This section of country, says the same gentleman, is known as the "lowlands," and is invariably abandoned by the planters in the early part of June.

"In a very dry, or very wet season, the negroes on the plantations seem to enjoy almost an entire immunity from the severe grades of bilious remittent and congestive fevers which are common at other seasons,

"Immediately above the lowlands, in Glynn County and the great Buffalo Swamp, the land rises at least eighteen feet, the soil is sandy and poor, the growth chiefly pine and blackjack, intersected occasionally by spring branches, which afford at almost all seasons of the year an abundant supply of fine water. The well-water throughout this section cannot be surpassed in purity and coolness even by our mountain springs."

On the south, in Ware County, is the great Okefonokee Swamp, of which it is not necessary to say more than that it is but little known as yet; but a survey, by order of the legislature of the State, is now in progress.

On the west, and further inland, "the face of the country," says Dr. H. Briggs, of Troupville, "is level, rolling somewhat in the southern half, interspersed throughout with shallow ponds and bays, some of which are timbered, others destitute of trees, filled to overflowing with water during the rainy seasons of winter and spring, but usually nearly or quite dry during the latter part of summer and autumn.

"There are some ponds of a different kind in the southern part. They appear to have been formed by portions of land settling down, and the water rising to a considerable height above the depressed portions.

"These were formed a long time since, as the banks are now very evenly sloped, and covered with trees of mature growth."
They are usually round or elliptical, varying in depth from three to fifteen or twenty feet, not very sensibly affected by rain or drought.

"There are in almost all sections some evidences of lime underneath the clay, such as lime-sinks and sundry subterranean passages, into which the creeks pour a part of their waters; also some lime-water springs.

"The country lies upon the Mexican Gulf slope, the declivity being from fifteen to eighteen inches to the mile. The water-courses have a general southern course, and are all tributaries of the Suwannee or Ocklockonkee Rivers. The creeks and branches spread far and wide after a rainy season; and after a long dry summer they are either dry, or nearly destitute of running water. The largest are mere drains for the surface water.

"The soil is a sandy loam, underlaid with clay at various depths, from six inches to several feet.

"The well water is soft and generally free from lime, except after protracted drought.

"The country is generally covered with pine forests, and the wild grasses and flowering plants indigenous to all this region.

"There are some isolated portions of country covered with a heavy growth of oak, hickory, magnolia, &c. The bays and margins of the creeks and branches are wooded with cypress, bay, gum, water-oak, live-oak, and a dense undergrowth of evergreen shrubs.

"The pine lands are moderately productive, yielding corn, cotton, potatoes, rice, sugar-cane, wheat and oats.

"The hammock lands are more productive, but probably not more durable. Very little has been done, as yet, in the way of reclaiming bay or swamp lands.

"Oyster and other marine shells abound in the beds of all the larger streams; they have undergone silicious petrifaction.

"In the southern part, along the banks of the streams, specimens of chalcedony, large masses of yellow limestone, and orbicularite are frequent.

"About midway between the Atlantic and Gulf coasts, the temperature in summer, during the day, is often as high as ninety or an hundred degrees; I have not known it to exceed one hundred and two degrees at any time. The nights are seldom oppressively warm after nine P. M. The gales that so frequently prove disastrous upon the Atlantic coast, are scarcely observed here. Those of the Gulf coast are sometimes severely felt, particularly in the western part of the district."

The second division of the State begins on a line running from Augusta by Milledgeville and Macon, to Columbus, being the head of navigation in the principal rivers of the State, and differs entirely from the first in geological formation, being
primitive; and the face of the country, which is more hilly, and the streams being mostly confined between high banks, and without any marginal swamps, with rocky beds, over which the current is generally very rapid.

The hills, near the larger water-courses, are commonly very steep, often with large masses of coarse-grained granite piled up like houses, and rapidly disintegrating, from the effects of the weather. These hills are composed of clay of various colors, red predominating on the higher parts, while in the deep cuts made by the streams, a white, extremely tough plastic clay is found, mixed with a very fine white sand, with white flint stones, often in oblique cubes, with unpolished surfaces.

In some places dikes of silex, or of coarse mica, cut into the hills like veins of a mine, as if immense masses of granite had been decomposed into clay, leaving veins of silex or mica in place.

The red clay always contains grains of silex, and sometimes mica in very considerable quantities. Transparent crystals of quartz abound, sometimes single, but mostly covering a mass of agate, or lining a cavity in the same. Small masses of felspar are found on the surface, and geodes, an inch or less in diameter, containing a quantity of red ochre.

There are places in the central parts of this division, where the granite lies bare, like an old field of some acres, having banks around it like those of a tranquil water-course, green with mosses and constantly damp.

The soil is a light gray, and strong, and very productive while new, but very quickly destroyed by careless cultivation, such as has been practiced ever since the first settlement of the country, leaving bare the clay, upon which scarcely any vegetable can grow.

The most productive lands, and those which are longest in being exhausted by the slovenly cultivation aforesaid, are those called here "river low grounds," where the surface to a varying depth, sometimes more than ten feet, is composed of vegetable matter intimately mixed with the washings from the hills. This land is always highest immediately at the edge of the stream, and gradually becomes lower, until it reaches the foot of the hills, where there is often standing water.

A large portion of the cultivated land in this part of the State, is in what is called "the Flat-woods," being table land on a small scale, at a distance from the largest streams, having a stiff clayey soil, not very pervious to water, and therefore, in a wet season liable to be soaked, and sometimes overflowed, the watershed not always being very obvious.

The forest growth is oaks of several species, hickory, chestnut, black walnut, pine, beach, maple, dogwood, buttonwood, here
called sycamore, crab-apple, &c., in the order of frequency here indicated.

The northern part of this division contains most of the rich mines of gold, copper, &c., with mineral springs in various places; but the springs and wells in general furnish very pure "freestone" water.

The temperature varies much in the different parts of this division; along the southern boundary line the summer days, in dry weather, are oppressively hot, with little wind, while the nights are cool and pleasant. Thunder squalls are frequent, stirring up the atmosphere, bringing down the cold air from above, while the rain washes the dust from the vegetation, refreshing everything.

In the winter the thermometer, seldom below zero, is very variable; light snows are common, sometimes lying in the woods two or three weeks.

Approaching the mountain region, the summer heat is mitigated and the cold of winter is increased, and the temperature is more governed by the course of the winds, snow lying on the mountains till late in the spring.

The third division comprehends the limestone region of Upper Georgia.

For information from this region, I am indebted to Dr. Robert C. Word, formerly of Cassville, now of Rome. "There is no material difference," says Dr. Word, "in the geological features of the several counties. There is in each the same succession of broad valleys of rich fertile land, separated by intervening ridges, from one to several miles across, of various degrees of elevation, rising, in some instances, to the magnitude of mountains, originally covered by a dense forest, now rapidly disappearing. These valleys are well watered by streams fed by large springs, which gush up from beneath the substratum of limestone underlying the surface at various debths, throughout their whole extent.

"The rains of winter and spring fill the stratum of earth above the limestone with moisture, and give rise to innumerable temporary fountains (called wet weather springs) at the base and on the sides of the hills, and all over the valleys. These all flow into the permanent streams, and occasion a great disproportion in the height of their waters between wet and dry seasons.

"The stratum of limestone, and in many places one of alumina above it, presents a great obstacle to the absorption or ready penetration of the superabundant water deeply into the earth, and consequently there is excessive humidity of the surface, and in many places large pools of water, or shallow lakes of considerable extent, during the months of January, February, and
March. The three succeeding months are generally delightful in temperature. The genial warmth of the vernal sun quickly evaporates the excess of moisture—the dreariness of winter is dispelled, and its fathomless abyss of cohesive mud forgotten in the contemplation of the gorgeous scene displayed with magical celerity by the luxuriant vegetation.

"The summers are by no means so depressing as upon the seaboard, or in the middle portion of the State. The thermometer occasionally, in the hottest part of the day, rises as high as 90° or 92° of Fahrenheit, but the nights are cool and refreshing.

"The same geological formation which favors the accumulation of water near the surface of the earth in winter explains also the remarkable absence of it during the months of August, September, and October, when in dry seasons, the ground is parched and cracked in many places, the atmosphere filled with dust, vegetation languishing, and where the stratum of earth is thin, totally destroyed; the temporary springs, branches, and lakes all dried up, many of the wells exhausted, and the water in the permanent streams, reduced to its minimum, creeps sluggishly through the accumulated piles of drift-wood, which partially block up the channels through which it flows.

"The highest heat of summer is of short duration, and the temperature of the entire autumn is delightful.

"The two principal streams in this section of Georgia are the Oostenaula and the Etowah, which, meeting at Rome, in Floyd County, form the Coosa, a stream navigable for steamboats many miles into the State of Alabama.

"These rivers drain nearly the whole of the fifth congressional district, and are of great size, but not different in their circumstances from their smaller tributaries, though much of the alluvial land upon their banks, subject to inundation, is still covered with primeval forest.

"Throughout all the limestone region numerous sinks and depressions are observable on the earth's surface. Many contain water during the winter, but become dry on the approach of warm weather. Others are permanently filled with clear pure water. Subterranean caves are also numerous, especially in the counties of Cass, Waker, and Dade.

"The great alternations of moisture and temperature, so common to our winters, are probably due to the character of the prevailing winds, which are exceedingly variable, not frequently shifting their position to all the points of the compass in a period of less than twenty-four hours, each change in direction being attended with a corresponding change of temperature. The southeast winds, blowing from the Atlantic coast during the greater part of fall and winter, are attended with frequent rains, cold and penetrating in their effects upon the
system. East winds are attended with cold drifting rains, and frequently with sleet; south winds with copious showers, not quite so cold; southwest winds with frequent showers, rather warm. As the wind approaches the west, the rain ceases, though the clouds continue until it reaches a point north of west, when the weather becomes fair and cool. Due north winds are very cold, though not usually of long continuance. Northeast winds are not common, and when they do occur, are apt to bring with them snow. In the spring, we have rains and passing showers from the west and southwest. In summer we have showers mostly from the west and northwest.

"Situated and forming the dividing line between the grain-growing sections of Tennessee and the cotton region of Georgia, the limestone counties of Cherokee Georgia, are not wholly unsuited to the production of either. Though best adapted to the growth of grain, grasses, and stock, the more southern counties have been found to produce abundant crops of cotton. The soil on the creek and river bottoms is rich with alluvial deposit. In many places, both in the valleys and more elevated country, the soil is strongly impregnated with iron, constituting the "red" or "chocolate" land, exceedingly fertile, but "thirsty."

[To be concluded in March No.]


(Concluded from January No. p. 63.)

The secondary abscesses following rheumatism, result in most cases, from local phlebitis, or from the detention of minute fibrinous plugs arresting the circulation in the small vessels. Sometimes, the breaking down of larger plugs with interior pus, causes irritation to be established, with more or less serous infiltration into the adjacent cellular tissue, the abscess varying according to the local arrest. The limits of this paper, however, will not allow more than mention of these conditions. I will merely refer to the pathological facts of the vessels becoming inflamed, and subsequently thickened or plugged up, so that more or less perfect closure ensues, with resolution into abscess, or into mortification, either local, or at a distal point, if the large vessels are arrested in their circulation. The nature of the gangrene, whether moist or dry, will in great measure depend on the perfection of the closure. Sometimes, however, the surrounding parts become so agglutinated by the adhesive action of repair, as to render the neighboring tissues anatomically unrecognizable, and totally unfit for their purposes of secretion or of motion. If such deposit take place in the
lungs, the damage is the same, and in this way vomicae may arise perfectly independent of tubercular origin, a plug of fibrin not as large as the head of a pin arresting the local circulation, with consecutive destructive changes; so that rheumatism, by its results, may become the parent of evils, equal, in their destructive tendencies over life, to tubercle in its highest state of development and disintegration. If the vessels of the brain become the seat of arrest, its nutrition will be more or less interfered with, and local atrophy or softening may ensue, with lesions of motion, or of intelligence, as resultants. And thus paralysis and imbecility may follow in the train of that so-called "simple rheumatism."

The cases of paralysis after rheumatism of the spinal investments are not unfrequent. On dissection, this apparently high inflammatory action, so complete in its functional arrest as even to eventuate in death, cannot at times be recognized by the eye, as regards structural change. And the same can be said of it when seated in the serous membranes of the brain; the so-called inflammation being a specific poisoning of the very centres of life, leaving neither trace nor residue.

In the gouty the blood poison is not always exhibited by the "big toe" attack, with increasing demand for flannel. The skin may become the beacon of its approach. Lichenous, herpetic, or other eruptions, painful to bear and obstinate to treat, may not only mask the attack, but for a long time keep it in "masterly inactivity." And the same, at times, may be said of the poison of rheumatism.

It would appear, from reasoning on the facts adduced in the study of rheumatism and gout, that if the lactic acid formations are in excess, either by over-generation or by non-elimination, that an attack of acute rheumatism is apt to follow, and especially after the sudden drying up of these eruptions. If this does not take place, but the skin disorder recedes slowly, and there is apparently but a small excess of lactic acid retained, the rheumatic pains are irregular, flying from spot to spot, or the joints become more or less stiff, not from any difficulty in their opposing surfaces, but from muscular inability to apply the necessary force towards movement. If, on the other hand, the uric acid is not expelled, or is generated in excess, gout is the frequent successor. At this moment I have two cases that would apparently verify these views.

The white fibrous tissue is the chief texture affected in simple acute or true fibrous rheumatism, either as it occurs in the formation of the ligaments connected with joints, or in the membranous form covering tendons, or in the aponeurotic expansions of the large muscles, as the fascia lata of the thigh, with its deep prolongations, or in the cranial dura mater, sclerotica, &c.

It will be necessary to bear in mind that the sheathes of ten-
The bursæ (sometimes called the bursal synovial membranes) between the tendons of muscles, between tendons and bones, and between the projecting parts of bones and skin, as the olecranon, &c., have no epithelium,—although in function they resemble the true synovial membranes, yet they differ from them anatomically and in exact analysis. But this is not the case in the bursæ communicating with the synovial capsules; these as well as the articular cartilages, have an epithelial layer. These anatomical peculiarities are to be remembered, as they form the distinctive features in the pathology, diagnosis, and treatment.

Although the synovial membranes are not so prone to the effusion of plastic lymph, as are the serous, yet the burse are at times found not only traversed by adhesive bands, but even completely obliterated. The movements in such conditions are greatly impeded, but not so completely, as when the sheaths of the tendons are in a like manner affected, the free play of the attached muscles being rendered more or less impossible.

The fact is not to be lost sight of, that a large proportion of the urea is derived from the disintegration of the body tissues, especially of the gelatinous and albuminous orders, independently of the introduction of nitrogenized food into the system. It is chiefly or at least frequently, in rheumatic disorders which are the offspring of deranged secondary assimilation, that urea forms so fatal an agency, although nervous depressions and coma arise in non-rheumatic diseases; as those of the kidney, or from puerperal causes, &c. Indeed, in many diseases involving the serous membranes with kidney difficulty, urea forms a dread element, whilst, by its non-elimination, or selective error, it lies at the secret cause of disturbance, not only in the sclerotic membranes, but also in many of the diseases of the aqueous and vitreous humors of the eye. This is now only alluded to, and may form the subject of another paper, or will serve to call notice from other medical observers. Not less important would be a series of observations as regards the action of oxygenated remedies in a high lithic condition of the system, as the uric acid might thus be converted into urea. In the gouty this change of uric acid into urea might take place by the action of oxygenated remedies, and suppuration of the synovial capsules and serous membranes ensue, as in rheumatism, whilst arachnitis and coma form the modes of death, especially if kidney disorder exist at the same time. In other cases—those in which death is sudden, and the organic lesions are inappreciable or insufficient to account for the fatal termination—the urea, by a re-arrangement of its elements, may be converted into cyanate of ammonia, thus poisoning the centres essential to life.

It is not always that in rheumatism there is a deficiency of surface excretion, nor in gout that the kidneys are chiefly in fault. The materies morbi may be generated by the imperfect composi-
tial and quantity of the blood itself, so that the tissues of selection cannot be properly nourished,—their structural assimilation being more or less destroyed.

The excretion of soda in tophaceous deposits or articular incrustations, does not take place in rheumatism as in gout; it is, however, partially witnessed in the hybrid affection, viz: rheumatic gout. This in part, may be accounted for; as in the gouty the primary digestion is disturbed, whilst in the rheumatic the secondary assimilations are more at fault. Hence, the first are apt to use soda as a corrective of acidity, or "to bring the wind off the stomach;" whilst, probably, from the inactivity of the liver, the alkali from the salt used at table is not called on in the formation of bile, and thus collects in the blood. In rheumatism, however, we have at times such fusion of the immediate tissues about the joints, rendering anatomical division almost impossible, that it would seem by the excessive attraction of lactic acid to the parts, it possessed the power to act as a solvent of the elementary fibres, as I have found it for many years useful for that purpose in dyspepsia of animal substances.

It is well known that rheumatism more frequently attacks the weakly, the intemperate, the irregular in diet (and especially if of unwholesome nature,) those who may be exposed to vicissitudes of temperature, or who long labor mentally or physically with insufficient food, or under anxiety and mental depression. But the strong, well-fed and able-bodied, young or old, are liable to its sufferings; in these, if the exanthemata, or accident, have not engrafted a kidney vice, and the blood is not overloaded with nitrogenized products, the attack will be of the simple inflammatory type, affecting the nonepithelial fibrous structures or surfaces; whilst heart disease, and especially of the mitral valve, will be infrequent. On the other hand, if kidney disease, accidental or exanthematous, be present, then structures more important in their uses and anatomical arrangements, viz: the interior capsular parts, the heart and the arachnoid serous membrane, &c., are liable to become affected, whilst the prognosis is against the patient, either immediately or remotely. Delirium or coma, more or less profound, is the distinguishing feature in these cases. In the others, where the exterior cranial fibrous dura mater is attacked, although the sufferings are intense and the venous suffusion alarming, yet the chances to the patient are more favorable, and delirium and coma do not follow in so fatal a train if present, unless the effusion be great; and even here, the disturbances are more of position than of nutritive function.

The rich or the pampered are not, however, the sole proprietors of the gout; the poor, the half-starved have also their gout; it is the offspring of their very poverty. Dives, introduces into his blood from without the great sources of his evil; whilst Laz-
arous produces a condition almost similar, by the rapid disintegration of his own tissues, loading his ill-fed blood with uric acid and other compounds, from the wear and tear of his system. There is no compensation by proper supply of food; and the kidneys and other emunctory organs are too enfeebled, though, perhaps, not diseased, to extract the uric acid or urea from the blood. These cases, though rare, yet take place—it is the gout of the impoverished. They are, in general, inebriate from necessity and from physiological instinct; their systems cry aloud for carbon,—for liquor,—that the oxygen of the air they breathe shall not burn up their pittance-saved bodies, but attack the free carbon and hydrogen of the alcohol, and leave in respite their meagre frames. It is the gout of demand and not of supply. And here we find a vivid example of the fact above stated, that the tissues suffer disintegration, or death, not only from deficiency of nutritive supply, but from defective quality of the blood. In the gout of the impoverished, nitrogenized food—the bane of the rich man—and those remedies having the power to retard the decomposition of tissue, as tea, coffee, hop, &c., must be trusted in; and thus the waste of the system being restrained, the blood will not be surcharged from the structures themselves, and the local disintegration will be arrested, and the organs return to their uses; but mostly with deformity, as an index of their past trials.

The urinary deposits, both in gout and rheumatism, sometimes mask the condition of urine as secreted by the kidney—the uric acid formations being disguised by the alkaline, or earthy phosphates. This is chiefly owing to chronic vesical irritation or inflammation, the muco-pus acting on the urea, and converting it into carbonate of ammonia, which precipitates the alkaline salts. It is thus that the condition of the urine may be masked by the presence of pus, or of a mucoid body, in its rout from the kidneys. Indeed the highly acid state of the secretion may be the very cause by which the bladder may be irritated. The prognosis in these cases depends on the nature of the bladder or kidney irritation, the possibility of calculous formation, the recent or long previous existence of the affection, &c.

The space allotted me is nearly exhausted, and will necessarily oblige me to condense the chief features of treatment, with a running statement on some other points. From the preceeding views the treatment almost explains itself. In the acute rheumatism of the robust, at whatever age, the seat of attack is in the white fibrous tissues, the fever high, attended generally with great sweating, the pain and swelling intense, but greater than when the epithelial fibro-serous tissues are affected. Venesection is rarely called for, though by some regarded as not only a mitigator of pain, but as instituting a better condition for subsequent remedial action. As a lessener of fibrin it is useless—its chief value, if used, being
the relief to the vascular tension, and the rather more rapid absorption of neutralizing remedies. In my own practice I have not used it for many years. The local applications of leeches is warrantable, but more troublesome in general than the affection. A light antimonial emetic, however, answers more fully the desired end, followed, on the subsidence of its action, by an active purgative of Hyd. chlor. mit., with Ext. Colocynth Comp. The advantage of early emptying the bowels is realized, when the increasing disablement of the joints renders the efforts to rise not only agonizing but injurious. The affected parts should be bathed with a warm mixture of Potassa-bi-Carb. and laudanum, and afterwards wrapped up in cloths saturated with the solution, and covered with oil-silk or rubber, which can be gradually removed if the heat is complained of. Potato water, as left after boiling the vegetable or its parings, has proved a most soothing application, when freely sponged quite warm over the swollen and painful joints, which can afterwards be wrapped up in it. as directed for the alkaline wash. The Tinct. Actea Racemosa, in 6 to 12 drop doses, can be given in or followed by a solution of Nitrate, Bi-Carbonate, or Acetate of Potash; or the Tart. of Potash and Soda, if preferred, can be substituted. Frequently, in children, the Actea alone serves to cut short the attack after a few doses, in conjunction with alkaline fomentations. The necessity for purging generally ceases after the bowels have been well moved in the beginning. At all events, intestinal irritation is to be avoided. It is well to remember that the expectant treatment of acute rheumatism is nearly as favorable in its results as the active. Colchicum, in the acute attack of the strong, who have deranged hepatic action, combined with opium, after due operation from the bowels, also forms a valuable remedy. Its purging and emetic effect is unnecessary and to be avoided. It is more as a cholagogue and an excretor of lithic acid, than as a specific in rheumatism. Where the liver is already acting freely, it does not form an agent of trust, and when frequently employed serves to injure the system. Hence the discrepancy as to its value. In alkaline combination it is frequently useful. The Nitrate of Potash, so much lauded of late, will be found beneficial where a high condition of fibrin exists in the blood, its solvent action over that element being called for. Otherwise it is no more, and many times not so valuable a remedy as the other alkaline salts. It is, therefore, not from any specific eliminating power of the rheumatic poison that is called for, but from its defibrinating action, and its value as a diuretic, and its probably converting the lithic acid into a more soluble compound, urea. After proper evacuation, the Pulv-Doveri, in full doses, will generally, though not always produce refreshing sleep and quiet the pain. If found stimulant to the brain, watchfulness or flightiness taking place, it either
must be increased or left off. Opium acts, in many cases, as an expeller of the lithic acid—in chronic cases, conjoined with terepine, it sometimes causes immense quantities to be evacuated.

All things considered, time, forms as valuable an element in the treatment as the remedies selected. A certain amount of materiae morbi, and the disposition to its reproduction, has to be broken up, and time, sweating, and sometimes urination are at work in the process of elimination. Remedies may assist, but if injudiciously employed they will retard, the patient suffering from both disease and doctor. The diet should be unstimulating, meat, soups, and jellies avoided, toast and water, with light gruels, being the best regulators. As the attack subsides, vegetable diet should be adhered to,—the local applications and internal remedies can be moderated. Qlam soup, and raw salt oysters may, after a time, be allowed; and now, if the blood shows decrease of its red corpuscles, the mild preparations of iron may be cautiously commenced on. If loss of flesh be increasing, coffee and tea will prove beneficial as preventers of tissue waste. In the anasarca of the debilitated, squill with quinine will be found most serviceable.

By these means the immediate re-attack may be warded off, but mental quiet and bodily rest are imperative. The supply being small, the demand should be lessened. But the low diet system is not to be carried too far; it is well to remember that the fibrin is increased in the blood by starvation, as well as by high feeding. Rest, however, is absolutely necessary. No blood is to be thrown into the parts in and about the joints, by the invitation of exercise. Even in the very robust, acute rheumatism sometimes attacks the joints after long-continued and violent exercise. But where the parts have been affected, with the system lowered by diet, remedies, and wear and tear from pain and loss of rest, great caution as to exercise is requisite; as other structures, and of higher importance, may become involved, and simple acute fibrous rheumatism, be merged into an attack of the epithelial bursal and synovial membranes of the interior of the joint, besides endangering the heart, pleura, and other organs, when their liability to become engaged was not at first probable.

It is this small point which makes the utmost watchfulness necessary, as regards keeping the system in good general working order, and which has made the pathological statements so variable, as respects the engagement of the heart in acute rheumatism. Every practitioner has observed that, when in the first attack in sound persons, the swelling, heat, redness, and pain have been very great, the heart is not so liable to become affected, as when all the symptoms are more moderate. In some cases, however, both the tissues in and without the joint are attacked, and then the diagnosis is to be carefully viewed, as the renal disturbance
is mostly present, though perhaps later to observation, at the time.

The friction with liniments, whilst the thickening, &c., remains, after the subsidence of the acute pain, will be found beneficial. The following recipe I am in the habit of using;—

R  Ol. Origon, ....... 3i
Ol. Lavend. Spicat., ....... 3ss
Tinct. Aconite Sat., ....... 3i
Ol. Amyg. dulc., ....... 3iii
Aq. Ammon. fort., ....... 3ii
Vel., ....... 3ss

M.

A light covering, with cotton batting and oil-silk, should be applied, unless the heat is complained of. The gradual reduction of the envelopes should take place after a time, so that chilliness be avoided, which would attend its speedy withdrawal.

The treatment in chronic fibrous rheumatism has the same features, differing more in degree than method, excepting in the employment of iodide of potassium in small doses. The system is to be carefully watched, exercise is to be judiciously and regularly taken, the surface made to excrete properly, the bowels to be kept soluble but unirritated, sleep should be rather longer than in health, as a promoter of insensible transpiration and nervous recuperation, whilst stimulant embrocations, oil-silk sweatings, and light galvanic applications should be employed to the part. The color, quantity, and specific gravity of the urine should be watched, as giving evidences of approaching danger, or of increasing constitutional vigor.

In the heart complications in rheumatism, the treatment requires great circumspection. The difficulty of breathing, the præcordial pain, the out-of-breath manner of speech, the desire to be propped up, the increasing effusions into the legs, scrotum, chest, or abdomen, with diminished urine and rapid pulse—these point out the imminent peril of the sufferer, from which nothing but a strong constitution and skillful treatment can save him. The drain on the pent-up fluids is to be made through the bowels, as the kidneys are generally too occluded, or broken down in functional power, to be of any use. The Pulv. Jalape Comp. with Elaterium, or other hydragogues, with digitalis over the heart, or internally 3 to 6 drops of the Tinct. Veratrum Viride must be administered, and watched during their operation. Support by brandy or champagne must be proportioned to the exhaustion or nervous necessity, but no more. The stimulous, and not the carbon, is wanted now—neither lung nor liver can dispose of it. If alcoholic drinks disagree, coffee and camphor can be substituted, sometimes with most excellent results. During purging, the position of the patient is to be kept unchanged, or even with the
head lower if possible—at all events, he is not to be raised suddenly—whilst stimulants should be snuffed through the nostrils, &c. If these means are successful in reducing the effusions, the kidneys can now be gently invited into action. The palpitation sometimes yields, most gratefully to the patient, after the administration of champagne, the carbonic acid serving to allay the irritability of the heart's action. By conjoining the infusion of the wild-cherry bark—or, where its bitter tonic property seems to disagree with the stomach, a few drops of the dilute Hydrocyanic Acid,—a most happy effect may sometimes be obtained when the irritability is excessive. But great caution is requisite in the administration of organic sedatives, as will be mentioned further on.

In the convalescence, if the liver still should continue at fault, the preparations of iron are to be avoided, as they will serve to induce congestion, and lock up the proper secretions of the organ. At this period, however, the kidneys will sometimes resume their functions, and labor not only for themselves, but, by taking off the purpurates and other highly carbonaceous compounds, so relieve the liver, that the system daily rises refreshed from their effects. The urine becomes more and more abundant, and loaded with the urates of ammonia and soda. It is here I would particularly caution the young practitioner, in his testing the urine with nitric, or nitro-muriatic acid, lest he should mistake the very copious deposits of the white crystals of lithic acid, for albumen. This I have seen done more than once. The deposit of the phosphates by heat, is corrected from wrong interpretation on the addition of the acid, which re-dissolves them. This dense condition of the urine by the urates of ammonia and soda, is the very salvation of the patient. Beware then of administering any acid, either alone or in combination with a vegetable or mineral tonic, as it will serve to neutralize just so much ammonia and soda, and thus prevent the elimination by the kidneys of the very lithic acid so poisonous in its action to the general system, but especially to the serous membrane of the chest, and of the heart, which will be again tortured by the acrid blood into renewal of its exhausting efforts, whilst convolution and coma stand threateningly near.

In the early part of this tumult of the system, when the organic force is consuming by the overtask of the functions, I would strenuously caution against the abuse of opium, or of any narcotic, to produce sleep or relieve from pain. And I will only reiterate a maxim which I have before published, and often repeated, viz: that in all organic diseases attended with pain and excretory impediment, opium and other organic sedatives are to be avoided, as, by paralyzing the organic centres, dropsies may collect in the cavities.
Lemon-juice, in some cases of acute and chronic rheumatism, is at times beneficial, though rarely to be trusted to alone. Yet I have seen cases where it seemed to act as a perfect specific. It will prove chiefly beneficial in uncomplicated cases, where the urea fails in its urinary quantity, and where an excess of ammoni-acid exists in the blood. Benzoic acid, in these conditions of chronic rheumatism, acts at times most favorably.

The children of gouty, rheumatic, and dyspeptic parents, are prone to a lithic condition of the blood, or at least to its elimination by the kidney. It is early marked in them by incontinence of urine, or "wetting the bed." Although the heart does not evidence organic disease in them, yet its motions are violent and frequent whilst crystalline lithic acid is formed in the urine; or they are variable in their diet and irritable in their dispositions, the urine being pale, abundant, but free from lithic acid deposit or in solution. The acid condition of the blood is irritating to the internal membrane of the heart, and the contractions are sharp and frequent. There is a loss of true tone in the system, and rheumatism is apt to set in spontaneously, or after violent anger or any undue exhaustion, exercise, or exposure. Here, opium forms a most valuable remedy from its sedative influence and its power to disengage the lithic acid from the blood.

Children given to masturbation, but whose urine alternates from lithic to the phosphatic, the intermediate depositions of the urates of soda and ammonia taking place, with increase of urea, are also subject to rheumatic attack or pains. Substantial diet, with opium at night, is the chief remedy. The furtive look, the desire for solitude, the uncalled-for sighing, the vesical irritability, the irregular languor, and the blowing sound in the heart and large vessels, with more or less palpitation, will serve to direct suspicion to the solitary acts of the patient, which careful watching may verify. Organic changes may, and frequently do, establish themselves from these long continued functional disturbances. But it is always well to remember, in the disorders of nutrition of the heart, that the young are reproducers—their organic desire to remodel is ever at work; that the hypertrophy, if it exist, is mostly from interstitial deposit, and not a true fibrillar increase of the heart itself. Restraint from the abuse, chemical changes afforded to the blood, and the supply of fresh material by proper food, with attention to moderation of exercise, and sometimes to complete bodily rest, will form not only the treatment, but, in many a new organ. Of this I have seen several most excellent examples. In later life, an individual ceases to be an active remodeler; he is on the waste account; his capital has no interest accruing, and he is forced to use it up for the common necessities of his system. These are distinctions as well as differences. Had these views been more common, so many heart-disturbed children would
not have filled an early grave, or been moored to the stake of life, to waste away an aimless existence in later years.

In scarlatinal rheumatism, all treatment at times is rendered impossible by the condition of the patient; as in scarlatina, the do nothing system is frequently the best. Good nursing, attention to the skin by sponging or moist wrappings, are better than the "nimia diligentia medici." During the fever, the pain is mostly in the wrists, or in one or two joints. The scarlatina and the rheumatic complication are offspring of the same poison. There is pain, as in true fibrous rheumatism, but it is seated in different structures, and attended with different implications as regards the head, the heart, and the chest. In the robust, the diet, or rather the absence of it, forms the treatment. All animal food is to be avoided—the blood is yet too overloaded with nitrogenized products. If too early indulged in, the articular pains recommence or increase, chest or heart difficulties are renewed, and convulsions endanger the life of the patient. Farinaceous and vegetable diet must be continued a while longer. The debility is deceptive; it is more the result of the oppressive action of urea over the great nervous centres, than loss of power from nutritive want. The return, then, to animal food, must be cautiously watched.

But in the weakly, these fears have to be in a measure given up. At the first ingress of the rheumatism, a little abstinence may be enjoined; but after that, the position is different. Death by debility would ensue more rapidly than by the disease. It is the rheumatism of demand. Food and stimulus must be given. Ulcerations—pus makings, about and in the joints, are to be checked; food and drink must do it; for specific medicines are useless, unless quinine, iron and other tonics can be so called. Under a lowering plan the coffin is sure to close over the wretched victims; and life to most of us, is better with a stiff leg or disabled joint, than the kind attention of an undertaker.

In the convulsions attending both cases as above stated, the directions should be:—for the robust, feet and legs in hot water, with head up, or at an easy reclining angle; for the debilitated, the horizontal posture, and no warm bath, but cold water sprinkled on the face and chest, in the order of natural respiration. Here, the brain must have blood, though diseased blood it be. From the neglect of this simple precaution, I have seen a child killed as though struck on the head,—the feet, and not the brain, being supplied with blood!

In syphilitic, and also in chronic rheumatism, iodide of potassium acts more than well; in the former it is almost specific. Its combination with colchicum and with opium, may at times be required. It is not only diuretic, but possesses the property to re-establish assimilative vigor. Small doses, in repetition, act more favorably than large doses at longer intervals.
In rheumatic gout, especially where the fibrous sheaths of nerves are attacked, the combination of Hyd. Pot. with Colchicum acts most favorably, the Tinct. Aconite Sat., with Acid Hydrocyan, being painted freely over the route of the affected nerves and kept from evaporating by strips of oil-silk or rubber. In the cranial effusions, the Hyd. Potass. is the most reliable remedy.

Calomel is chiefly useful as a defibrinator, as a promoter of interstitial absorption, and as a specific stimulant to the liver, by which the decarbonation of the blood shall be promoted through the secretion of bile. In the debilitated it is positively harmful, if continued; although the balance at times, even in them, may be in favor of its use, where the brain is oppressed by black blood.

Guaiacum has long enjoyed a reputation in chronic rheumatism, and with apparent good right. It seems to possess the power of increasing the excretion of both lithic and lactic acid, by the kidney and skin. In rheumatic dysmenorrhæa, in leucorrhœal discharges attending this disorder—in the dermalgia, so painful on pressure or warmth—in hysteria and hysterical knee-joint complaints, mostly of a rheumatic nature, &c., this remedy, in conjunction with others, or in the form of the Vol. Tincture, will be found serviceable. The cases, however, are to be selected properly, whilst time forms an element in its action. I have known it not only cure, but eradicate some of these disorders.

Rheumatic chorea has already been adverted to, with partial mention of remedies. The irritability of the heart, or the nervous propagation is, in many cases, to be quelled before any permanent success can be attained. Arsenic, as in Fowler’s solution, in six drop doses, with the endermic application of morphine, and quinine (if after malarial influence) over the cervical spine, is at times very valuable. In the rheumatic form, colchicum and actea racemosa, in small doses, have been found useful. The same rheumatic condition of the system have been attended, in both male and female, with globus hystericus. Stammering, as before remarked, is sometimes the result of rheumatism, in children whose systems have been weakened, and who are thus more liable to mental emotions, as fright, &c. The heart palpitates readily, and the muscular nervous branches to the larynx, and more rarely the hypo-glossal, or motor of the tongue, become the channels of the disordered reflex action. I have many times noticed the sudden hesitancy of speech, from sudden emotion, in the rheumatic, differing from the arrest of power in the organs from emotional acts in the unaffected.

In conclusion, I shall only refer to acupuncture in sciatica with effusion into the sheath, and in muscular pains, having been at times serviceable. Chloroform, blisters, the hot button, the endermic applications of veratrine, morphine, delphine, aconitine, strychnine, and other alkaloids, have had reputation for a time,
but chiefly in neuralgic affections. In the gouty and rheumatic, local applications may relieve temporarily, but it is only by the patient study of the blood changes, with the appropriate antago-
nistic remedies, and food, that any permanent benefit can be real-
ized, or security against attack be obtained.—[American Med.
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Exsection of the Trunk of the Second Branch of the Fifth Pair of
Nerves, beyond the Ganglion of Meckel, for Severe Neuralgia of
the Face: with Three Cases. By J. M. Carnochan, Professor
of Surgery in the New York Medical College, Surgeon-in-
chief to the State Hospital (New York), etc.

The accounts heretofore given by authors of neuralgia, or tic
douloureux of the face, are of a very vague and indefinite char-
acter. Numerous essays and monographs have been written on
this subject, since the time of Fothergill, who published, in 1776,
an elaborate description of the disease, which attracted consider-
able attention. In all these efforts, the pathology of tic doulour-
eux is described with ambiguity. In practice the treatment
has been as empirical as it has proved to be unsuccessful. The
seat of the disease has been referred to distant irritations, espe-
cially in the splanchnic cavities—to a foreign body acting upon
the nerve—to the pressure of bone upon some portion of the
nervous trunks. By some authorities, it is referred to increased
vascularity and thickening of the nerves; while Astley Cooper,
on the contrary, states, that the nerves present their natural co-
LOUR, and are rather diminished in size than enlarged. It can
scarcely be supposed that beneficial results should follow from
treatment based upon theories so different in character.

Tic douloureux of the face, proper, or of the second branch of
the fifth pair of nerves, is by far the most common form of facial
neuralgia. This may be explained by the more numerous
branches, which are given off by this trunk, and by the position
which these branches occupy—in some places pent up in osse-
ous canals, and in others subjected to exposure, to changes in
temperature, as well as to the agency of morbidic influences, from
which the other two trunks of the fifth pair are exempt.

The same laws which govern neuralgic disease of one of the
branches of the fifth pair, must be applicable to the disease in
the other trunks. I believe that the phenomena of neuralgia
can be explained with as much precision as in any other disease,
when well understood. In cases similar to those described be-
low, whatever may have been the original exciting cause, I have
no doubt that the real seat of the disease is in the trunk of the
nerve, in front of the foramen rotundum—in some parts of it, or
in the whole of it. The causes of the disturbed and changed condition of the trunks of the nerve may be numerous—prolonged irritation upon the periphery—exposure—injuries—tumours; diseases of the teeth—pressure resulting from periosteal or osteal thickening of the osseous foramina or canals—sudden suppression of any of the important secretions, as of the catamenial discharging. From one or more of these causes, the trunk itself may be primarily affected, or acting upon its ramifications, the irritation may be propagated to it. Prolonged irritation induces inflammation, and this generally remains passive or chronic. Some of the terminations of inflammation—such as the effusion of lymph among the interstices of the neurilemma or the nervous tissue itself—may become developed; leading to a vascular, engorged, thickened and enlarged condition of the nerve, or to a softening of it, at one or more points. In fact, vascular engorgement, or inflammation, with some of its consequences, of the neurilemma alone, or of it and the nerve together, by whatever cause produced, is the condition which constitutes the pathological changes in the trunk.

The three cases related below afford proof of what has just been stated. In each instance, the exsected nerve was found to be red, vascular, engorged and considerably enlarged.

The diffused character of the pain can be easily understood, if we take into consideration the numerous ramifications of the second branch of the fifth pair, and the extensive surface over which their ultimate filaments are distributed. The periphery of the nerve occupies not only the superficial parts of the face, but extends deep among the bones of the upper jaw, to the nasal fossae, to the septum nasi, to the hard and soft palate, to the pharynx, to the inner ear, to the orbit, and to the temporal and malar regions.

It is well established, that if the trunk of a nerve be irritated along its course, the painful sensation will be referred to its periphery. If the ulnar nerve, for example, be struck where it passes behind the internal condyle, a sensation of pain is excited, which is referred to the little finger and to the ulnar border of the ring finger; and if a prolonged irritation be kept up at this point, the skin of these fingers becomes tender to the touch, the sensibility being very much increased.

It is by this principle—which governs the action of the stimuli upon the nerves of sensation—in connection with the anatomical distribution of the nervous ramifications, that the various phenomena of neuralgia can be explained. The disease being seated in the trunk of the nerve, we can readily understand that the pain must be referred to the peripheric extremities of the nerves, and will there be felt, as long as the branches are in communication with the encephalon.
From these views, we can perceive how futile the operation of division of the nerve at the foramen infra-orbitale must be. Where the trunk of the nerve is extensively diseased, no operation can rationally lead to a successful result, unless all the branches emanating from the trunk are cut off from communication with the brain.

I believe that, in such aggravated cases of neuralgia, the key of the operation is the removal of the ganglion of Meckel, or its insulation from the encephalon. —Where even a large portion of the trunk of the second branch of the fifth pair has been simply excised from the infra-orbital canal, the ganglion of Meckel continues to provide to a great extent the nervous ramifications, which will still maintain and keep up the diversified neuralgic pains. Besides, the ganglion of Meckel, being composed of gray matter, must play an important part as a generator of nervous power, of which, like a galvanic battery, it affords a continual supply; while the branches of the ganglion, under the influence of the diseased trunk, serve as conductors of the accumulated morbid nervous sensibility.

Case I.—Henry Rousset, a French physician, residing in Greenesborough, Caroline County, Maryland, consulted me in the early part of October, 1856, for severe neuralgia, which had for several years rendered him incapable of following his profession. He was of nervous temperament, good constitution, and sixty-nine years of age.

The disease first made its appearance in September, 1851, commencing with severe and lancinating pains about the region of the left cheek and orbit. These pains continued for five or six days, and then disappeared, leaving him almost free from them for about four months. At the expiration of that time, the neuralgic pains again returned with more violence, extending over the region of the left cheek, and continuing almost without intermission, for more than a week. After this exacerbation, the patient again became comparatively free from pain for a short interval; after which, the attacks returned with increased severity, and were renewed with greater frequency, more especially in the cold season, and in damp weather. As the disease progressed, the pain was not confined alone to the eye and cheek, but would also attack the lip and nose; each paroxysm being of longer duration than the preceding. With but slight variation, the disease went on this way to harass and distress the patient for four years. About the commencement of March, 1856, the neuralgic exacerbation assumed a more violent form, marked by excruciating and almost unremitting suffering. He was at this time unable to eat, drink, converse, or laugh, without having a most violent paroxysm, causing him to shriek
in anguish. The paroxysms were more severe during the night than day: sleep left him; his constitution began to give way, and his mind became much enfeebled. The slightest touch upon the surface of the face, a current of air or a mouthful of water acting upon the palate, would throw the patient into a violent paroxysm of agony. During this long period of suffering, all the known remedies which have at times been extolled for neuralgia of the face had been tried—narcotics, tonics, anti-spasmodics, with counter-irritants, and galvanism, without producing any appreciable result. In this distressed condition, the patient, wearied of existence and unable any longer to endure a life so made up of excrutiating torture, presented himself to me for my advice, at the beginning of October, 1856. He expressed himself willing to undergo any operation, however severe, which held out the prospect of relief. Having no internal remedy to propose which had not already been administered, and having no faith in the mere division of the nerve upon the face, I proposed to him the exsection of the trunk of the second branch of the fifth pair of nerves to a point beyond the ganglion of Meckel. Being a physician himself, I explained at length my views (as expressed above) in regard to this malady. He immediately consented to have the operation performed, and desired that the earliest time should be appointed. I consequently agreed to perform the operation the following day, the 16th of October.

Operation.—The principal instruments necessary for this operation are a trephine, the crown of which is three-quarters of an inch in diameter, an elevator, chisels of different shapes and sizes, a leaden or iron mallet, the bone forceps of Luer, small pieces of sponge tied to a stick or a piece of whalebone, and a small fixed trephine of half an inch in diameter, which may be used to perforate the posterior wall of the antrum. The assistants being properly arranged, the patient was seated upon a solid chair, opposite a good light, and was put under the influence of chloroform. The head was rested upon the breast of an assistant, who maintained it in this position. An incision was now made on the cheek, commencing near the internal angle of the eye, on the inferior edge of the orbit, opposite the anterior lip of the lachrymal groove. This incision was carried downwards and slightly outwards, for about an inch, to a point opposite to the furrow on the lower portion of the ala of the nose; another incision, which also terminated at this point, was made, commencing about half an inch below the external angle of the eye, opposite the edge of the orbit, thus forming a V incision, in the area of which is situated the foramen infra-orbitale. The flap thus resulting was thrown upwards, and the branches of the second branch of the fifth sought for; some of these being found, they served as a ready guide to the trunk of the nerve.
This was now isolated from the surrounding tissues up to the point of exit upon the face from the foramen. The lip was now everted, and the mucous membrane detached from the superior maxilla along the line of junction between the cheek and the gum. A sharp-pointed bistoury was now inserted at the apex of the Y incision, into the mouth, and carried downwards, so as to divide entirely the tissues of the cheek and upper lip, along a line passing midway between the ala of the nose and the commissure of the lips. The two flaps thus formed were now dissected from the osseous tissue beneath, one being reflected outwards, towards the ear, the other internally, towards the nose. The whole front wall of the antrum maxillare, with the nerve passing through the foramen infra-orbitale, was thus exposed, and the crown of the trephine was now applied on the anterior wall of the antrum, immediately below the foramen infra-orbitale, and an irregular disk of bone removed, so as to expose freely the cavity of the antrum. The circumference of the foramen, the hardest portion of the canalis infra-orbitalis, was now destroyed by Luer's forceps, and a small chisel. The trunk of the nerve was now traced along the osseous canal in the floor of the orbit, which was broken down with care, so as not to encroach upon the tissues in the cavity of the orbit. Arriving at the back of the antrum, the posterior wall of this cavity was broken down with a small chisel, and the portions of bone removed. The trunk of the nerve was now still further isolated from the other tissues in the spheno-maxillary fossa. The posterior dental nerves being divided, and the dissection being carried still further, the branches given off to form the ganglion of Meckel were reached. These were divided, and also the branch given off to run up towards the orbit. Lastly, by the use of blunt-pointed scissors, curved on the flat side, the trunk of the nerve was divided from below upwards, close up to the foramen rotundum. The hemorrhage was not very profuse, the labial arteries being easily controlled by pressure of the fingers, and the branches of the internal maxillary artery, in the spheno-maxillary fossa, by dry lint, or what is better, the compressed sponge. The lips of the wound were brought together and maintained in place by thirteen points of twisted suture, the German or Carlsbad pins being used.

This severe and trying operation is perfectly justified by the fearful nature of the disease for which it was projected. It is one of those operations which could not be supported by the patient without the influence of chloroform. The handling of so large a nervous trunk with the forceps, and the necessary contact with the hard instruments, while separating it from its surrounding connections, would, I suppose, be beyond human endurance, without the aid of the anaesthetic influence of chloro-
form or ether. For the rest, the effects of the cicatrices upon
the countenance can scarcely be called disfiguring, and the pa-

tient speedily recovers without suffering from much constitu-
tional disturbance.

In this operation, and in those connected with the two suc-
cceeding cases, I was assisted by my colleague Prof. Cox, by Drs.
Proudfoot, Abrahams, Selden, Gülke, and Casseday; and by
my pupils, Messrs. Dougherty, Henry, Scudder, and others.

_CONDITION of the Nerve.—The trunk of the nerve in this case
was much larger than natural in nearly its whole extent. The
neurilemma was very vascular, and the nervous tissue proper
was also engorged and red; the trunk, after its removal, was so
red as to have somewhat the appearance of muscular tissue. The
length of the nerve removed was a little more than an inch and
three-quarters. The lining membrane of the antrum was sound,
as well also as the bones of the antrum and the osseous wall of the
canalis infra-orbitalis.

_PROGRESS of Union and After-treatment.—Oct. 16th. Six hours
after the operation, the patient was visited. His pulse was 100;
there was a slight fever; he complained of thirst, and lemonade
was ordered. He spoke of a desire he had to vomit, which he
ascribed to the chloroform. He stated that he felt slight twitch-
ings on the nose, and at the corner of the lip.

17th (Friday). The patient was remarkably well under the
circumstances; sitting up; pulse 90; tongue lightly covered
with a white fur; complained of pain in the wound, also of
shooting pains in the left eye; he remarked that he could stick
a pin into the upper lip and cheek without causing pain, there
being no sensation in that region. Ordered chicken broth, and
wine and water.

18th (Saturday). Patient improving; wound healing; pulse
natural; no fever; spoke of the numbed sensation in his face.

19th (Sunday). Pulse full and natural; good appetite; par-
took of a beefsteak; in the afternoon four suture pins were
removed; slight pain in the wound; no return whatever of the
neuralgia.

20th (Monday). Cure progressing; healthy suppuration from
wound; appetite excellent; general health much improved.

(Tuesday, Wednesday, Thursday.) During these days the
rest of the pins were removed; patient felt no pain whatever
either in the wound or cheek; wound in the antrum syringed
with tepid water.

25th (Sunday.) Patient attended church; feels no pain what-
ever; incision of the upper lip and cheek entirely healed.

28th. Patient entirely well.

30th. Returned home to Maryland in high spirits, and deligh-
ted at the result of the operation.
December 7th, 1857. Fourteen months after the operation he writes to me that he is enjoying excellent health, and has been entirely free from neuralgic pain.

Case II.—Florence Cordello, a native of Italy, aged 54 years, of lymphatic temperament, chocolate maker by trade, was admitted to the State Hospital on the 14th of September, 1857, suffering from severe *tic-douloureux* of the left side of the face. The following is the account handed to me by the Assistant Surgeon, Dr. Guleke. In the year 1828, the patient contracted a very severe cold from exposure, and about this time he was seized with the pain for the first time. According to his own description, the pain started from the *foramen infra-orbitale*, extending upwards to the forehead, and downwards into the teeth; the paroxysm lasting about ten minutes. He supposed it to be toothache, and had one or two teeth extracted. An interval of eight years took place, when he was again attacked with neuralgic paroxysms, lasting from five to ten minutes. Again, after the lapse of a year, the paroxysms reappeared in a more severe form, and at shorter intervals.

The patient, still believing his teeth to be the source of the disease, had all of them extracted on the left side of the upper jaw, but without any benefit. During these attacks he had been subjected to many kinds of treatment, both internally and externally; he also repaired to some of the mineral springs on the Rhine, but still to no purpose. He continued thus to suffer more or less intensely from the neuralgic paroxysms, for a period of time extending from 1837 to 1846, and with detriment to his general health. In 1846, while passing through the city of Heidelberg, in Germany, he consulted the celebrated Chelius with the hope of obtaining some beneficial result from his advice. That professor divided the nerve as it emanated from the *infra-orbital foramen*, by incisions from the mouth, and six weeks after, again performed the same operation, without any favorable result. During the next six years the patient continued to suffer from the neuralgic paroxysms of more or less intensity.

Oppressed by extreme suffering, he again sought relief from an operation, and in 1852 the nerve was again divided from the mouth by forcing up the lip; the actual cautery being at the same time applied, by pushing the instrument from the mouth upward into the wound as far as the *foramen infra-orbitale*. This operation appeared to give some relief, and during the two succeeding years, the patient's sufferings were somewhat alleviated. About two years ago, the paroxysms returned in the most aggravated form, progressed, and continued without much abatement. He, on the 1st of September last, being in New York, again submitted to an operation for division of the nerve. This time,
the branches of the nerve were divided by cutting through the integuments directly upon the infra-orbital foramen; this operation caused no other effect than insensibility to the touch in the soft tissues near the infra-orbital foramen. Two weeks after this, he entered the State Hospital. The condition of the patient was then as follows: Notwithstanding the repeated division of the nerve, there was sensibility to the touch over the whole region of the cheek; the inner side of the lip alone appearing to be insensible. The patient describes the pain as starting from the foramen infra-orbitale and extending up as far as the ligamentum palpebræ internum, and also to the external corner of the eye; from the latter point, the pains shot down in nearly a straight line to a point about one inch to the outside of the left corner of the mouth, and a little below a line drawn horizontally on a level with the commissure of the lips. The pains also extended backwards, through the more deeply seated portions of the face, shooting from the inner corner of the eye, along the base of the nose, and striking backwards towards the sphenomaxillary fossa. The pain was of the true neuralgic character, and so intense as to drive the patient into a condition verging on delirium. A slight touch on the cheek, the inside of the mouth, or on the hard or soft palate, swallowing, or speaking, excited almost instantaneously the paroxysms in their severest form.

The operation.—The operation in this case was performed after the same manner as the preceding, and was modified only by the greater depth of the antrum and face. There was also more hemorrhage from the sphenomaxillary fossa; this was controlled by compressed sponge pressed into the fossa. Supposing that hemorrhage might return, the lips of the wound were brought together by adhesive plaster, one suture only being used. The other sutures were inserted the following day. The nerve was cut from above downwards. The ganglion of Meckel was drawn out, hanging to the trunk of the nerve.

Progress of Union and After-treatment.—Compressed sponge was applied in the deeper portion of the wound; the external surface was closed with one suture; an anodyne was ordered for the night.

Oct. 11 (Sunday.) Patient slept well during the night; pulse 76; no bleeding; five suture-pins applied; ordered an anodyne.

12th. Patient slept well; no pain whatever; pulse 84; complained of thirst; but little appetite; speaks and swallows without pain.

13th. Slept badly; had an attack of dysentery; pulse 96; felt a slight pulsating pain in the wound, which, however, was doing well; states that there is no feeling over the surface of the left cheek from the inner angle of the eye, descending along the
nose to the lip, and upwards to the outer angle of the eye, including the lower lid; ordered opium and quinine. (Afternoon,) dysentery subdued; pulse 96; more cheerful.

14th. Patient improving; pulse 92; a portion of the pins removed.

15th. Remaining pins removed; wound presents a healthy appearance; pulse natural; slight pain felt in the course of the wound.

16th. Removed the piece of compressed sponge, which had been placed at the back of the antrum during the operation, to restrain the bleeding from the sphenomaxillary fossa.

18th, Patient doing well; eats well, and sleeps naturally.

26th. Still entirely free from neuralgic pain; the whole expression of the face changed from that of suffering and anxiety, to cheerfulness and serenity.

28th. Discharged from the hospital entirely cured, and in good health and spirits.

Dec. 8. Visited the hospital; still free from pain and in good condition.

Condition of the Nerve.—The nerve in this case, as in the previous one, exhibited a similar appearance. It was thickened, vascular, and engorged. The neurilemma and proper tissue of the nerve were both affected. The length of the trunk removed was two inches.

Case III.—Mrs. Mary G. Stevenson, a native of Portsmouth, England, and who had borne children, 55 years of age, of full habit and sanguineous temperament, consulted me in the month of September, 1857, for severe neuralgia of the left side of the face. She had been a resident of the Northern States for thirty years, and had enjoyed generally, remarkably good health.

On the 12th of August, 1851, while eating a plum in her garden, she was suddenly seized with a vivid shock of pain, commencing on her cheek, and passing through her jaw, as if caused by a sharp-pointed instrument, suddenly driven through her face; shooting pains of this character, with intermissions of entire abatement, continued for several days. A dentist was consulted, who attributing the symptoms to the teeth, extracted several of them, but without the slightest benefit to the patient. The paroxysms continued with more or less severity for two months.

At the end of this time, they suddenly abated in their severity, and the respite lasted for about six weeks. Upon hearing of the sudden death of a friend to whom she was much attached, the paroxysms were again renewed; they became more frequent; the intervals were shorter, and the intensity of pain was increased more and more with each succeeding attack. During the
year 1852, the pain and paroxysms still continued with unyielding severity. The *tic* would now last for two and three months, with scarcely any of the intervals which had heretofore occurred. Cold air, the drinking of fluids, the slightest touch upon the cheek, or any sudden mental emotion, would invariably excite the most fearful paroxysms. During the year 1854, her condition was not in any way ameliorated; the pain, if possible, was more severe, and her general health suffered from the want of rest. During the year 1855, the disease progressed with the same severity. In the early part of the year 1856, the paroxysms became still more aggravated; the patient, at times, becoming almost delirious—starting up, running about her room, and screaming like a maniac. In the latter part of September, she sought relief from a surgeon in this city, who divided by subcutaneous incision the branches of the infra-orbital nerve, as it issues from the infra-orbital foramen.

About this time, she also took large quantities of various narcotics, and of the carbonate of iron. After the operation, she experienced some relief. The amelioration continued from October, 1856, until May, 1857, when the paroxysms were again renewed in their severest form.

The pain now became almost continual, depriving her nearly entirely of sleep; she was unable to eat without torture, the act of swallowing invariably bringing on a paroxysm. During these exacerbations, the pain was diffused in different directions, extending from a point a little below the infra-orbital foramen, or from the ridge of the gums, and striking through the superior maxillary bone towards the deeper portions of the face, and towards the orbit, and sometimes extending towards the region in front of the ear. She described the pain as of a beating character at times; each shock succeeding another in rapid succession, as if keeping time with the ticking of a clock. During this long period of suffering, she had been under the alternate care of several physicians; the various remedies most approved of in this kind of disease had all been faithfully and sedulously tried; stramonium, aconite, belladonna, hemlock, opium, morphia, chloroform, carbonate of iron, valerianate of ammonia, and other medicaments had been administered internally; while externally, in addition to the division of the nerve, blisters, sinapis, hydrocyanic acid liniment, tincture of aconite, and chloroform had been resorted to—also electricity and galvanism. At the time I was consulted, she was suffering night and day from repeated and excruciating attacks, and, as she herself stated, she had visited the city to have an operation performed at all hazards, however desperate it might be, if I could only hold out any prospect whatever of its affording relief. Her general health was tolerably good, and she did not complain of loss of appetite.
I explained to her the nature of the operation which I believe to be the only one suited to her case. She immediately assented to submit to it as early as possible.

The operation was performed after the same procedure. The face was in this instance, also, very deep. The hemorrhage from the sphenomaxillary fossa was considerable, and was stopped by a piece of compressed sponge to which a strong ligature was attached, by which it could be removed.

Progress of Union and After-treatment.—Nov. 5. (Thursday evening.) As soon as the operation was completed, the patient retired to her bed. Vomiting came on a few hours after, owing, probably, to the quantity of chloroform which had been used.

6th. Had slept tolerably well during the night; felt very little pain; pulse 80; no fever; complained of some pain in the wound, but had no neuralgic pain.

7th. Left side of the face slightly swollen; puffiness about the eyelids; has no pain; has slept well without any anodyne; states that she feels better than she has for months; pulse 80; skin natural; slight thirst; five of the suture pins removed; line of incision looks as though union by first intention was going on favorably. Still kept on fluids for nourishment—gruel, rice-water, ice-water, toast-water, and chicken tea. Ordered a gentle aperient.

8th. Had slept well; tumefaction of face subsiding; complains of headache; cloth wetted with cold water applied on forehead; same diet continued; pulse natural; removed the sponge which was used to stop the bleeding from the sphenomaxillary fossa; this came away without any difficulty by slight traction, a little blood following. Complains of slight pain in the orbit. Removed six suture pins, leaving one only—that uniting the free border of the lip. Fluid diet as before.

9th. Patient slept well; headache less; pulse 78; no neuralgic pain; a weak solution of the tincture of arnica ordered, to bathe the cheek with; removed the last pin; union by first intention, along the line of incision, complete.

From the 9th until the 16th all has progressed favorably. No neuralgic pain whatever; sleeps well; swelling on cheek diminishing; pain has entirely left the orbit; secretion into the mouth from the wound in the antrum diminished. Ordered a gargle of the tincture of myrrh. Appetite has also returned. Had been sitting up, and walking about her room without any inconvenience. Has taken a little sulphate of magnesia; has not required any anodyne.

Dec. 3. The patient has been progressing favorably up to this time. The wound has healed entirely, the line of cicatrix is becoming effaced; not the slightest trace of tic douloureux remaining. There is no paralysis of the muscles of the face upon the side operated on.
In the case of this patient, the nerve was enlarged, very vascular, thickened and red. Two inches of the nerve were removed. [—American Jour. of Med. Sciences.

The Lancet, (Dec. 19th,) is rather severe upon Lawyers, on account of their ignorance concerning insanity. Hear what the editor says:—[American Med. Monthly.

"On Monday evening, Dr. Forbes Winslow read his paper before the Juridical Society, "On the Legal Doctrines of Responsibility in Cases of Insanity connected with alleged Criminal Acts." There was a much larger attendance at the meeting than usual, the Vice-Chancellor Sir John Stuart being in the chair, and amongst the members present was Mr. Bramwell, as well as many of the most distinguished members of the bar. This is the first time that the attention of lawyers has been directed to this important subject by means of a paper written by a medical man, and communicated to a legal society in which free discussion is permitted; and we cannot but rejoice that a way has at last been opened whereby the views entertained by the medical profession upon what ought to be the legal responsibilities of the insane can be distinctly enunciated and tested by that "touchstone of truth," oral discussion. We look upon the proceedings of Monday night as constituting an era in the history of criminal jurisprudence, and we venture to predict that when a few more such papers shall have been read and discussed at the Juridical Society, it will be impossible for that body to listen with common patience to views to which Mr. Baron Bramwell gave utterance in the course of the debate on Monday. We have always believed that the great differences existing between the doctrines of lawyers and medical men on these subjects depended chiefly on the want of practical acquaintance with insanity under which the former labored; but we confess we were unprepared for the appalling ignorance of the first principles of moral and mental philosophy which was displayed by a lawyer who has within the last two years been deemed worthy of elevation to the bench. In reference to Dr. Winslow's remarks on the distinction between the intellectual and moral feelings, Mr. Baron Bramwell positively declared that, "for his part, he doubted the existence of moral faculties, or a moral sense!" We are acquainted with another learned judge who, on being asked to read a well-known medical work on Criminal Insanity, absolutely declined to do so, stating that he never read anything of the sort, and in fact rejoiced in his ignorance. With such materials to work upon, progress must necessarily be slow, but it will be sure; and the time is not far distant when the judges
will shrink with as much horror from hanging a lunatic as they would now do from burning a witch. Dr. Winslow's paper was, as might have been expected, an extremely well-written and philosophical essay, and was listened to with a degree of attention which, at any rate, argued a desire on the part of the members of the Juridical Society to learn what they could. It was painfully evident, however, from the discussion which followed, that the minds of the audience were unprepared to grasp the great truths laid before them, and we therefore hope that the author will follow up this paper with another, in which, by giving copious details of cases, he may furnish the legal mind with a species of food which it can assimilate more readily than the recondite truths of psychological philosophy."

Researcches on Arsenic.—Dr. Blondlot, of Nancy, has just observed a fact which explains the contradictions encountered by inexperienced chemists in attempts to detect arsenic in connection with organic matters. It is this:—that when substances poisoned have been left to putrefy, some sulphuret of arsenic is formed at the expense of the sulphuretted hydrogen, and this, as is well known, escapes detection by Marsh's apparatus. Sulphuret of arsenic also forms when the suspected matters are carbonized by the action of sulphuric acid after the process of Flan din and Danger. The sulphuret of arsenic may be extracted by washing the carbonized mass with ammonia; this dissolves the sulphuret; then convert the arsenic into arsenic acid (AsO₃) by means of boiling nitric acid, so as to obtain a second solution; this, added to the first, may then be tested in March's apparatus.—[Amer. Jour, of Sci. and Arts.]

EDITORIAL AND MISCELLANEOUS.

Meckel's Ganglion.—In the January number of the Amer. Journal of Medical Sciences, we find a paper from the pen of Professor J. M. Carnochan, of New York, on the Exsection of the Second Branch (Superior Maxillary) of the Fifth Pair of Nerves, for the cure of facial Neuralgia. On account of the originality of the operation, its uniform success, and the heretofore almost hopeless character of this disease in certain forms, we have deemed it proper to transfer from that valuable quarterly, the entire article to our own pages. The operation proposed, and thrice successfully performed, by the distinguished reporter, meets with our unreserved approval. If it is objected by any one, that the operation is horrible, he can be answered, that it is to eradicate a worse than horrible disease, a living and unending agony, to which even death itself is preferable, and that the use of chloroform, insisted on by the
surgeon, removes in a great degree, the strongest objection any one can advance against it.

It is not, however, simply to signify our approbation, that we have begun the present notice. Dr. C., in his remarks previous to detailing his cases, in endeavoring to account for the success of his operation when other modes of procedure had failed—innocently, we are convinced—makes the statement of an opinion in regard to certain points in the physiology of the nervous system, which to our mind, with the experimental facts before him, should have been given with at least, a certain degree of hesitancy, for it involves, either the correctness or the incorrectness of views long held as among the established truths of the science.

After presenting a rapid, but a sufficiently lucid sketch of the many forms of facial neuralgia and of the various operations proposed for their relief, and after reasoning, we think very justly, on the several causes operating to produce a continuance or a recurrence of the affection after measures taken for its relief, he says: "from these views we can perceive how futile the operation of division of the nerve at the foramen infra-orbitale must be. When the trunk of the nerve is extensively diseased, no operation can rationally lead to a successful result unless all the branches emanating from the trunk are cut off from communication with the brain. I believe that in such aggravated cases of neuralgia, the key to the operation is the removal of the ganglion of Meckel or its insulation, from the encephalon. Where even a large portion of the trunk of the second branch of the fifth pair has been simply exsected from the infra-orbital canal, the ganglion of Meckel continues to provide to a great extent, the nervous ramifications which will still maintain and keep up the diversified neuralgic pains. Besides, the ganglion of Meckel, being composed of gray matter, must play an important part as a generator of nervous power, of which, like a galvanized battery, it affords a continued supply, while the branches of the ganglion under the influence of the diseased trunk, serve as conductors of the accumulated morbid nervous sensibility."

Now, the objections which might be urged against the confident statement of the above theory, are many and various; some of which we will here venture to suggest. In the first place, it is at least questionable, whether or not the centres of the Ganglionic System can be productive of sensitive phenomena. Secondly: The nervous ramifications, provided by the Ganglion of Meckel, are not distributed upon parts where the "diversified neuralgic pains are kept up," and especially is this certain, after the trunk of the superior maxillary has been removed; but they are distributed to surfaces and parts located internally, as the fauces and
the roof of the mouth, to the Schneiderian membrane lining the nasal fossæ, and probably, conjunctiva cornea, &c.—at least, so anatomical investigation and experimental physiology have uniformly determined their distribution.

[We here introduce a cut, from Wilson's Anatomy, which illustrates the position and some of the branches and connections of this nervous centre.]

The Cranial Ganglia of the Sympathetic Nerve.—1. The ganglion of Ribes. 2. The filament by which it communicates with the carotid plexus (3). 4. The ciliary or lenticular ganglion, giving off ciliary branches for the supply of the globe of the eye. 5. Part of the inferior division of the third nerve, receiving a short thick branch from the ganglion. 6. Part of the nasal nerve, receiving a longer branch from the ganglion. 7. A slender filament sent directly backwards from the ganglion to the sympathetic branches in the cavernous sinus. 8. Part of the sixth nerve in the cavernous sinus, receiving two branches from the carotid plexus. 9. Meckel's Ganglion (spheno-palatine). 10. Its ascending branches, communicating with the superior maxillary nerve. 11. Its descending branches, the posterior palatine. 12. Its anterior branches, spheno-palatine or nasal. 13. The naso-palatine branch, one of the nasal branches. * The point where Cloquet imagined the naso-palatine ganglion to be situated. 14. The posterior branch of the ganglion, the Vidian nerve. 15. Its carotid branch, communicating with the carotid plexus. 16. Its petrosal branch, joining the angular bend of the facial nerve. 17. The facial nerve. 18. The chorda tympani nerve, which descends to join the gustatory nerve. 19. The gustatory nerve. 20. The submaxillary ganglion, receiving the chorda tympani nerve from the gustatory. 21. The superior cervical ganglion of the sympathetic.

But in the third and last place, the most important objection which now presents itself, in our mind, to Dr. Carnochan's ingenious theory is, that the results of both experiment and observation are diametrically opposed to his deductions.

The trunks and ganglia and branches, of the ganglionic system, have been the subjects of physiological experiment for a period, now extending over more than a hundred years; since the year 1732, when Petit made a division of the trunk of the sympathetic in the dog, down to the present day, we find ranged along the whole interval, a number of illustrious names, whose multiplied and varied experiments have only confirmed his results, and go to prove that this ganglionic system, has but little agency in either sensation or motion, but has mainly confided to it,
the important and more silent processes of secretion and nutrition. Whenever a nervous trunk in any part of this system has been divided, in experiment, or a ganglionic centre disturbed or removed, either by the knife of the physiologist or in the progress of diseased action, there have ever been found, signs of modified nutrition or altered secretion; the only modification of sensation, we are aware of, is that observed by M. Bernard and others, where exaltation of temperature takes place in the parts answering to the branches of distribution of the divided nerve, or of the ganglion which has undergone evulsion. (See Archives Générales.) So much for observations and experiments upon the ganglionic system in general. Now let us examine if any experiments can be referred to, as illustrating the effect of the disturbance of Meckel's Ganglion in particular. There may have been others, but recent research has made us more familiar with those of Dr. Alcock, of Dublin, reported in Todd's Cyclopedia of Anatomy and Physiology. We will premise that Dr. Alcock did not draw the same conclusions from the results of his experiments which we have considered, taking them in connection with analogous experiments on other portions of the ganglionic system, as unavoidable deductions. He instituted the series to determine, as he says, the function of the nerves of Taste; and yet he more plainly established, than any one had done before him, the function of Meckel's Ganglion. In order to determine the nerves of taste, he undertook the removal of Meckel's ganglion from the dog: he attempted it several times and failed at different stages of the operation; but in almost every case, the eye of the same side became bleared within the next two days, a whitish puriform matter exuded from it, in quantity proportioned to the case; and in one instance in which the ganglion was removed, it actually produced opacity of the cornea and ulceration in that structure.

It will be seen, in the above account, that the effect of the injury or removal of Meckel's ganglion was always well marked, and of an entirely different character from that which results from injury or section of any sensitive nerve.

Returning now to Dr. Carnochan's Explanation in his history of the cases reported; we find in none of the incidents there related, anything which indicates the occurrence of any of those results which uniformly have followed upon the evulsion of Meckel's ganglion.—We can account for the absence of these sequences on three different principles of reasoning:

1st. That these results may possibly have obtained in a certain degree, but Dr. Carnochan regarding them as only the effect of the injury (traumatic results) inflicted on the adjacent parts, did not deem them worthy of record. Yet, still, the removal of the ganglion should, according to all antecedents, have produced such an amount of perturbation in
the nutrition and circulation of the eye, as to have compelled his attention, and if they were present, he certainly would have reported them.

2ndly. We might reason that this removal of Meckel's Ganglion in the human subject, (not previously performed, so far as we know, by any one,) is, perhaps not followed by the same results as when it is experimentally done in the case of the lower animals, as the dog; &c.—This, it would be difficult, without farther repetition, to admit; for the admission would strike at the very root of the whole principle of, and destroy the confidence on which, Experimental Physiology is based—viz: the identity of function in the various parts and organs in man and the lower animals.

Then, 3rdly, another explanation suggests itself to us, in this dilemma, which is, that Dr. Carnochan might possibly have been mistaken in his belief, that he had removed the ganglion of Meckel, in the operations reported by him. This last, with all the lights before us, would appear to us the most probable supposition, were it not, that Dr. C.'s high reputation and acknowledged familiarity with the parts in question, which, while they have given the subject importance in our eyes, have also rendered us averse to adopting this remaining supposition as our final conclusion. We therefore respectfully leave the conciliation of the adverse facts, to himself.

Our object, in the foregoing remarks, has been neither to deny, nor captiously to question any conclusions which Dr. C. may have hastily put forth in his report of his remarkable operation. These conclusions of his are but incidental to the main object of his report, and perhaps no considerable amount of importance was attached to them by him, and no great thought or trouble expended upon them. They do not, in any way, lessen the merit of his operations for the relief of neuralgia. We were struck with the remarkable difference in the results reported by him, and in those results which have been so long accumulating in the records of Experimental Physiology. Perhaps, ere this, the discrepancy may have occurred to himself, but his manner of referring to this question, so important in a physiological point of view, was such as to leave it open for discussion. We have endeavored to do this fairly, and we know, in a kindly spirit, carefully avoiding every expression which might bear any semblance to disrespectful or uncourteous criticism.

Physicians and Lawyers. Technicalities before Juries.—We have transferred to our pages, an article from The London Lancet, commenting upon a paper read by Dr. Forbes Winslow before the Juridical Society, "On the Legal Doctrines of Responsibility in cases of Insanity connected with alleged Criminal Acts." These comments bear rather heavily upon the Legal gentlemen on account of their ignorance concerning Insanity.
in its forensic and other aspects. It is, doubtless, true, that the subject of Insanity has received too little attention both from that Profession and our own, and we would commend to the attention of all interested in such subjects, a work which has recently delighted us, viz., "Mind and Matter," from the able pen of Sir Benjamin Brodie. In this work the subject of "Moral Insanity," soon to be discussed before the American Medical Association, is pertinently touched upon, while many other abstruse points are handled with that philosophic clearness and happy faculty of illustration, for which this great man is so remarkable.

We would here remark, with due respect to gentlemen of that learned Profession, that we think, upon the whole, Lawyers estimate too lightly, the important and intimate relations subsisting between the Science of Medicine and their own calling. Medical Jurisprudence, though ably taught at the present day in most of our Schools of Medicine, and we suppose of Law also, is still a branch, in which much greater excellence might most advantageously be sought by both Physicians and Lawyers. Nothing so intimidates the young practitioner of medicine, as the apprehension of having to undergo a medico-legal examination; and yet at the same time, nothing can be less pertinent and more irrelevant than the questions projected at him on such occasions, by the gentlemen of the Bar. They both proceed with great caution. It is delicate ground for both; the one is afraid of developing ignorance before the intelligent audience usually assembled on such occasions, while the other is afraid of developing something which may damage his interest in the case before the intelligent Jury. We know from personal experience, that the Physician is afraid of the examining Lawyer, and we take comfort by strongly opining that the Lawyer is sometimes a little afraid of the deposing Physician. The latter, however, has decidedly the advantage; he need only break such ground as he has had the opportunity and the precaution to prepare for, previous to the opening of Court. A careful study of some work on Forensic Medicine would place them both on a level in this latter regard, for then the Physician would soon learn to appreciate, as well as the Lawyer, what points in the case, were liable to have an important bearing in the evidence about to be elicited, and he too, could prepare and brighten up for the approaching ordeal.

These, however, are not our only comments; but we deem it prudent to premise our remaining remarks by a quotation from that most useful and most treasured of all juvenile journals, "Peter Parley’s Magazine." Here, many will remember, that in each number, there was a department headed—"To our Youngest Readers;" so in all our remarks on this subject, both foregone and to follow, do we address ourselves to our "youngest readers." We would ask, then: Are there not faults which
attach exclusively to our own Profession in its relations to the Courts of Justice? Do we always maintain our dignity and that of our Profession, and are our depositions such as will serve most fully in answering the ends of justice, by clearing the (so to speak) medical obscurities investing it?—The Lawyers may indeed be deficient in certain attainments necessary for the proper administration of Justice in particular cases, but we are, also, certainly often greatly at fault, both in the method and in the wording of our depositions. We sometimes appear to forget entirely that we are not deposing before a body of highly enlightened Physicians, but before a Jury, composed of men utterly unfamililar with medical nomenclature and the technicalities of Science. We couch our answers in such terms as to render them worse than "meaningless jargon" to the Jury, whereas the plainest and most familiar synonyms should, in our opinion, be selected to indicate, the organs, their conditions, the results of injuries or of diseases, and, indeed, everything pertaining to the point in question. What Jury on Earth, except a jury of scientific men, could form any definite idea of the course of a Pistol-ball, for instance, which, "after penetrating the integument above the superciliary ridge, passed through the external table, diploic structure and vitreous layer of the os frontis, then rupturing the three meninges;—dura mater, pia mater and arachnoid, traversed the entire antero-posterior diameter of the cerebrum, and in the post-mortem examination, was finally discovered resting upon the tentorium, in close relation with the torcula Herophili?—Yet pistol-balls, penetrating exactly these structures and pursuing precisely the above course, have been known to produce death, in cases which afterwards became the subject of medico-legal testimony. It would have been more comprehensible to the Jury, and sufficiently definite, to have deposed, that; the ball entered the front part of the head and passed through the brain, and was found, after death, lodged against the back of the head, on the inner side.—Technical terms answer very well for the records of Science—they give a definiteness and an accuracy to our reports, which no other expression can secure; they are the language in which the scientific man thinks, and these words thus become "the current counters of the mind;" but in our humble opinion, they have no place whatever, unless we intend to mystify, in our communications with the uninitiated, and especially have they no place, in medical depositions before any ordinary Jury. Simplicity, laborious simplicity of language, alone is applicable before the Court. Should we inadvertently, or through embarrassment, (for these examinations are sometimes very embarrassing,) use a term which is too professional, we should hasten to render it into one which can be readily apprehended; and by pursuing this plan on all such occasions, we have
little doubt but that, we will secure more confidence and respect for ourselves, and maintain a position of greater dignity for our Profession, before Judges, Lawyers, Jurymen and lookers-on, than we could gain by all the technicalities furnished in all the copies of the whole fifteen editions of "Dunglison's Medical Dictionary."

We may be as "wise as serpents," but we had as well be, as dumb "as serpents," unless we speak in language simple enough to be comprehended by those we address.—We may be like Moses, "learned in all the wisdom of the Egyptians," but if we unfortunately employ the Egyptian dialect, in which to communicate our thoughts to others, the generality of mankind, at the present day, will never be "a whit the wiser" for it. Simplicity of language is indicative of meekness, and meekness we are told, on the authority of Holy Writ, qualifies wisdom itself; for there it is urged, that, we "show, out of a good conversation, our works,—with meekness of wisdom."

Honors conferred on American Physicians.—We collect from various sources, the recountal of Foreign honors bestowed on American physicians. We regard such evidences of appreciation as highly important, as they not only indicate the favor in which Americans are held abroad, but their recountal must have the effect of encouraging our younger brethren, and stimulating them to deserve honors even though they may never receive them;—

"‘Tis not in mortals to command success: We can do more—deserve it."

Among the number of those honored with the Emperor of Russia's marks of favor, we are gratified to find the name of a graduate of the Medical College of Georgia, our friend and fellow-citizen, Dr. W. J. Holt, now of Alabama, who has received still another mark of the Czar's distinguished and distinguishing consideration, since the one reported below.

"Dr. E. B. Turnipseed, now of New-York, a native of South-Carolina, has recently received from the Emperor, through Baron Stoeckel, Russian Minister at Washington, the decoration of the Russian order of St. Anne, of the third class, accompanied by two medals attached to the ribbons of the orders of St. George and St. Andrew, in acknowledgment of his services during the war. The Emperor has also conferred the orders of St. George and St. Andrew upon Drs. Harris, Holt, Smith, Eldridge, Johnson, and Matthews, all American physicians, who were associated with Dr. Turnipseed.

"The cross of the order of St. Anne is a neat piece of workmanship, set in gold and enamel. The decoration of St. George is the highest military insignia in the empire, permitted only to those whose lives have been risked in the service of the Emperor. The St. Andrew ribbon is the highest civil honor. The above facts we gather from the New-York Daily Times."—[Surg. Reporter.
Honors for Dr. Jackson—"We are gratified to record this morning, that another honor has been bestowed upon Dr. Charles T. Jackson of this city, in token of appreciation of the services which he has conferred upon humanity as well as science, by his discovery of anaesthesia by ether. The King of Prussia has bestowed upon him the cross of Chevalier of the Red Eagle, making the fourth order of merit which he has received for the same cause, besides one gold medal. The cross of Chevalier of the Red Eagle, sent to Dr. Jackson, is of solid silver, and is of the Maltese form. It bears in the centre, on obverse, the figure of the red eagle, with shield on breast and a wreath of laurel in his talons, this being executed in fine colored enamel. On the reverse, the crown of Prussia, over the initials of Frederic William, the King. The cross is suspended on a white ribbon, bordered with a broad stripe of cinnamon color.

"We subjoin the letter of the Prussian Minister, notifying Dr. Jackson of the new honor conferred upon him:—

"New York, 30th November, 1857.

"Sir:—With reference to my letter to you of the 5th of May last, I have the pleasure of informing you that his Majesty the King of Prussia has been pleased, agreeably to the wish expressed to me in your letter of the 18th April last, to confer upon you the order of Chevalier of the Red Eagle, as an acknowledgment of your merits in the discovery and the application of Anaesthesia.

"The said decoration I enclose hereby, with the printed 'Thema,' marked No. 19,396, which I beg you to fill up by your hand writing, and to send it back to me to Washington.

"I have the honor to be, with high consideration,

"Your obedient servant,

"Ferd. Gerolt,
"Prussian Minister.

"Chevalier Charles T. Jackson, Doct. of Med. at Boston."

[Boston Advertiser, Dec. 2.]

Dr. Jackson has recently also had conferred upon him, by the King of Sardinia, "the orders of Saints Maurice and Lazarus," in recognition of his eminent services to humanity, and the patent and decoration of the order have been sent to him.

"We have certainly every reason to be proud (says the Buffalo Med. Journal,) of the appreciation which the services of our countrymen met with, during the last war, from Russia and the French. The restless spirit of a true American is so powerful that it cannot be subdued even by the studies and experiences of medical life, and the opportunities open to the medical man for gratifying this propensity, are so few, that a war such as the last, is a perfect Godsend. We see this exemplified in the numberless applications for appointments in the army and navy, where, on this account, the examinations have been made so rigid, and the standard of merit has been placed so high, that a comparatively small proportion are accepted. Wherever our countrymen go, however, they leave the impress of characteristic energy and zeal in doing what they have to do, as is exemplified by the gratifying testimonials which have been presented to them by the Russian Emperor."