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MEDICAL COLLEGE OF GEORGIA.

"Je prends le bien où je le trouve."

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ORIGINAL AND ECLECTIC.

ARTICLE I.

A Clinical Lecture upon some of the Effects of Intemperance; delivered at the Augusta City Hospital, by L. A. DUGAS, M. D., and written out by special request.

GENTLEMEN,—

The case of the woman we have just left in a moribund condition, is well calculated to arrest our attention. This woman, who now seems to be about 40 years of age, and who presents to us so lamentable a picture of the effects of vice, is one of the frail sisterhood, who, having in her youth forfeited her social position, fled from the parental roof to a den of infamy, and has been ever since endeavoring to drown her remorse in alcoholic and other narcotic potations. She was a short time since taken from a miserable negro hovel and brought here to die and to be buried at the expense of the city. You may have observed when we first saw her, a few days ago, that she was still able to speak, although her articulation was slow and somewhat difficult—that she lay upon her back without the power to move either her limbs or her trunk, but still retaining her sensibility as well as her mental faculties comparatively unimpaired—that she was not laboring under paralysis, properly so called, but that she was suffering from a real exhaustion of nervous power throughout the whole system, which had been gradually pro-

gressive, and without any indication whatever of local organic disease. She now appears to be asleep with her eyes half open, but breathes quietly, and presents none of the phenomena of apoplexy. She has passed into this state gradually since you last saw her, and her small and rapid pulse indicates an early termination of this process of resolution. The energies of life, long undermined by dissolute habits, have gradually yielded, and she now dies evidently from mere nervous exhaustion.

It is in the presence of cases like these that the physician realizes in its fullest force one of the evils—perhaps, alas, a necessary evil—of the social system of refined civilization; I mean that which condemns to perpetual infamy the unfortunate female, who, in a moment of infatuation yields to the designs of an artful and heartless deceiver! She soon realizes her dreadful error, and yet dares not, as she had always done before, appeal to the parents who would affectionately overlook any other guilt and endeavor to palliate it—for she knows that this is an unpardonable sin, even in the sight of those who gave her birth! Oh, if she could only be allowed to throw herself upon her knees, implore their forgiveness, and receive from them even a look of kindness, she would do so, continue to dwell with them, and probably lead a virtuous life the remainder of her days. But, no; she must fly, or be driven from the midst of those she loves, and be an outcast among the vilest refuse of society, where, with a broken heart and lacerated conscience, she naturally seeks relief in the obtunding use of narcotics of one kind or another! The effects of these are before us—we here behold, however, only *one* of the sad consequences of intemperance, and, if you will pardon me for dwelling upon a topic, perhaps trite, I will take this opportunity to make a few comments upon some of the evils of intemperance to the individual who indulges in this vice, to his offspring, and to his race.

I beg leave, Gentlemen, at once to say that I am not one of those who think that a good cause is ever benefitted by exaggeration and by positions unsustained by truth. I would not therefore have you to give credence to the ridiculous stories about alcohol being found in the ventricles of the brain, about the spontaneous combustion of drunkards, &c.—nor would I tell you that a moderate and well regulated use of intoxicating

beverages is always injurious, when the most casual observation might falsify the assertion. It is of *intemperance* I wish to speak, and not of *temperance*,—and yet, I am free to say, that if a man cannot drink without drinking too much, he ought not to drink at all.

There are two forms of intemperance—the one periodical and the other continued. Those addicted to the former will drink profusely for days or weeks, until the stomach rebels and rejects the potations, and they cannot take any more. They will then suffer greatly, mentally and physically, a few days, and gradually get over their "spree," to resume it again after the lapse of weeks, months, or even years. This is the most inveterate, the most incurable form of intemperance. Indeed, I may say that I look upon such cases as utterly hopeless, for I have never known a single instance of permanent reformation, in those addicted to periodical intemperance. The victims of this form are more violent and uncontrolable, more disagreeable and dangerous to society, more subject to delirium tremens, and more liable to permanent insanity, than habitual inebriates.

The continued form of intemperance is that in which the individual habitually takes too much; some will attend to their business during the day more or less efficiently, and yet be surfeited every night—others are sober enough to attend to business only in the forenoon—and, finally, there are many who can scarcely ever be found entirely sober. I recollect a case in court in which a will was set aside upon the testimony of the neighbors that the maker had not been sober enough in ten years to know what he was about! The will had been executed six or seven years before his death. And yet this man lived seventy-five years, and had been intemperate all his life! I believe it to be a general rule, that the habitually intemperate live longer than those who are only periodically so. But the habitual inebriate is more liable to liver disease, to dropsy and to rheumatism—neither of which affections have I ever known cured under such circumstances. The periodical drunkard is more apt to be carried off by an attack of mania-â-potu, or of some other acute disease. While, with most persons intemperance induces more or less of plethora and corpulency, there are some in whom it produces an opposite effect, and we

find these pale or sallow, and thin. When it terminates in dropsy, this seems to be in consequence of hypertrophy of the cellular tissue of the liver, by which the portal veins are compressed to such a degree as to impede the free passage of blood, and to cause its undue accumulation in the intestinal canal and its investing membrane. In such cases the vessels may relieve themselves by an abundant secretion from the mucous surface, constituting diarrhœa, or by an exhalation into the peritoneal cavity, so as to produce dropsy. Either of these symptoms may be, in general, regarded as the precursor of early dissolution.

Intemperance deeply affects the nervous system of animal life, as is evinced by the uncertain gait, the tremulous hand, convulsions, and various painful diseases. But the brain, this great seat of intellect and of the moral perceptions, reveals its baneful influence under the forms of mania-â-potu, perverted reason, and moral depravity. Who has not seen instances in which the noblest intellect and the most refined sense of propriety have been thus changed into stupid vagaries and knavish as well as brutal propensities? With reason dethroned and the moral perceptions blunted, the victim drags a miserable existence himself, and embitters that of all who loved and esteemed him!

Let us now look at some of the effects of Intemperance upon the offspring and upon the race. I think it susceptible of easy demonstration, that the children of an habitual inebriate will have but little stamina—that is to say, that their powers of re-resistance to morbid influences will be more or less impaired, and that they will therefore be more liable to disease than they would otherwise have been; that they will often be scrofulous, and occasionally insane, or idiotic. These effects will, moreover, become more and more apparent the longer the parent has been a drunkard—so that if he have a large family during his intemperance, the deterioration of his children will be progressive, and the last may be so puny as never to reach maturity, although the first may be comparatively healthy. Nay, there are some drunkards, whose own constitution being poor, will rear a few children, and then lose in infancy or childhood all those they may subsequently have. Just reflect a little upon the condition of the families in your respective neighbourhoods

and I think that each one of you will recall to mind some illustration of the correctness of these propositions.

Well, Gentlemen, what is true with regard to the influence of intemperance upon the offspring of the first drunken parent, becomes most painfully so if the offspring himself follow the example of his father and become also a drunken parent. The issue of this second generation of drunkards will, in all probability, be few in number, and their stamina will be so much impaired that it will be with the utmost difficulty that any of them can reach maturity. Let us follow this third generation, and if it perchance also take to the bottle, it will be the last of that family—for I do not hesitate to proclaim it as a *law* of almost universal applicability, that *three successive generations of drunkards will leave no issue!* The third generation may have children, but not one of these will be reared to manhood!—This may appear to you a startling announcement; but I believe that you will find it based upon truth. As I have long since entertained these views of the effects of intemperance upon families, I would like to adduce some of the evidence I have collected from personal observation, were it not manifestly improper to lift the veil from the private history of families who have passed away. But we can, without the least impropriety, study the history of families, in connection with that of the race to which they belong, and if you will bear with me a few moments more, I will endeavor to illustrate my proposition by a reference to the sad history of our aboriginal savages.

I need not repeat what you all know—that tribe after tribe of the children of the forest have vanished from before the sun—and still continue to do so with awful rapidity. Why is this so? Is there anything in their physical organization that incapacitates them for the perpetuation of their species, or race, if you prefer the term? Certainly not. Then, I again ask the question, why is it so? In order to answer this, let us examine the influences that have been brought to bear upon this race in the different portions of our continent, and let us see if they have suffered equally in these several regions.

America has been colonized by two classes of people: in the one we find the Spaniards, the Portuguese, and the French; in the other the British and their American descendants. Now

how have the Indians fared under the dominion of these two classes? Under the former they have increased and multiplied—whereas, under the latter they have been annihilated! The Spanish, the Portuguese, and the French, are temperate people, and the British and Anglo-Americans intemperate—and while the former have propitiated the good-will of the savages, have fraternized with them, have civilized and christianized them, probably as far as their nature will permit; the latter have done neither, but have, on the contrary, introduced among them their own vices and intemperance, and driven them from their hunting grounds to perish like outcasts. Contrast the history of the Indian in Mexico, with that of the same race in the United States—or even in Georgia. Towards the close of the last century the population of Mexico was about four millions, of which the pure Indian element constituted about two millions.—The population of that Republic is now about seven millions, of whom at least four millions are pure Indians, two millions mixed races, and one million pure castillians. Sixty years ago, one half of the State of Georgia was peopled with savages—and where are they now? With the exception of a small remnant of Cherokees and Creeks, who have been driven across the Mississippi, these mighty tribes have ceased to exist! In South America, it is highly probable that the Indian population is fully as great as it ever was, if not greater. Under the French dominion, the Canada Indians prospered as they do in South America; but they have been deteriorating and dwindling away rapidly ever since the British have acquired those provinces.

Look at the influence of the boasted civilization introduced by the drinking races among the Sandwich islanders! The third generation of drunkards is now living there, and it is estimated that in fifteen or twenty years more there will not be left a solitary representative of that people. The sailor with his bottle has doubtless had more followers than the missionary with his Bible in that unhappy land. Look at the dissolute and drunken habits of our frontier Indians, and you cannot be long in discovering the true reason of their extinction. The same baneful influence operates upon the free blacks who seek refuge in the large cities at the North. The climate, may, it is true, account in some degree, for the great mortality among them;

but intemperance is unquestionably their greatest enemy. The philanthropist will look in vain for a solution of these stubborn facts, unless he attribute them to intemperance, the most potent destroyer of mankind.

I hope, gentlemen, that you will pardon the length of the digression into which I have been insensibly led from the case under our special consideration. I did not intend to make you a temperance address—but I never see a victim of this awful propensity, without feeling that something ought to be done to put a stop to it. I have therefore endeavoured to direct your attention in as forcible a manner as I could under the inspiration of the moment, to some of its pernicious effects. You are destined, I trust, to exert some influence upon the communities in which you may fix your abode. No member of society has it more in his power to do good, than the intelligent and moral physician. The subject before us affords a noble field for the exercise of enlightened benevolence. Unite your efforts to extirpate this, as you will do to stay the ravages of other diseases. Let us look upon intemperance as *a disease* and treat it as such. Must it not indeed be a veritable mental derangement, that would lead a man irresistibly, as it were, to the destruction of self, of family and of race? Let us but call it a species of *insanity*, and the remedy will suggest itself immediately.

That intemperance is a disease, will, I think, be very generally conceded by enlightened physicians. Like other morbid conditions, it may be inherited, or acquired. When derived by inheritance, the patient may not be so much to blame as when it is acquired by improper indulgence. It nevertheless, in all cases, reveals a morbid condition of the brain, not unlike that which constitutes other forms of monomania. The patient is as irresistibly impelled to drink, as some monomaniacs are to thieve, notwithstanding all the influences of education and of other incentives to good conduct. Some will say that it is only a depraved appetite, or a want of proper self control—but this does not change the matter. This depraved appetite, or this inability to control one's propensities, is a morbid state—often as much deplored by the patient himself, as by his friends. I have frequently heard these patients in their lucid intervals, declare most solemnly that they would cheerfully give all they possess-

ed to get rid of this dreadful propensity. And I believe that they were sincere.

But how shall we treat such cases? Place them in an asylum as you do those affected with other forms of insanity; and let them undergo such treatment as may be deemed best adapted to the restoration of the brain and nervous system to their proper and normal functions.

I am aware that, under existing circumstances, this cannot be done. We need legislation upon the subject, before we can carry out our views; and I can see no good reason why some men should be sent to the lunatic asylum, and their property be placed in the hands of trustees, until they be relieved of certain forms of insanity, while others equally injurious to society, and unable to manage their affairs, in consequence of intemperance—another species of insanity—are allowed to run at large, squandering their estate, embittering the lives of their family, annoying whole communities, and committing every variety of crime. I verily believe that a majority of the inmates of lunatic asylums would be found less dangerous and less annoying to the communities from which they were sent than any equal number of drunkards.

I think that the legislature of New York has taken the initiative in chartering a voluntary Asylum for Inebriates. This is a step in the right direction, and may of itself be productive of much good. But inebriates ought to be put upon the same footing as other lunatics. Let a writ of lunacy bring them before a jury—and upon conviction, let them be ordered to the asylum, and their estate be placed in the custody of trustees until their recovery—and I firmly believe that permanent cures may in very many instances be the result.

The sufferers from intemperance are entitled to our sympathy, and *we* should come to their relief, however loathsome they may be in the sight of the non-professional members of society. Let us not apply to them degrading epithets and treat them like brutes; but on the contrary, extend to them the hand of kindness and the offices of christian charity. It is thus alone that we may obtain their confidence and become useful to them.

The fact being once established by the legislation of the country, that intemperance is a disease, and that it can only be treated

successfully in an institution humanely and properly devised for this special purpose, much of the odium that now attaches to this condition, and which might otherwise result from the confinement, will be removed. I believe that such a system would do more good than all our temperance societies. The combined influence of both, however, would in all probability erase from our national escutcheon one of its foulest blots. If you agree with me, let us unite our endeavors to bring about in our respective communities such a state of public opinion as may result in the legal establishment, in every state, of Asylums for the Inebriate.

ARTICLE II.

Sub-Carbonate of Bismuth.—New Mode of Preparation. By ROBERT BATTEY, M. D., of Rome, Ga.

The attention of the Profession having been called to the sub-carbonate of bismuth—in connection with the operose process of Prof. Hannon, of Brussels, for obtaining it—it would seem desirable that a simple and easy mode of manipulation should be more generally known.

The repeated fusion of the impure bismuth with nitrate of potassa, to free it from arseniurets and sulphurets, with which it is usually contaminated, may well be replaced by the simple solution in nitric acid, and precipitation (as sub-nitrate) by distilled water. This precipitate, if not absolutely pure, is sufficiently so for all medical purposes—it should be well washed with distilled water. By this process the impurities are oxidized, and rendered soluble in water, or left behind undissolved by the acid; in both cases they are gotten rid of very satisfactorily.

To prepare the sub-carbonate, dissolve the sub-nitrate in a sufficiency of nitric acid to effect the solution when warmed—decant the clear liquid, and add it slowly to a filtered solution of carbonate of soda—collect the precipitate upon a filter—wash well with distilled water, wrap in filtering paper, and dry by a gentle heat.

For the physician, it will be convenient to use the sub-nitrate which he has upon his shelf. If it be entirely soluble in nitric acid, without effervescence, and is not clouded on the addition of a few drops sulphuric acid, it may be esteemed pure; otherwise, decant the clear solution and precipitate with distilled water to render it so.

Rain-water, boiled and filtered, may be used in place of the distilled water.

A sample of the sub-carbonate, made by the above process, was subjected to Marsh's test, and found entirely free of arsenic.

[By reference to the October number of the 13th volume of this Journal, page 625, Mr. Hannon's mode of preparation will be found. Compared with the above, it is difficult and inconvenient, only practicable to the regular chemist—while that proposed and effected by our contributor is easily adopted by the ordinary practitioner, and is therefore, in our opinion, preferable.

This sub-carbonate of bismuth, if it answers the expectations which we have every right to entertain from a soluble salt of this metal, is destined to become a most valuable therapeutic agent. The insoluble salt, the sub-nitrate, is every day becoming more extensively and variously applied, and the results of its action, in a variety of cases, are often very surprising—even startling to the practitioner. Its action, however, is generally slow, and it is inefficient in many cases on account of its insolubility. "The sub-carbonate is soluble in the gastric juice, its action is rapid, it produces no sensation of weight at the stomach, it rarely constipates, colors the stools less than the sub-nitrate, and may be employed for a long time without oppressing the stomach. The action of the sub-carbonate appears to be sedative during the first days of its employment, and subsequently to excite all the phenomena which result from the action of tonics."

We quote further, from the article above mentioned, in order that our readers may have before them, in connection with this new mode of preparation proposed by Dr. Battey, the whole amount of facts at present known in relation to the therapeutical action of the sub-carbonate of bismuth.

"As to its therapeutical action, it may be noted that all cases of gastralgia consecutive upon phlegmasia of the digestive passages, cases in which the tongue is red and pointed, and cases in which the digestion is laborious and accompanied with putrid or acid eructations, or in which there is a tendency to diarrhœa or spasmodic vomiting, demand the employment of the subcarbonate of bismuth. This salt is also required in the vomiting of children, whether caused by dentition or succeeding to frequent fits of indigestion, and in the diarrhœa of weak children, especially when occurring at the time of weaning. One great advantage possessed by the sub-carbonate of bismuth is, that it neutralizes the acids in excess which are found in the stomach. The sub-nitrate, as is well known, fails always in this respect. In all the cases where the subcarbonate has been taken, the pain in the digestive passages is first found to disappear; then the eructations cease, together with the vomiting or diarrhœa; the digestion becomes less and less laborious, the tongue gradually receives its normal form and color; and if the use of the subcarbonate is continued, the appetite increases from day to day, the yellow tint of the countenance disappears, and the face becomes colored at the same time as it ceases to be shrivelled.

The subcarbonate of bismuth is perfectly insipid, and excites no repugnance. It is given before meals. Adults take it in a little water, and children in honey. It may also be made into lozenges. The dose for adults is from one to three grammes, taken three times a day in increasing doses."]

ARTICLE III.

*Classification of Febrile Diseases by their Relation to the Nervous System.** By HENRY F. CAMPBELL, M. D., Professor of Anatomy in the Medical College of Gerogia—and Chairman of Committee on Nervous System in Febrile Diseases.

During the examination of our subject since the time of our appointment as a special committee, by this Association, we have been, at each step, more and more impressed with its importance, and at the same time with the extreme difficulty attending its full, clear, and thorough elaboration. "A man," says Lord Bacon, "must collect facts, in order to know the *law*

* A partial Report read before the American Medical Association, Nashville, May, 1857.

of facts;" diligently and earnestly engaged for the year past, in collecting and interrogating the facts which have a bearing on the important subject of Febrile Diseases, in the relation assigned us for examination, we have scarcely had time to do more than *note*, here and there, the gleam of truth which has been evolved during a bare hasty collocation of data; much less to determine satisfactorily any fixed law in relation to the vast subjects involved in the investigation. That such laws will be recognized, and that the careful generalization of the facts will be productive of important, fruitful results, we have already seen enough fully to persuade us. Pleading then the magnitude, as well as the embarrassments of the subject, we ask of this Association the previlege of having our special committee continued for another year, allowing us at present to lay before this body a few conclusions arrived at, as the result of the investigation in its present state of progress.

I. As all the normal phenomena of the living organism are known to occur under the superintending influence of the nervous system, and are dominated by it, so it is but rational to regard all morbid actions as being more or less influenced in their manifestations by *aberrated* nervous action. In that class of diseases ordinarily designated fevers, our researches and observations have led us to the confident belief that the above law applies with sufficient prominence to constitute the basis of their classification, and we would here respectfully claim for it, that it is the only *reliable* basis of their clasification, and further, that in its more extended application, it will hereafter be found to constitute what may be called par excellence, *the Law of Febrile Diseases.* Simply to assert the recognition of this law, and to suggest a new and more comprehensive classification of Fevers based upon it, is the sole object of the present brief exposition.

II. As in the Nervous System, we recognize two grand departments, viz: 1st. The Cerebro-spinal System, all the normal actions of which are subject to cessations and interruptions; and 2dly. The Ganglionic System, all the normal actions of which are of a continuous and *un*interrupted character, so in the manifestations of febrile diseases, do we distinctly recognize two grand distinguishing characteristics respectively typifying the *normal* actions of these two systems of nerves: thus a character of *par-*

oxysm obtains in certain cases, while a character of *continuousness* as plainly marks the others.

III. Again: as in the Cerebro-spinal System, we find that its normal action pertains almost exclusively to sensation and to motion, with only a secondary and comparatively somewhat remote influence (which we have termed Excito-Secretory) upon nutrition and secretion, while in the normal action of the *Ganglionic* System the entire function is known to be, to preside over nutrition and the secretions; so in *paroxysmal fevers* do we find intense pain, modified sensation, and symptoms allying them to neuralgic and convulsive diseases very prominent, while in *continued fevers*, modified nutrition and altered secretion, are the marked and most prominent characteristics. We would, therefore, *announce* as our classification of febrile diseases, two grand divisions of fevers corresponding with the two grand divisions of the nervous system, thus:—

I. CEREBRO-SPINAL FEVERS.

All *Paroxysmal.* The secretions und nutrition only *secondarily* affected.

II. GANGLIONIC FEVERS.

All *Continued.* The secretions and nutrition *primarily* affected.

I. Under the head of CEREBRO-SPINAL FEVERS, we would place the whole family of Paroxysmal Fevers, whatever type they may assume,* and also the various forms of neuralgia, which are nearly always intermittent, as well as the *sthenic* forms of Traumatic Fever, together with the Fever accompanying simple Pharyngitis, Pneumonitis, Dysentery, and many other diseases of malarial districts.

II. Under the head of GANGLIONIC FEVERS, OR FEVERS OF THE SECRETORY SYSTEM OF NERVES, we think that we find ample ground for bringing together many diseases heretofore widely estranged from each other. Thus, as the archetypal

* The primitive location of these fevers, in the cerebro-spinal system, was developed by Prof. L. D. Ford, of the Medical College of Georgia, in the *Southern Medical and Surgical Journal*, in 1836, and called by Maillot, "Cerebro-spinal Intermittent Irritations."

forms of ganglionic fevers, we place at the head of the list, typhus and typhoid fever,* then, allied to these in various degrees of affinity, but all *equally*, in the one essential element, that *they present themselves as manifestations of disease through the Ganglionic System*, are variola, scarlatina, rubeola, varicella, and many other forms of eruptive fevers, heretofore not classified by nosologists. All of these last diseases are marked by fever of a *continued* or *non paroxymal* character, all present marked aberrations of nutrition and secretion, and each has its own peculiar eruptive character; and, further, each one is definitely *self-limited in its duration*, as yet, no remedical interference having been found competent to arrest or shorten their progress.

We will here make the remark, that we do not wish to be mistaken as classifying these diseases in relation to their eruptive feature, but only as signifying a recognition of the common influence of the secretory system of nerves in all of them *by* the eruption. In typhoid fever itself, it must be recollected that the *eruption* is not a prominent feature, and yet, we consider the secretory system of nerves primarily deeply affected, and place this at the head of the list, notwithstanding the fact, that the ganglionic implication manifests itself *but little* upon the skin and mainly in the intestinal canal.†

It may be asked, if all of these fevers are due to aberration in the innervation of the ganglionic or secretory system of nerves, why should they present such marked specific differences? A satisfactory answer may be given thus: that specificity of morbific cause must rationally be expected to secure a specificity of morbid manifestation; thus the virus of variola, when taken into the system, gives rise to the morbid manifestations peculiar to smallpox, while the morbific influence (of whatever nature it may be) of typhoid fever, produces a specific form of disease entirely different, but not the less for that reason, locatable in

* As first developed in an essay entitled: "*An Inquiry into the Nature of Typhoidal Fevers, based upon a Consideration of their History and Pathology*," presented to the American Medical Association at its Session of May, 1853, by Henry F. Campbell, Chairman of Committee on Typhoid Fever. The implication of the ganglionic system of nerves, in typhus and typhoid fever, has been, in the above essay, argued *at length*.

† See Inquiry, &c., pp. 53 and 54.

parts of the organism entirely controlled by the secretory nervous system.

BLENDING OF TYPES OF FEVER.—Much interest has been taken by this Association, for the last five years, in the subject of the Blending of the Types of Fever. We would claim for the present Pathology and Classification of Fevers, that it is the *only* one which admits of any plausible explanation of the mysterious phenomena comprehended under the term, "Blending of Types;" thus, a cerebro-spinal or *paroxysmal* fever may assume, under certain circumstances, some of the characteristics of some one or other of the forms of *continued* fever. This we hold can be explained by attributing it to a propagation of the irritation, originally located in the spinal marrow, to the ganglia of the secretory system. Then, again, the reverse may obtain; we may find, and do often find, in *continued* fevers, especially in malarious districts (whether the case be typhoid fever, rubeola, or scarlatina,) *intermittent* paroxysms, interrupting the even course of the *continued* form, sometimes obscuring the diagnosis, and making it necessary to modify the treatment. The use of quinine, it is well known, will generally break up these *paroxysms*, but not in the least modify the course of the *continued* fever. In the first of these cases, the morbific influence has been "*centripetal*," and in the second "centrifugal," and thus the "blending of types" may be rationally and philosophically explained.

We are aware that, in presenting thus a condensed exposition on the obscure subject of "The Nervous System in Febrile Diseases," without more argument and fuller elaboration, we are running the risk of being charged with "bare assertion," but we will honestly avow that each proposition has been earnestly and carefully considered, keeping constantly in view all the phenomena of febrile diseases—comparing them faithfully with the normal actions of the two grand departments of the nervous system.

It will be remarked, that we have not attempted to define what is the exact morbid condition of the nervous centres, or of the nerves, which gives rise to the phenomena in the two classes of fever. Such a process of reasoning we have carefully abstained from, because such a discussion would be conver-

sant about subjects which cannot as yet be said to have been brought within the legitimate domain of science. We can only as yet trace the effects to their causes; it is a different thing to discuss the nature of the causes themselves; and as Professor Whewell has made a distinction between the *Laws* of Phenomena and the *Causes* of Phenomena, so we only here claim to have recognized a *Law*, leaving the more recondite inquisition into the *Causes*, for a more advanced and enlightened age of science. In conclusion, we will say, we may have been, in the above exposition, unfortunately obscure in presenting to others what has become a clear and well defined conviction to us; but in the pertinent language of another,* whose deep philosophy has charmed us, while it has been of unspeakable service to us in many of our investigations, we will say, that "to our mind this doctrine stands firm and impregnable—assailable by no known fact consistent with every established truth."

ARTICLE IV.

Indigenous Races of the Earth; or a few Chapters of Ethnological Inquiry; including Monographs on special departments of Philology, Iconography, Cranioscopy, Paleontology, Pathology, Archeology, Comparative Geography, and Natural History: contributed by ALFRED MAURY, FRANCIS PULSZKY, and J. AITKEN MEIGS, M. D., presenting fresh investigations, documents and materials; by J. C. NOTT, M.D., and GEO. R. GLIDDON, authors of "Types of Mankind. Philadelphia: J. B. Lippincott & Co. 1857. Large 8vo., pp. 655.

Although we have had this volume upon our table for some length of time, circumstances have prevented an earlier notice of it. As indicated by the title page, it is made up of contributions from several writers—and we may add, from men of well established erudition. The first paper is by A. Maury, "on the distribution and classification of Tongues,—their relation to the geographical distribution of Races; and on the inductions which may be drawn from these relations." The second by T. Pulszky, being "Iconographic researches on Human Races and their Art."

* Dr. M'Cosh, on the Method of the Divine Government.

The third by J. A. Meigs, on the "Cranial characteristics of the Races of Men." The fourth by Dr. J. C. Nott, on "Acclimation; or the comparative influence of Climate, Endemic and Epidemic diseases, on the Races of Men." The fifth by G. R. Gliddon, entitled, "The Monogenists and the Polygenists; being an exposition of the doctrines of schools professing to sustain dogmatically the unity or the diversity of the human races; with an inquiry into the antiquity of mankind upon Earth, viewed chronologically, historically and palæontologically." And, finally, the sixth, also by Mr. Gliddon, is a "Commentary upon the principal distinctions observed among the various groups of Humanity—and on the Geographical distribution of the Simiæ in relation to that of some inferior types of Men." It will thus be seen that however much these disquisitions may interest the Naturalist, the contribution by Dr. Nott is the only one which strictly comes within the domain of medical studies, and should alone, therefore, occupy our attention as conductors of a periodical devoted exclusively to medicine. We may, nevertheless, be permitted to express our appreciation of the learning displayed by the other contributors, and although we cannot admit the correctness of all their views, we derived especial pleasure from the perusal of Mr. Pulszky's interesting sketch of the history of the fine arts, as illustrative of national instincts or proclivities.

The following extract will indicate the object of Dr. Nott's paper: "In the preceding chapters, man has been viewed from opposite stand-points; and each new group of facts would seem to lead more and more directly to the conclusion, that certain distinct types of the human family are as ancient and as permanent as the Faunas and Floras that surround them.

"We propose in the present chapter, to investigate of *Acclimation;* that is to say, of Races in their relations to Climate, Endemic and Epidemic Diseases; and if it should be made to appear that each type of mankind, like a *species* of animals or plants, has its appropriate climate or *station*, and that it cannot by any process, however gradual, or in any number of generations, become fully habituated to those of opposite character, another strong confirmation will be added to the conclusion above alluded to."

While admitting that man, in common with certain of the

lower animals and plants possesses a sufficient degree of "constitutional pliability" to enable him to bear great changes of climate, the author objects to the opinion entertained by many, that he (man) is a cosmopolite in the strict sense of the word. The Jews, who originally inhabited a region in which they were exposed to cold winters and warm summers, are well adapted to the dispersion to which they have been subjected, but "the Eskimau on the one extreme, and the Negro, Hindoo, and Malay on the other, have no power to withstand the vicissitudes of climate encountered in traversing the 70 deg. of latitude between Greenland and the equator. Each race has its prescribed salubrious limits. The fair races of northern Europe, below the arctic zone, of which the Anglo-Saxon are impure descendants, will serve as another illustration. These races are now scattered over most parts of the habitable globe; and in many instances, they have undergone far greater physical changes than the Jews. The climates, for instance, of Jamaica, Louisiana, and India, are to them much more extreme than to the Jewish race. The Israelite may be recognized anywhere; but not so with the Scandinavian and his descendants in the tropics. The latter becomes tanned, emaciated, debilitated; his countenance, energy, everything undergoes a change: and were we not familiar, from daily observation, with these effects of climate upon northern races, we should not suspect the original ancestry of many of the present inhabitants of hot climates. In these cases we behold, not simply a healthful modification of the physical and intellectual man, but a positively *morbid degradation.* The pure white man carried into the tropic, deteriotes both in mind and body; the average duration of his life is lessened; and, without fresh importations, his race would in time become extinct. When, however, his descendants are taken back to their native climes, they revert to the healthful standard of their original types: the latter may have been distorted, but can never be lost, except in death". (p. 356.)

The author then refers to the deteriorating effects of climate upon the English in Hindostan, the Indian Archipelago, Africa, the West Indies, and South America; upon the Dutch in Batavia and other Indian Islands; upon the French in Algeria, &c.; in neither of which colonies can the European cultivate the soil

nor engage in other laborious pursuits with impunity. "The negro, too, obeys the law of climate. Unlike the white man, his complexion undergoes no change by climate. While the white man is darkened by the tropical sun, the negro is never blanched in the slightest degree by a residence in northern latitudes. Like the quadrumana of the tropics, he is inevitably killed by cold; but it never changes his hair, complexion, skeleton, nor size and shape of brain."

With regard to the effects of the climate of our Southern States upon Europeans, we find the following language: "Let us suppose that a thousand inhabitants of Great Britain or Germany should be landed at Mobile about the month of May, and one-third placed on the hills, one-third in the town, and the remainder in the fenny lands around the latter, and ask what would be the result at the end of six months. The first third would complain much of heat, would perspire enormously, become enervated; but no one would perhaps be seriously sick, and probably none would die from the effects of the climate. The second third, or those in the city, if it happened to be a year of epidemic yellow fever, would, to say the least, be decimated, or even one-half might die, while the resident *acclimated* population were enjoying perfect health. The remaining portion, or those in the fenny district, would escape yellow fever, but would, most of them, be attacked with intermittent and remittent fevers, bowel affections, and all forms of malarial or marsh diseases; fewer would die than of those in the city, but a large proportion would come out with broken down constitutions."..... "In our cotton-growing States, the malarial climate is by no means confined to the low and marshy districts; on the contrary, in the high, undulating lands throughout this extensive region, wherever there is *fertility of soil*, the population is subjected more or less to malarial diseases. These remarks apply, as will be seen further on, more particularly to the white population, the negroes being comparatively exempt from all the endemic diseases of the South."* (p. 363.)

* A medical friend (Dr. Gordon) who has had much experience in the diseases of the interior of Alabama, South Carolina, and Louisiana, has been so kind as to look over these sheets for me, and assures me that I have used language much too strong with regard to the exemption of negroes. He says they are quite as liable as the whites, according to his observations, to intermittents and dysentery."

We must differ with the learned author when he affirms that negroes are comparatively exempt from all the endemic diseases of the South. Such is certainly not the case in this section of Georgia, and in the adjacent portions of South-Carolina, and Alabama, where every planter knows that his negroes suffer equally with the whites, annual attacks of intermittent and remittent fevers, dysentery, malarial pneumonia, &c. We had occasion a number of years ago, to point out the same error in the work of a distinguished Southern medical writer, and have since found these views to be pretty generally entertained by the physicians on our seaboard. The error seems to have originated in the fact that negroes are comparatively exempt from fever upon the rice and cotton plantations of the *low-country*, the field of their professional observation; and this fact had led us long since to the inference that the *low-country fever*, is essentially different from that of the up-country. In the low country negroes become acclimated and comparatively exempt from fevers, but in the up-country no length of residence, nor even nativity, affords the least immunity either to the white or to the black man; on the contrary, we may safely affirm that the liability to *our* fevers are in a direct ratio with the length of time the individual has resided in the malarial district, and that *natives* are the most susceptible. With yellow fever and perhaps low-country fever, one attack usually secures immunity from a second: but with up-country fever, an attack one year is almost invariably followed by similar ones the subsequent autumns, and the oftener it is repeated, the more susceptible does the individual become. The negroes born and reared upon the plantations of the middle portions of Georgia and South-Carolina, are fully as liable to fever as new comers, and, we think, much more so. We know, from long observation, that in this city (Augusta), while we frequently see fevers among natives (white and black), it is exceedingly rare that we meet a case among our Northern people, who constitute a large portion of the permanent mercantile population. These views are sustained by the mortuary statistics of this city through a long series of years, published in the Southern Medical and Surgical Journal (volume for 1836). The low-country fever, like yellow fever, must then be essentially different from any form of fever in the upper sections of

the Southern States. What constitutes the *pathological* difference is yet to be determined, and should be studied by those who have the opportunity. It is an interesting subject of research, worthy of the attention of some of the eminent pathologists of the sea-board.

When penning the remarks just made, we did not expect to find the author advocating pretty much the same views a little farther on. In order, therefore, to do him justice, we shall quote his own language:

"The fact is so glaring, and so universally admitted, that I am really at a loss to select evidence to show that there is no *acclimation* against the endemic fevers of our rural districts. Is it not the constant theme of the population of the South, how they can preserve health? and do not all prudent persons, who can afford to do so, remove in the summer to some salubrious locality, in the pine-lands or the mountains? Those of the tenth generation are just as solicitous on the subject as those of the first. Books written at the North talk much about acclimation at the South; but we here never hear it alluded to *out of the yellow-fever cities.* On the contrary, we know that those who live from generation to generation in malarial districts become thoroughly poisoned, and exhibit the thousand Protean forms of disease which spring from this insidious poison.

"I have been the examining physician to several life-insurance companies for many years, and one of the questions now asked in many of the policies is, '*Is the party acclimated?*' If the subject lives in one of our southern seaports, where yellow fever prevails, and has been born and reared there, or has had an attack of yellow fever, I answer, '*Yes.*' If, on the other hand, he lives in the country, I answer, '*No;*' because there *is no acclimation against intermittent and bilious fevers, and other marsh diseases.* Now, I ask if there is an experienced and observing physician at the South who will answer differently? An attack of yellow fever does not protect against marsh fevers, nor *vice versâ.*

"The acclimation of negroes, even, according to my observation, has been put in too strong a light. Being originally natives of hot climates, they require no acclimation to *temperature,* are less liable to the more inflammatory forms of malarial fevers, and suffer infinitely less than whites from yellow fever: they never, however, as far as my observation extends, become proof against intermittents and their sequelæ. The cotton planters throughout the South will bear witness, that, wherever the whites are attacked with intermittents, the blacks are also

susceptible, though not in so great a degree. My observations apply to the region of country removed from the rice country. We shall see, further on, that the negroes of the rice-field region do undergo a higher degree of acclimation than those of the hilly lands of the interior. I know many plantations in the interior of Alabama, South Carolina, Georgia, Mississippi, and Louisiana, on which negroes of the second and third generation continue to suffer from these malarial diseases, and where gangs of negroes do not increase." (p. 376.)

And again: "Certainly, negroes do suffer greatly on many cotton plantations in the middle belt of the Southern States; and I have seen no evidence to prove that negroes can, in this region, become accustomed to the marsh poison; and my observation has been extensive in four States. A question here arises: Is there any difference in types of those malarial fevers which originate in the flat tide-water rice-lands, and those of the clay-hills, or marsh fevers of the interior? I am inclined to think there is." (p. 381.)

Having already extended this notice of Dr. Nott's able and interesting paper, beyond the limits we had intended, we must bring it to a close, by adding the author's conclusions.

"1. That the earth is naturally divided into zoological realms —each possessing a climate, Fauna, and Flora, exclusively its own.

"2. That the Fauna of each realm originated in that realm, and that it has no consanguinity with other Faunas.

"3. That each realm possesses a group of human races, which, though not identical in physical and intellectual characters, are closely allied with one another, and are disconnected from all other races. We may cite, as examples, the white races of Europe, the Mongols of Asia, the blacks of Africa, and the aborigines of America.

"4. That the types of man, belonging to these realms, antedate all human records, by thousands of years; and are as ancient as the Faunas of which each forms an orginal element.

"5. That the types of man are separated by specific characters, as well marked and as permanent as those which designate the species of other genera.

"6. That the climates of the earth may be divided into PHYSICAL and MEDICAL; and that each species of man, having its own physiological and pathological laws, is peculiarly affected by both climates.

"7. That no race of man can be regarded as cosmopolite; but that those races which are indigenous to latitudes intermediate

between the equator and poles, approach nearer to cosmopolitism than those of the Arctic or the Torrid Zone.

"8. That the assertion, that any one race ever has, or ever can be, assimilated to all physical or all medical climates, is a hypothesis unsustained by a single historical fact, and opposed to the teachings of natural history." (p. 401.) D.

On Scarlatina. A Clinical Lecture delivered in Paris, by M. Trousseau. (Translated from the *Gaz. Hebdomadaire.*) Concluded from page 730, vol. xiii.

We have now come to a more difficult part of the question—to the consideration of that which I have called *latent* (fruste) *scarlatina.*

You know what is meant in archæology by a latent (fruste) inscription; that a greater or less part of it is wanting, a line, a letter, a point even only remaining. In speaking of pneumonia, we have seen that that disease could be latent, that often there was only a word in the symptomatological phrase, and that from this word alone the physician should find out the whole phrase. It is with the physician as with the numismatist and archæologist. At the commencement of their studies these have to read from well preserved medals, from stones intact, while the student of medicine requires that all the symptoms which usually characterize a disease should be found in a case which falls under his observation. After a while, however, the archæologist only requires a word, a letter, to be enabled to decipher the effaced inscription. So it is with the more experienced physician; he divines from a single symptom of a disease the whole disease. Of all the latent diseases, scarlatina presents these *desiderata* the oftenest.

In 1829, one of my friends told me that scarlatina prevailed in a little village near Mennecy, in the department of Seine-et-Oise, and principally in the communes of the Chateau de Villeroy. Wishing to study this epidemic, I could do it more easily from the fact that as the chateau was perfectly isolated, the evolutions of the disease could be easily followed.

I saw individuals of the same family affected with sore throat, without eruption, and although they remained in the midst of those who were afterwards attacked with scarlatina, these persons escaped. Their sore throat was violent, accompanied with high fever, redness, and desquamation of the tongue. Others, who were attacked lightly, being slightly unwell for eight or ten days, sudenly became swollen, and passed blood. Albuminuria was not known at that period. These facts struck me, and caused

me to think these persons having, some of them the eruption and consecutive anasarca, others the anasarca of sore throat only, were differently attacked, but that all had the symptoms of scarlatina.

Three years since at Meaux, an analogous fact came under my observation, occurring in the same house. A young girl, fourteen years old, was taken with a violent scarlatina, characterized by croupal angina, the eruption, and an intense fever. A few days afterwards, her sister was also taken sick with the same symptom; almost at the same time a chambermaid fell sick; two or three days after, a man-servant, who staid in the room the whole day, was affected with a severe sore throat, with croupal exudations on the tonsils, redness and exfoliation of the tongue, high fever, but without cutaneous eruptions. It was clear to me, as the physician of the family, M. Saint Armand, also thought, that all these patients had scarlatina, and in fact the man-servant, although remaining in the midst of the epidemic locality, did not take the disease with which he had been inoculated in the same degree as the rest of the family; while the scarlatinous phase was complete in the others, in him the inscription was latent (fruste). There still remained a young boy, six years old. Suddenly, without having been sick a single instant, he became swollen. M. Blache and myself were called in consultation, and we recognized the anasarca of scarlatina presenting itself at the outset; it was considerable, and accompanied with hæmaturia. The father and mother, who were very attentive to the health of their son, declared that in the morning he had breakfasted as usual. This child had neither fever nor eruption, and the disease manifested itself in time, by the single symptom which we have indicated. Eight days afterwards he had a double pleurisy, and came near dying. Called again in consultation, M. Blache and I recognized this affection; four days after, we found one of the sides of the chest cured, while the other had taken on an enormous development. We performed paracentesis of the chest, and drew off one pound and a half of pus. During two to three months, Dr. Saint Armand made iodine injections into the pleura; notwithstanding a pulmonary perforation, the child recovered, and is now in good health.

I have not myself had any cases like these. Graves cited several, a few of which I shall translate for you.

"Young F—— was taken home from school when scarlatina prevailed. He complained of sore throat upon swallowing, headache, nausea. The next day the tonsils were swollen, and he experienced a greater difficulty in swallowing. His pulse was quick,—skin hot, but no traces of eruption. These symptoms continued three days without increasing in severity, and then disappeared. Before he entirely recovered his two sisters and his

father were attacked. The eruption appeared upon the skin in his two sisters, and ended in desquamation, while in his father there were only a few red points upon his skin, without ulterior desquamation."

"Master O—— also returned from school with scarlatina. During his sickness his two sisters and his brother were taken with the same disease. In all these it manifested itself under the form of small eruptions, or maculæ, upon the skin. At the same time the man-servant and maid-servant suffered from violent angina, with high fever, which lasted several days."

These facts are identical with those I have myself seen. In the following, which occurred in the family of a physician, you will observe that the disease developed itself by anasarca:

"The following case," says Graves, "was communicated to me by a very eminent practitioner of Dublin. A few years since scarlatina broke out in the family of this physician, and attacked all the children, with the exception of a young lady who, although taking care of her sisters during their sickness, had no symptom of it. When they were convalescing, the family was sent into the country for the sake of the change of air, the sister who had not been sick accompanying them. There, to their great astonishment, she was suddenly taken with that peculiar anasarca which is observed in those who have had scarlatina. Her father, who took care of her during this sickness, was struck with this singular fact: he paid particular attention to it, and became convinced that it was a latent scarlatina."

"These cases, and those of which I have already spoken," continues Graves, "are very interesting in a pathological point of view; they tend to prove this fact, that, in many circumstances, diseases produced by contagion do not present the same series of symptoms which ordinarily characterize them."

These extracts from the English author prove that the same things occur in Dublin as in Paris. It is very certain that you will see these latent scarlatinas; you cannot, therefore, become too familiarly acquainted with them. Graves insists upon these facts as a means of demonstration, and he positively indicates that these are cases of scarlatina; for, says he, the disease being essentially contagious, it would be impossible that those who only had the sore throat or the anasarca should be alone exempt in the midst of their family sick with scarlatina, which had attacked all the rest.

Treatment.—The eruptive diseases, whether the eruption takes place on the skin or upon the internal viscera, as is the case in putrid or typhoid fever, which is an eruptive disease of the digestive tube, the eruptive diseases have a fatal course; that is to say, they have determined phenomena against which we cannot

cope with success. In the treatment of these diseases, the physician should not forget this grand fundamental fact; that whatever may be said, he cannot prevent the progress of a putrid fever, nor can he cut short a case of variola or rubeola. Doubtless, unskilful attention can retard or modify, in a certain manner, the appearance of the eruptions; but whatever means may be employed, art is powerless against the evolution of an exanthematous fever, whatever it may be. In these diseases, more than any other, the physician should be *minister naturæ et interpres;* for in these diseases, more than any other, *quicquid meditetur et faciat, si naturæ non obtemperat naturæ non imperat;* his duty, when everything progresses regularly, should be essentially passive, *otiosus crisium spectator*, as Fizer said; if no severe symptom arises, he has only to fold his arms; in a few days the disease will have accomplished its evolution naturally.

When the eruptive fevers become in some particulars menacing, our intervention, let us avow it, is generally of little avail. In some circumstances, however, we can be useful. These fortunate circumstances in which art interferes efficaciously, are more frequently met with in scarlatina and rubeola than in variola and putrid fever.

I shall show you what the physician can do in the first of these diseases. Above all, it is well to recollect that scarlatina varies greatly in its form and severity; that sometimes it is of an extraordinary mildness, sometimes, on the contrary, its malignancy renders it a terrible disease, the equal of the plague and typhus. This should be taken into account, for success should not be attributed to the medication which he may have used, the honor of which belongs entirely to the benignity of the epidemic itself; nor should his failures be laid to the treatment which could not prevail against the essentially malignant nature of the disease.

Epidemics can be generally severe for a whole population; they can also be severe for a single family. The malignancy can be circumscribed, so to say, within a small compass; but in these cases, it is malignant for almost all those it attacks within the circle to which it is confined. In this connection I will recall to your recollection the sad fact, published lately in the English journals, of scarlatina carrying off, in one week, six or seven children of a clergyman of York.

It seems that the poison with which those attacked with scarlatina are infected, has a particular activity, or that the constitution of each of the patients is disposed in a special manner for receiving it. Whether the malignancy depends upon the nature of the disease, upon its epidemic character, as Sydenham and others say,—whether it depends upon the particular constitution of the individuals, according to the opinion of Stoll, this grand fact always remains, namely: that when scarlatina breaks out in

a family, with its terrible phenomena, destroying the first it attacks, it is well to mistrust and fear it, for it will probably take off other victims; and also when its first severity has moderated,—when it appears from the start benign, it is well to hope, for generally it will remain benign.

This should be said before entering upon the study of the treatment, in order to put you upon your guard against yourselves. I cannot repeat it too often that, if the disease is in itself severe, the best medication will most frequently fail; if it is in itself benign, recovery will most usually result, and the most inappropriate medication will not be injurious.

There is a point upon which all epidemiographists agree; it is, that the *antiphlogistic treatment*, bleeding, too energetic purgatives, and rigorous diet, are pernicious. There is not, perhaps, an author,—I speak of those who have followed, studied, and described many successive epidemics,—who has not established the danger of this treatment in severe scarlatina, and even when, in the progress of this disease, acute inflammatory phenomena arise, such as phlegmons of the tonsils, of the lymphatic ganglions, of the cellular tissue, that bleeding and leeches do not generally succeed, probably because they are directed to symptoms of a septic disease,—of a disease of a bad character, *mali moris*,—one of those malignant diseases in which the antiphlogistic treatment is always invariably injurious.

Still these epidemiographists, in giving the sad results of their experience,—in condemning the antiphlogistic means of which they have observed the bad results,—these epidemiographists teach you that, if the energetic purgatives are hurtful, the milder mercurials, the neutral salts, given in a proper proportion, are of real utility. They say that, under the influence of laxatives which produce two or three passages a day, the febrile movement will be most usually moderated. However, they are far from pretending that the disease is always cured by these means.

We have seen that, in Scarlatina, and particularly when at its height, patients seem to succumb to a nervous exaltation, at least to nervous disturbances, arising either in the centres of organic life, characterized by an extraordinary elevation of the temperature, vomiting, obstinate diarrhœa, or in the centres of animal life, manifested by delirium, coma vigil, subsultus tendinum, and convulsions. For these nervous symptoms there is a treatment, the value of which has been proved by experience,—a treatment which the physician adopts, however, with great caution. I speak of the *cold affusions* extolled by Currie.

Currie was the first to recommend their use. He treated a large number of patients afflicted with the severe form of scarlatina, and had considerable success from the use of cold affusions. Emboldened by his fortunate results, he insisted upon this mode

of treatment, and established its application as a general rule in scarlatina accompanied with severe nervous symptoms, such as delirium, convulsions, diarrhœa, excessive vomiting, and a high temperature of the skin.

How should this treatment be applied? The patient placed naked in an empty bath-tub, three or four pails of water, at a temperature of 20° centigrade (68° Fahrenheit) are thrown over his body. This affusion lasts from a quarter of a minute to a minute, at the longest. The patient is immediately enveloped in blankets, placed in bed without being wiped off, and properly covered; reaction generally follows in fifteen or twenty minutes. The affusions are repeated once or twice in the twenty-four hours, according to the severity of the symptoms. They should be administered at that moment when the nervous phenomena assume such an intensity as to excite our fears of imminent danger; they are to be repeated until these symptoms cease, relieving the mind of the physician from further cause of alarm.

To suggest in private practice a treatment apparently so bold, one would have to have grown old in practice, to be beyond the necessity of being sustained by public opinion. He should be fortified by a deep sense of duty—by a consciousness of doing well, in order to strive successfully against the popular prejudice,—of all prejudices perhaps the most unfortunate,—which demands that, in eruptive fevers, patients should have warm drinks and be wrapped in more coverings than they are accustomed to in health. There is no prejudice, we say, which is more unfortunate than this; there is none which more frequently occasions the death of the patient. Yet the voice of Sydenham, which has spoken for two hundred years,—the authority of the most distinguished physicians who still object to it, resist in vain.

You understand, then, the difficulties which the young physician will have to encounter who believes he should have recourse to these cold affusions. These difficulties are the greater because it is in the severe cases, where the scarlatina threatens to be fatal, that the indications of this treatment are found. In adopting this treatment, you know that the disease gives one chance of recovery to two of death, and you can foresee, if you are not successful, what will be the opinion of the family afflicted with the loss they have sustained.

I have employed these affusions for a long time. I tried them in private practice before adopting them in hospital practice, for I have never made use of anything there which I had not previously tried in my private practice. As to these cold affusions, I can assure you that I have never used them without gaining some beneficial effect from them. I do not pretend to say that all my patients were cured. Far from it. I have lost a great many, but they died notwithstanding the treatment. The affu-

sions, instead of being injurious, seemed to moderate the symptoms and retard the fatal termination. By acting in this way in private practice, my reputation ran great risks, and I have been often badly recompensed for doing what my profound conviction dictated; but I remained firm in my course which duty marked out for me, and I persist in it up to this hour, for a stronger reason than formerly; for now, my position being established, my responsibiltty does not influence me as much. I understand your fears—not that you doubt the advantages of the treatment which you dare not adopt, but because, while consulting before all the interest of the sick entrusted to your care, you yet have to watch over your own reputation, which is so easily affected at the commencement of your career as practitioners. Still, when the voice of duty speaks to you, when your conscience tells you that this treatment you dare not adopt because it is contrary to the prejudices of the world, is a useful treatment, it is still necessary to try it, it is right that you should do it. But then, instead of resisting this prejudice face to face, instead of taking the bull by the horns—if you will pardon me this vulgar expression—avoid the difficulty, by administering these useful cold affusions, leaving the patient, and especially the attendants, in the belief that the affusions are warm.

Scarlatina, as I have already said, especially in its malignant form, has, of all diseases, the highest elevation of the temperature of the body. In some cases, I have also told you, it is as high as 106° Fahrenheit, consequently about six degrees above the normal temperature. Now, do not make use of the affusion, but of simple lotions, and with water at seventy-seven degrees Fahrenheit, that is, 29° less than the temperature of the skin of the patient; relatively it is cold. Put the patient upon a cot-bedstead and sponge the body with this water, first in front and then behind, and then replace him in his bed, wrapped in blankets, as I have already indicated. Although less efficacious than cold affusions, this kind of affusion has a positive effect, and following its application, you will perceive that the skin, which was before very dry and extremely hot, will become in half an hour cooler and moist. What is still more remarkable, is the diminution in the frequency of the pulse. Instead of beating in the infant 160, 170, 180; in the adult 140, 150; it falls to 130, 135, 140, in the former; to 120, 115, in the latter; consequently, 30, 35, 40, pulsations less. At the same time the cerebro-spinal phenomena diminish in intensity, the vomiting and excessive diarrhœa, symptoms depending upon disturbances of ganglionary innervation, also diminish. Thanks to these lotions, then, you obtain, for a short time I grant, a remarkable sedation. I say for a short time, for in two or three hours the symptoms sometimes return, when the lotions, or affusions, should also be repeated two, three, or four times in the twenty-four hours, and sometimes five or six days in succession.

What becomes of the eruption? You will observe this fact, which will surprise the assistants and reconcile the family to the lotions, the affusions which they mistrusted; that, almost invariably, from the beginning of the affusion, the skin, which was pale, or of a faint red color, becomes more developed. These affusions, therefore, not only do not decrease the eruption, but bring it out, so that the parents themselves notice it, and as long as danger continues, they are often the first to solicit its employment, unable to refuse to recognize the amelioration which this method of treatment has produced, particulary struck with the fact that the eruption reäppeared more distinct. Yet, in verity, if the result of this amelioration is not favorable, if death takes place, they forget the encouragement they gave you, they accuse you of the misfortune which can only be attributed to the chararter of the disease.

To meet these terrible symptoms of scarlatina, other internal remedies can be administered with advantage. And first, the *ammoniacals*, the carbonate of ammonia, spirits of mindereri, which is an acetate ammonia, mixed with some empyreumatic products; these two medicaments in the dose of ½ a drachm to 1 drachm, —ammonia itself in the dose of 10 to 20 drops,—can be very useful. I shall say as much of *musk*, of which 3, 4½, 6 grains, and even 15 grains, is given in the course of twenty-four hours. These means should be used with prudence; they constitute an accessory treatment in those cases where the cold affusions are employed; when they are not employed, they comprise the principal therapeutical means.

The *angina of scarlatina*, which is accompanied with croupy exudations, when they are not very abundant, is not very dangerous. But in *malignant* scarlatina the disease attacks the throat, and generally the physician cannot prevent it.

I have tried cauterizations with nitrate of silver, with chlorohydric acid; I have tried borax in collutories; I have given chlorate of potassa within, and I must say that all these remedies have very often failed in my hands. However, of all these therapeutic agents, the most to be depended upon, chlorohydric acid, applied twice a day, has seemed to be of some use. This caustic is to be used with great prudence and precaution. In children, during the stuggle to overcome their resistance, you may burn the tongue, the teeth, the internal walls of the mouth, and thus increase the evil without cauterizing as it should be done. By holding the child properly, and opening his mouth by means of a spatula, you can sometimes obtain good results from these cauterizations, touching the diseased parts twice a day, for five or six days, with a camel's hair pencil saturated in the acid. Insufflations of alum and tannin, used alternately, are also very useful. As to that form of angina which is not observed during the height

of the disease, but comes on suddenly about the ninth or tenth day, with an abundant exudation from the nose, with deafness, or severe pain in the ears, fœtid breath, frequent pulse, and great depression, as to that angina which is probably only a *diphtheritic complication* of scarlatina, it resists all our efforts. All kinds of treatment which I have tried have failed—nasal injection with styptics, with the solutions of sulphate of copper, of sulphate of zinc, nitrate of silver, with the decoction of rhatany, with tannin, the cauterizations of the throat—all have failed ; patients almost invariably succumbing, whatever you do. In these cases you must rely upon generous treatment, upon sulphate of quinine, coffee, and especially upon a strengthening alimentation.

And now of the *anasarca of scarlatina* and the symptoms which complicate it. I have already stated that it follows less frequently the severe forms than the benign eruptions. Often it constitutes a complication of the greatest importance, in other cases this complication is not serious. When it is slight, I have also said that hygienic means, rest in bed, lukewarm drinks, a moderate diet, is all that is necessary. When, however, the urine contains blood, acid drinks, lemonade, the decoction of uva ursi, sweetened with the syrup of turpentine, small quantities of digitalis, mild laxatives, will meet these symptoms. But when the hæmorrhage is quite large from the commencement, when the anasarca increases with great rapidity, it will be necessary to resort to other means to prevent the threatning symptoms.

Sulphuric acid given internally either pure or in alcohol (eau de rabel), in the dose of ½ a drachm to 1½ drachms a day, in a draught sweetened with syrup of rhatany, will be found useful when the hæmorrhage is abundant.

The anasarca which comes on rapidly and in a great degree, is ordinarily accompanied with convulsions, which sometimes destroy the patient with the first attack. Energetic *purgatives* are, in these cases, useful, by causing a part of the serum effused into the celular tissue to be thrown out upon the surface of the intestine. It is also important to place the lower limbs of the patient hanging over the side of the bed, and the head raised by pillows. By this means imminent convulsions may be prevented. But in some cases these convulsions are present from the beginning, coming on without giving warning of their approach. The patient complains of a severe headache, difficulty in the sight, upon one side alone or both together, sometimes ringing in the ears and deafness. In these cases, scarifications of the inferior extremities may be of advantage. What is sometimes better, in attaining the same result, is the application of very large blisters upon the *legs*, and not upon the thighs. After seven or eight hours, phlyctenæ will be formed, and when they are opened serum will flow abundantly from them, relieving the patient, and enabling him to pass the crisis of his anasarea.

If the convulsion takes place, give, during the attack, *musk* in connection with small doses of *belladonna*. For a child eight or ten years old, musk, in the dose of from 3, 4½, or 6 grains; belladonna in that of one-tenth of a grain for a single dose. At the same time you should make use of a means I have employed for more than twenty years, and from which I, as well as other physicians, have experienced great service: I speak of the *compression of the carotids*. This compression requires to be carefully made, and in a certain manner. When the epileptiform convulsion predominates upon one side, the compression should be exercised upon the opposite side. If, then, the convulsion be predominant upon the right side, it is the left carotid which should be compressed, and reciprocally if the convuision be predominant upon the left side the right carotid should be compressed. If the convulsion be equilateral the compression should be alternately produced upon the two carotids,—I speak, be it well understood of the primitive carotids—and even simultaneously upon both, if it is possible to do so without interfering too much with the respiration of the child.

This compression is easier to perform than you would suppose. Place yourself so that the right hand can compress the left carotid, and the left hand the right carotid; push aside the sterno-cleido-mastoid muscle, while with the back of the ungual phalanx you push aside the trachea, and you will feel the beatings of the carotids. Seizing it, then, from within with the ends of the fingers, carry it backwards a little and press it against the vertebral column. You will instantly perceive that it is compressed, by the absence of pulsation in the corresponding temporal artery, by the paleness which sometimes suddenly succeeds to the previous redness of the child's face, and again by the fact that in some fortunate cases the compression is no sooner established than the eclamptic convulsion ceases. Continue this compression upon one of the arteries for fifteen to twenty minutes, then compress the other. If you have an aid that can assist you, his assistance will be useful to you in this operation; the mother, whose solicitude renders her so intelligent, can replace you. By this means, having patience, the convulsions accompanying the anasarea of scarlatina can be arrested, in a certain number of cases, in a few hours.

There still remains that form of anasarea which if it becomes chronic, can be relieved. When the convulsions, which are so often mortal, have ceased; when the hæmaturia, which precedes or accompanies the anasarca has passed, give the patients *diuretics*, nitrate of potassa principally, in connection with small doses of digitalis, give also a remedy prescribed by Graves, the iodide of potassium in large doses.

In some cases the anasarca and the albuminuria, which are ordinarily cured in fifteen days, three weeks or a month, can be-

come the commencement of Bright's disease. The acute symptoms disappear, the albuminuria persists; if it persists a month or six weeks after scarlatina, beware of this symptom: it indicates the commencement of Bright's disease; the kidney is infiltrated with fibroplastic tissue, after six weeks the fatty element predominates, and a few months later the patient succumbs to this new affection.

Finally, there are a few more serious symptoms which are developed in this last period of scarlatina about the same time as anasarca. They are the *serous effusions of the pleura and pericardium.*

For these the repeated applications of fly-blisters, and if the hydrothorax or the hydro-pericarditis is very great, puncture may be useful.

In large pleural effusions, thoracentesis sometimes becomes necessary after a very few days. But often, as I have already observed, with the first puncture, even when the effusion has not existed more than ten, fifteen, or twenty days, you will find a lactescent serum, sometimes pus, already formed. Then you have empyema, a formidable complication, which you can frequently cure in young persons by puncture, and repeated iodine injections; but which, in adults, notwithstanding these means, you will rarely cure.—[*American Med. Monthly.*

Artificial Rupture of the Amniotic Sac during Labor.—Objections to the Practice. By B. F. Richardson, M. D., Adjunct Professor of Obstetrics and Diseases of Women and Children, in the Medical College of Ohio.

[The above being a subject of much interest, we present to our readers Dr. Richardson's second paper, from the *Western Lancet.*]

In the last number of this Journal, quotations were made from numerous standard obstetrical authorities, which, directly and by fair implication embody the doctrine, that the amniotic sac is the only proper and efficient agent in the production of dilatation of the os uteri; that after it is well dilated, or dilatable, there remain no important objections to rupturing the membranes; and that, therefore, it is undesirable to maintain the integrity of the amniotic sac beyond that period. At the conclusion of that article we promised to show, "that one of its most important uses remains unfulfilled until the presenting part has passed through the superior strait; and that in all natural, uncomplicated labors, especially primipera, the membranes should not be ruptured at any time."

If this proposition can be sustained by argument and numer-

ous facts, the inference is patent, that the views entertained and inculcated by obstetrical writers generally, in regard to the office and treatment of the amniotic sac, are well calculated to seriously mislead those who exercise their memory more than their reason. He who conceives of no objection to the rupturing of the membranes after the os uteri is well dilated, will, almost certainly, rupture them, in expectation of exciting more vigorous uterine contractions.

Perhaps, on no other point connected with obstetrics has there been so much misinterpretation of facts, assumptive reasoning, and erroneous conclusions, on the part of writers, as in regard to the mechanism and phenomena of the first stage of labor. As the views entertained by Professor Murphy on this point are in accordance with those of most writers, and as he has elaborated the argument through which these views have generally been derived, a review of his positions will be appropriate, in the course of my remarks.

Is the amniotic sac the only proper and efficient agent in the production of dilatation of the os uteri?

Are there any important objections to rupturing the membranes after complete dilatation of the os uteri has taken place?

The discussion of these questions will embody the answer to the first: *Is it desirable to maintain the integrity of the amniotic sac during labor?*

Prof. Dewees, by an ingenious argument, attempts to show that, ordinarily, the amniotic sac has nothing to do in the production of dilatation; but unfortunately he admits, in part, that which he undertakes to disprove; and moreover is guilty of palpable inconsistency. At the conclusion of paragraph 515, he writes: "but in this admission, let it be recollected that I consider the waters as useful by their equal pressure upon the lower part of the uterus, and by distending, and at the same time, by the same agency, weakening, the circular fibres of the part, and thus indirectly favoring the dilatation of the mouth of the uterus." Now turn to paragraph 518. "When the os uteri does dilate, it is not by its edges being stretched mechanically; it is an absolute inability in the circular fibres to maintain a state of contraction, and, for the time being, may be considered as paralyzed, or excessively fatigued; or, perhaps, more properly speaking, it is the relaxation of a sphincter not subject to the control of the will." Where a proposition is faulty, the reasoning is apt to be illogical. This gifted and lamented author was endowed with a spirit of controversy to an extent that sometimes led him into the adoption and support of views, which his acknowledged powers of argumentation were insufficient to sustain. However, in attempting to exclude entirely, the amniotic sac as a usual participant in the dilatation of the os uteri,

he assumed a task perhaps not more difficult than that of Prof. Murphy, who undertakes to demonstrate that it is the only proper and efficient dilating agent.

We have heretofore stated that the argument and assumptions of Prof. Murphy involve "a total disregard of well known hydrostatic and mechanical laws; and that he takes the position "that the amniotic sac is a better dilator of the os, than the smooth, round, and comparatively unyielding vertex." At page 55, commenting upon the argument of Dewees, he remarks: "It would make the membranes not only useless as a means of dilatation, but rather a difficulty in its accomplishment. The head of the child, directly applied to the cervix, would overcome the resistance of the circular fibres much more efficiently than the liquor amnii, so that the most favorable kind of dilatation would be that which occurs when the membranes are ruptured at the commencement of labor. It is very well known that this does not happen;" and after giving Dewees' explanation of the difficulty, proceeds: "But in place of the waters, there is the large, round, and unyielding head of the child forced down upon the lower part of the uterus, which one would suppose more efficient for the purposes of mechanical distension."—According to the opinion of Dewees, and not his own, as we may fairly infer. Again, at page 50, "If the uterus exerted its full power upon the undilated os uteri, and if the unyielding head of the child were driven forcibly against it, the almost certain consequence would be, that the irritation would excite increased resistance, and ultimately terminate in inflammation of the mouth of the uterus. To obviate such an effect, nature interposes a *fluid medium* between the power and the resistance. The liquor amnii contained within the membranes, occupies the cavity of the uterus, and when its parietes contract upon it, the force exerted is (as we have explained) by this means, accurately conveyed to the os uteri. When the latter dilates in the slightest degree, the fluid insinuates itself within the smallest opening, and expands it by a direct lateral pressure against its edges. The power of the uterus is thus made to act in the most favorable manner for distending its mouth."

On same page, he says: "Further, so long as the tissue of the uterus intervenes, it is necessary to moderate the great power which the uterus is capable of exericising to dilate it: this is effected by the liquor amnii." Again, on page 108: "*The gradual escape of the liguor amnii* also gives rise to tediousness. If this take place when the os uteri is slightly dilated, in other words, when the latter is so long exposed to the pressure of the head of the child as to become irritated by it, the result is rigidity of the os uteri, etc." On page 55 we also read: "If they are ruptured when the dilatation is very slight, the suddenly in-

creased power of the fundus, forcing the head of the child against the os tincæ, soon excites irritation, prevents its expansion, and sometimes causes inflammation. But if they are broken when the uterus is sufficiently open to allow the membranes to protrude into the vagina, and the contractions of the fundus to increase, it is probable that the dilatation will be advanced more rapidly, etc." This last quotation contains its own refutation. I have been thus copious in my citations, for the reason, that they embody the views of all authors within my knowledge, Dewees excepted.

Now, what inferences are fairly deducible from the foregoing quotations? I shall state and answer them as I proceed: *Firstly, the amniotic sac is the essential agent in the production of dilatation of the os uteri, producing it "by a direct lateral pressure against its edges."* The fact, that in a fair proportion of multiparæ labors, the uterine orifice opens readily and to some considerable extent, before either the head or membranes have engaged within it, is fatal to this theory. Further, it is a well known fact to those who have made careful observation, that occasionally in multiparæ labors, where, from fragility of the membranes, the liquor amnii has been evacuated early, and before the head has descended sufficiently to press upon the os; enlargement of the orifice proceeds without interruption.

There are three agencies concerned in the production of dilatation. Firstly: and essentially, contraction of the cervico-fundal fibres acting upon the circle of the os uteri through their free extremities. Secondly, a body (the amniotic sac or presenting part) over which to retract the border of the os; and, Thirdly: pressure by descent of the amniotic sac, or presenting portion of the fœtus.

Secondly: The amniotic sac is a more efficient dilating agent than the vertex, for the reason, that the force exerted by the uterine contractions is "accurately conveyed to the os uteri;" whereas the same force transmitted through the vertex, would "soon irritate" the os, and "prevent its expansion." Here we have groundless assumption, misinterpretation of facts, and erroneous conclusions. By what law of mechanics does a yielding body like the amniotic sac, become a more efficient mechanical dilator than a solid body like the vertex? If the force of the contractions is (as is asserted) accurately conveyed to the edges of the os uteri,—the membranes being non-distensible, and therefore unable to absorb any of the force— why is the amniotic sac incapable of irritating and inflaming the os and arresting its dilatation, no matter how great the power exerted by the uterine walls? Can the vertex do *more* than transmit this force to the edges of the os uteri?

Again, it is *assumed* that the whole force of the uterine con-

tractions is accurately conveyed by the amniotic liquor to the edges of the os uteri, as soon as the latter is opened in the "slightest degree." Now, the exact measure of force which the liquor amnii is capable of conveying to the edges of the os uteri, is determined by the force which the unsupported membranes at the orifice are capable of sustaining. Who can suppose for a moment, that these frail membranes can support the whole power generated by vigorous uterine contraction? Let us take even Prof. Murphy's own statement, when combatting the argument of Dewees, in regard to the antagonism of the circular and longitudinal fibres: "but how the membranes could resist the effect of this struggle it would be difficult to understand, when we know that change of position, walking across the room, or other such trifling causes, are sometimes sufficient to rupture them, from the gravitation of the fluid alone, and therefore the greater force arises from the action of the fibres of the uterus against each other, must break them more frequently than what we know to be the case." Prof. Murphy therefore supposes, that antagonism between the vertical and transverse fibres, imparts to the liquor amnii, greater force, than when they contract conjointly. Such a view evinces a defective knowledge of hydrostatic laws. The simultaneous contraction of all the uterine fibres, will distend the membranes at the orifice more forcibly than any partial contraction possibly can.

Further, it is *assumed*, that when the amniotic sac is prematurely ruptured, it is replaced by the vertex, which transmits the power of the uterine contractions to the os uteri, thereby irritating, and rendering it rigid and unyielding; and the *conclusion* is, that the tediousness of delivery, and apparent change in the condition of the os uteri, which usually attend this accident, are attributable to the alleged fact, that the vertex is incapable of dilating the os as efficiently as the amniotic sac. I have dwelt at length on this point, as the most important connected with our discussion; and an exposition of the mechanism and phenomena of the first stage of a primiperæ labor, will, I think, show wherein obstetrical writers have been led into fallacious reasoning, and false conclusions, by the oversight and misinterpretation of facts. At the commencement of labor, and before the os uteri begins to open; we find the child occupying the uterine cavity, with its pelvic extremity in contact with the fundus, and its head resting upon the pelvic brim, presenting the occipito-frontal diameter more or less modified,—the liquor amnii filling up the inequalities. As the contractions continue, the liquor amnii is displaced in that direction in which there is least resistance—the inferior segment; for it is a well known fact, that the muscular tissue diminishes in quantity, and therefore, in power, from the fundus towards the orifice. Whilst the

inferior segment is undergoing distension by the downward projection of the liquor amnii, the superior portion of the cavity is lessened, and the walls of the body and fundus permitted thereby to apply themselves more closely upon the child. Then, as the cervix continues to dilate, and the os begins to open, further descent of the liquor amnii is allowed; so that the proportion of the uterine force transmitted to the *pelvic brim, through the body and head of the child*, increases step by step. As the os continues to open, and the membranes are more and more exposed to rupture from diminishing support inferiorly, the increasing contractile power of the uterus *would certainly rupture them*, were it not that, as the labor progresses, the proportion of force transmitted to, and extended upon the *pelvic brim*, through the child, is gradually increased. This is a wise provision of nature, for if the undivided power of the uterus should be exerted upon the unsupported membranes at the orifice as alleged by Prof. Murphy and others, rupture of them, unless preternaturally strong, would be inevitable at an early period of dilatation, in a large majority of first labors. As the labor progresses, the uterine walls are applying themselves more firmly upon the child, during each contraction, and the head is being flexed, so as to bring its smallest circumference in relation to the superior strait. Now suppose that at an early period of dilatation, and before flexion of the head has proceeded to any considerable extent, the amniotic sac is ruptured, either from fragility of the membranes, or interference on the part of the medical attendant; what results? Usually, abnormal protraction of delivery, and injury to the child and mother proportionate to its duration. The cervical segment being relieved from distension, by the evacuation of the liquor amnii, retracts by its elasticity, and applies itself closely upon the presenting part, and does not come to be *pressed upon* until the head is completely flexed, and its sub-occipito-pregmatic circumference is passing through the superior strait. When the head is of due relative size, this step in the mechanism is never attained in the early period of dilatation, unless the cervical tissue is preternaturally unyielding. I therefore venture to assert that the statement of obstetrical writers,—Prof. Murphy included—that the ruptured amniotic sac is replaced by the vertex, which, by pressing upon the os uteri, irritates and renders it unyielding, thereby causing the tediousness which usually results where the liquor amnii is early evacuated; *is entirely and radically erroneous.* Further, it is a mere assumption to assert, that when the vertex, (covered by the soft, well lubricated scalp,) does come to press upon the os, it will irritate, inflame, and render it unyielding; for when in the progress of labor, the occiput descends, it will dilate the orifice as favorably and as rapidly as the other unfavorable conditions

will admit. Again, the theory implies that the delay will terminate with the full dilatation of the os, whereas it is a fact, that the delivery is delayed at evey step throughout, by the two early evacuation of the liquor amnii. We have heretofore stated, that at an early period of dilatation, the head is but imperfectly flexed, and is not yet so adapted to the pelvic orifice as to prevent the outflow of liquor amnii, produced by the recurring uterine contractions. Complete flexion, and adaption of the sub-occipito-pregmatic circumference of the head to the pelvic brim, is by far the most tedious step in the mechanism of a primiperæ labor; usually requiring many hours for its accomplishment. The liquor amnii being thus gradually and completely expelled, the uterine parietes are permitted to close upon the unequal surface of the child. The circular fibres of the body, meeting with the least resistance, contract upon and constrict the abdominal region of the fœtus. Each succeeding contraction increases the constriction, until the compressed part becomes as resisting as the other portions. The child can only be expelled from the uterus by being made to glide upon its inner surface, and anything that militates against this process, will retard delivery proportionately. Now, as the resistance of the presenting part, conjoined with the resistance of this constriction, must be overcome by the contraction of the cervico-fundal fibres; the true cause of tediousness is at once made manifest; *for the amount of power absolutely lost, is exactly equal to that which this constricted portion of the uterus is capable of exerting.* And this relation of the uterine parietes will, at least, be partially maintained at every subsequent step of the labor, until the head is delivered; thereby causing abnormal delay throughout.

Through the foregoing explanations, it will be perceived, that protraction and injury are liable to result, whenever the liquor amnii is evacuated *before the head is properly adapted to the pelvic orifice, no matter what degree of dilatation may have taken place.*

We have thus undertaken to show, "that one of its most important uses (the amniotic sac) remains unfulfilled until the presenting part has passed through the superior strait; and that in all nutural, *uncomplicated* labors, especially primiperæ, the membranes should not be ruptured at any time."

In case of actual inertia, the practitioner must exercise his judgment, in view of the conditions present; but *rigidity of the membranes* can in no way impede the descent of the presenting part through the pelvic brim. Therefore it is my deliberate opinion, derived from careful and extended observation, that rupture of the amniotic sac, especially in primiperæ cases, before the head is properly adapted to the pelvic orifice; is injudicious, and generally injurious, and sometimes fatal,—especially to the child, in its results. For, the altered condition of the uterine

sinuses and the placenta, consequent upon prolonged and undue retraction of the uterine parietes, in conjunction with the violent pressure to which the infant is subjected; are well calculated seriously to impair the child's viability, even though it may be born alive.

There are other and important objections to rupturing the membranes, even when the os uteri is well dilated. Who knows at what period of a labor eclampsia may occur? Version may be desirable, but difficult and dangerous if the waters have been long evacuated. The same may be said in regard to rupture of the uterus. So also, of hæmorrhage; the first expedient being rupture of the membranes, the next, version.

In conclusion: as it is difficult to estimate in a given case of labor, to what extent its bad results may be fairly attributable to improper management, we may feel disposed to rest satisfied with our preconceived ideas and modes of practice. Let us, however, be reminded of the statistical fact,—established by the observations of Burns, Collins, Nagaele, Simpson and others; *that the liability to injury and death, upon the part of the mother and child, increases proportionately with the duration of labor.*

Cathartics in Dysentery. By O. C. Gibbs, M. D., Frewsbury, New York.

At the meeting of the Buffalo Medical Association, Sept. 2d, 1856, as per report of proceedings in the October number of the Buffalo Medical Journal, a discussion took place in regard to the propriety of using cathartics in dysentery; also the *kind* of cathartics best calculated to fulfill the indications in that disease. As this question is fairly before the readers of the Journal above mentioned, we suppose it is open for the expression of opinion or experience, by any of its many readers. Hence we give expression to a few thoughts, based partially upon our individual experience, and partially upon the generally received opinions in regard to the nature of the affection under consideration. A knowledge of the nature or pathology of any disease, is, perhaps, the surest guide to the appropriate indications of treatment. The public generally, are apt to look upon all diseases accompanied with frequent evacuations from the bowels, as similar at least, if not identical in character. Physicians themselves are not always free from this vagueness of nomenclature. In muco-enteritis, as well as milder forms of mucous irritation, each case is accompanied with a diarrhœa or frequent alvine evacuations, and the public generally do not discriminate between such cases and dysentery, and we have seen physicians not unfrequently, if not guilty of the same error in diagnosis,

at least of the same vagueness of nomenclature. Dysentery consists in an inflammation of the mucous membrane of the colon and rectum, and, though the evacuations may be over in ten minutes, yet, except it may be in the incipiency of the disease, they are not fœcal, but consist almost wholly of mucous and blood. Hence, though the griping pains in the abdomen and the tenesmus may be never so great, though the characteristic muco-sanguineous evacuations may be never so frequent, or the straining at stool never so persistent, the case may be accompanied with obstinate constipation. The public generally look upon the frequent bloody evacuations as constituting the whole of the disease, and, consequently, urge the importance of powerful astringents, which, if unadvised by the attending physician, they sometimes clandestinly and injuriously bring to bear upon the disease. But the physician who resorts to them, to the exclusion of evacuants, will certainly have no reason to boast of his success.

Permit us to say, that we do not propose to discuss the nature, cause, or symptoms of dysentery, nor to enter into full details of treatment. We propose only to make a brief expression of our opinion, upon the question under discussion, viz: the propriety of cathartics in dysentery.

Some authorities have condemned the use of evacuants in dysentery, on the ground of their supposed irritating influence upon the inflamed mucous membrane. But we feel confident that, when the evacuant is judiciously selected, and repeated with due discrimination, and with proper adjuncts, its irritating influence is more fancied than real. The object of the cathartic seems, at first, to be to free the bowels from irritating secretions, and the object of their repetition is, conjoined with the above, to prevent constipation, which is the inevitable sequence of the inflammation and consequent fever. A second, and not less important object to be secured by the evacuant, is to unload the portal veins, thus diminishing congestion in that important circulatory system, and to stimulate the capillary circulation in the liver, which is often sluggish, resulting in a deficient biliary secretion.

In regard to the choice of a cathartic there has been and is a great discrepancy of opinion. Some have advised calomel at first, to be succeeded by castor oil; others have advised castor oil from the first. Rhubarb, compound powder of jalap, cream tartar, epsom salts, rochelle salts, &c., have all had their advocates.

We were formerly in the habit of giving, at first calomel intimately commingled with rhubarb and a little pulverized opium, and afterwards, whenever an evacuant seemed demanded, gave castor oil with a few drops of laudanum. But recently

we have made choice of a different evacuant, and, so far, have been much pleased with the change. In the June number of the Western Lancet, for 1855, Dr. D. B. Dorsey communicated the result of twenty years' experience with a cathartic mixture, first proposed to him by Dr. Lemoyne, of Washington, Pa. Summing up his result he said "in a practice, not very limited, in the cities of Wheeling, Va., and Steubenville, O., in the latter of which dysentery prevailed as an epidemic twice or thrice during my residence there, I had the high gratification of seeing all recover who were treated with this remedy from the commencement of the attack." With this high encomium before us, we made trial of the combination in the next case that came under our observation, and with such happy results that, except in young children, we have used it in all dysenteric cases since, with success in all cases.

We quote Dr. Dorsey's formula and directions from the paper above referred to. "Take of saturated solution sulph. magnesia, *seven fluid ounces;* aromatic sulphuric acid, *one fluid ounce*—mix.

"The saturated solution is prepared by dissolving epsom salts in an equal quantity of water, *by weight*, at 60 deg. Fahrenheit. It will be ready for use in eight or ten hours. During that time it should be shaken occasionally.

"The medium dose of this medicine for an adult, is one tablespoonful, delivered with two or three ounces of water, every four to six hours, until it gently moves the bowels. It should be given regularly, and perseveringly, until the bowels are manifestly under its influence, which will be evinced by feculant discharges, abatement of tenesmus, and general feeling of relief. The size of the dose and time of repeating it, must be varied by the practitioner's judgment, according to many circumstances of age, violence and stage of disease, &c. Sometimes it will require two tablespoonfuls of the medicine, every three or four hours; at others a teaspoonful every six or eight hours will be sufficient.

"Accompanying each dose, when the pain and tenesmus are great, one sixth of a grain of sulph. morph. may be given. But this remedy, also must be varied, both in quantity and frequency of repetition, according to circumstances."

We have seldom or never exceeded tablespoonful doses, and oftener fallen below that. But instead of giving once in four or six hours throughout the twenty-four, we have usually commenced with it in the morning, to be repeated every three hours until it operates, always combined with a small quantity of morphine. This course we repeat every day so long as the indications demand. During the remainder of the twenty-four hours, we give ipecacuanha with morphine, or such other remedies as the circumstances of the case seem to require. It may

not be amiss to say here that mercurials are incompatible with the mixture.

The acid doubtless stimulates the capilliary circulation in the liver, promoting bilious secretion, while the sulphate of magnesia relieves the portal congestion and frees the bowels from irritating secretions. From the relief which speedily follows its action, to the tormina and tenesmus, greater than that following any other evacuant, we cannot help thinking the acid has a direct sanitary influence upon the inflamed mucous membrane.

With young children, where smallness of dose and pleasantness of taste are always considerations of much importance, the above mixture is decidedly objectionable. The taste is rather disagreeable, and the necessity for diluting the mixture, renders the bulk such as no child will readily take. In such cases we have been in the habit of scorching rhubarb, adding boiling water and extract of hyosciamus, the dose of such proportion to the age and condition of the patient, sweetening the mixture and flavoring with nitre.

This is to be given in repeated doses in the morning, sufficient to produce a laxative effect, and during the balance of the day we give hydrargyrum cum creta, in small doses, with Dover's powders, or such other medicines as the circumstances of the case may indicate.—[*Buffalo Med. Journal.*

Puerperal Vomiting cured by the Induction of Labor. By Francis W. Sheriff, M. D., L.R.C.S.E.

Having recently read your article on Professor Cazeau's late work on the Diseases of Pregnancy, &c., I thought it might be interesting to some of your readers to relate a case of severe Puerperal Vomiting which lately came under my care. My patient, Mrs. Moore, first consulted me four years ago, being in the eighth month of her fifth pregnancy. She complained of almost constant vomiting, and had been reduced to great debility by absolute inanition. A few doses of hydrarg. cum cretâ and opium checked the vomiting, and she was delivered of a healthy child at the proper time. The placenta was retained, and she had considerable hemorrhage before I reached her residence, which was about nine miles distant. She became anæmic and was confined to bed for nearly three months. She eventually was quite restored to health, and has not been pregnant since until this time. On the 26th of July last I was requested to visit her. I found her aparently healthy, and robust looking, pulse natural. She stated that she was in her seventh month of pregnancy and that since its commencement she had vomited a great deal, but that lately it had become much more

troublesome, and that she was afraid of relapsing into her former condition, as her bowels were rather costive. I prescribed the pills and a mixture of chloroform and tinct. lavand. comp. and at the same time paid great attention to the state of her bowels. On the 10th of August I was again called to visit her. She stated that since the 7th, the vomiting had been almost constant, that she retained nothing on her stomach and that she vomited a great deal more than she swallowed. She complained of great thirst, pain in the epigrastrium, great anxiety and restlessness, and was urgently calling for relief. Pulse 120 of good strength, breath fœtid, having the odour of chloroform. I bled her to the amount of ℥viii. without causing fainting, and prescribed at different times calomel and opium, senna, enemas, warm applications to the epigrastrium, creosote mixture, &c., but all of no avail, the vomiting continued as bad as ever. The swallowing of a little fluid of any kind was almost immediately followed by great retching and vomiting. The fluids vomited were colourless and inodorous, and largely exceeded what had been swallowed. In addition to the medicines prescribed, I ordered nourishing enemas to be frequently administered.

11th. Symptoms rather more favorable, vomiting not so severe, and has slept a little, complains more of debility, skin rather cool. Has retained a little opium, which she thinks has relieved her.

12th, 8 a. m.—Is much worse, vomiting as bad as ever, extremities cold, skin wrinkled and withered like a person in collapse of cholera. Has very great anxiety, and calling urgently for fresh air. Had to get her bed elevated to the height of the window so that she might have her head in the open air. Pulse 130, weak and variable. As it was evident that death must soon ensue if relief was not obtained, I determined to bring on labor; but before doing so, I requested that Dr. Anderson, a neighboring practitioner, might be sent for. He arrived at 3 p. m., and agreed with me on the propriety of immediately inducing labor. I introduced a flexible catheter into the uterus, ruptured the membranes, and drew off about 8 oz. of liquor amnii. My patient was relieved almost immediately, and the vomiting ceased. I prescribed 1 drachm of tincture of Ergot every two or three hours, supporting her strength at the same time with stimulants and nourishing enemas. She remained easy and comfortable all night, and next morning, about twelve hours after the rupture of the membranes, labour pains came on, and continued regarly all day, but at long intervals. About 8 p. m., I administered an enema of infusion of ergot, which soon had a most powerful effect, and within an hour afterwards she was safely delivered of a living child which cried lustily. It, however, lived only about eight hours. My patient rapidly recovered,

and in two or three weeks was entirely restored to her usual health. In this case so urgent were the symptoms and so rapid had been the approach of sinking and colapse, that I had no doubt that the delay of the operation for a few hours more would have proved fatal. From the immediate relief experienced after drawing off the liquor amnii, it would appear as if the cause of the vomiting had been the pressure of the gravid uterus.

[*Medical Chronicle.*

On the Physiology of the Human Ear. By W. KRAMER of Berlin.

Our knowledge of the physiology of the auditory apparatus is still very incomplete, partly on account of the difficulty of experimenting on the organs of hearing, and partly on account of the imperfection of the science of acoustics. We are happy, therefore, to record the results of the investigations of Dr. Kramer, (Deutsche Klinik, 1855.) whose vast experience in the treatment of aural affections is universally known. In reviewing the researches of his predecessors, this author points out the impossibility of determining what takes place in the living ear from experiments on inert matter. His own experiments have been made upon the ear itself, in the healthy and diseased states. It would be out of the question for us to reproduce the details of these experiments; we must be satisfied with the author's conclusions:—

1. The cartilage of the ear conducts more than a third of the sonorous waves which reach the membrana tympani.
2. The concha is the most important part of the auricula cartilage.
3. The cartilage of the ear, in its natural position, simply receives and conducts the sonorous vibrations to the auditory passage.
4. The cavity of the auditory passage transmits about 500 times as many undulations as the solid parts enclosing it.
5. The curvatures of the meatus and the cerumen have no influence on the sonorous vibrations.
6. These arrangements serve to protect the canal and the membrana tympani from external agents.
7. The membrana tympani transmits the sonorous undulations in due quantity and quality, only while its structure is normal.
8. The membrana tympani also serves as a protection to the drum.
9. The ossicula have but little agency in transmitting the vibrations of members of the membrana tympani to the laby-

rinth. Their office is rather to support the membrane between two strata of air.

10. The membrane of the fenestra rotunda is designed especially to transmit to the labyrinth the vibrations of the tympanal cavity.

11. The mastoid cells are of trifling acoustic importance.

12. The Eustachian canal is an open tube. (Dr. Toynbee had announced a contrary opinion.)

13. Through this tube the air of the tympanum is renewed, and the sero-mucous secretion of that cavity eliminated.

14. Hearing is not entirely destroyed by the absence of the fenestra rotunda and the loss of the liquor cotunnii.—[*Ib.*

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*On Rheumatism of the Epithelial and Non-Epithelial Fibrous Tissues: Its Sequence to Scarlatina and other Exanthemata. On Rheumatic Gout, Chorea, &c. &c.** By H. P. DeWees, M. D. New York.

The term "Rheumatism" is derived from a Greek word signifying "a fluxion, or catarrh." It is divided into acute and chronic, although a third form may be correctly added, viz: the flying, or fugitive." The tissues affected are chiefly of the fibrous or sero-fibrous class. But muscular structure itself may become the seat of the affection, from its component elementary fibrous structure.

The true disorder consists in a certain more or less altered condition of the blood, from its normal composition. This condition may arise from causes *apparently* most opposite, but which resolve themselves into one and the same action, namely: their power to change the constitution of the blood from its healthful state.

The bedside statements confirm this view. By some, the exciting cause of the attack is attributed to cold, or to "check of perspiration." By others, to waste of nervous force by long-continued watching, to strains, or over-exertion, to being "out of order" for a long time, though not conscious of having been exposed to damp or cold, to the sudden suppression of a skin eruption, to indigestion after a debauch, and so on, till one would be led to believe that any imprudence might be followed by an attack of rheumatism.

In some families it is, apparently, as hereditary as the gout; whilst in the gouty it is not unfrequently a conjoined affection.

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* Some of the views announced in this paper are so like those given in the article on Scarlatina, published in our pages, that our readers may suppose they were suggested by it. It is due to the author to state, that the present paper has been ready for publication three years.—[Eds. Monthly.

But the gouty, from their mode of life, are more apt to superinduce rheumatism, than are the rheumatic to earn gout. Where the parents of the patient have been subject, one to gout and the other to rheumatism, a sort of hybrid attack may sometimes result, rendering diagnosis difficult, whilst relief can only be obtained by conjoining the remedial measures of each. This coalescence, however, is not always the case, as I have seen gout and rheumatism run their distinct course in separate attacks in the same person. Rheumatism may safely be termed a blood disease. This blood condition may arise from causes apparently very different, but which resolve themselves, in their final result, by producing alike morbid changes not only in the circulating fluids, but in the nutritive action of the tissues themselves. Nor does time, or any specific interval, form a necessary element in the anormal production. It may result suddenly, or may be the sequence of the gradual want of integrity in the healthful assimilative functions. The sudden cutaneous suppression (so prolific a cause generally,) by which certain excretory elements are forced to remain in the blood, loading it with a specific poison, and resulting in the phenomena of rheumatism, may be represented in a like manner by the errors of an organ or organs, *by which a similar toxic condition of the blood may be induced.* Nor is it necessary, that the superficial excretory actions, or the internal assimilative organs themselves be impaired—both may work in their perfect normal role, yet from the supply, by diet, being improper or in excess, a state of blood similar in its impurities may be produced, with the exhibition of rheumatism or gout as its index. It is only thus that the various accounts as to the origin of the attack can be reconciled.

The acute rheumatism of children, in almost all cases, can be readily traced to improper exposure or to damp. The recession of so much highly animalized excretion as is constantly being thrown from their surfaces, loads the blood with excrementitious products, whilst the proper actions of the kidney, liver, &c., are interfered with; or congestions may be superinduced, which cannot but serve to usher in the disorder. The young are more liable to general rheumatism than are the more advanced; and heart disorder is more prone to ensue in them than in the latter. This, most probably, is owing to the higher condition of irritability of the cardiac tissues from the altered blood, *and from the fact of the exanthematous diseases*, as *scarlet fever*, *measles*, *&c.*, *being of later occurrence;* leaving the great excretory organs in a more or less damaged state. The determination of the disease, both in the young and the more advanced, to become local or general, apart from the considerations just mentioned, is in strict accordance to the blood condition, and the resisting power of the part exposed. For example: two individuals of the same age may

be subjected to similar atmospheric causes, yet the result may be, and generally is, different: one being attacked with rheumatism of a single part, whilst the other may be taken down not only with the local selection, as in the first, but with every joint in the body affected. Or he may escape the like local manifestation, and be attacked in the knee or feet, although these parts were not only well protected, but not exposed at the time to the impinging draught; thereby clearly showing the relation of the blood condition to the disorder. In many cases, the selection for the rheumatic outbreak is in some part previously weakened, as by strain or fracture, or by local nervous loss. These cases, however, require great discernment, as local phlebitis or purulent deposit in or near a joint may, and has been frequently mistaken for true articular rheumatism, giving rise to the opinion of its terminating in suppuration, more often than it does. To these and other points I shall again refer in their proper order.

Although for the most part the attack of the acute rheumatism is sudden, yet in some, distinct warnings occasionally take place before a "first instalment" is paid in. These premonitions vary in different persons according to the attack dating from exposure, or from its being kindled spontaneously by previous disorder of the blood, without any outward exciting cause of a recognizable kind. Disturbance of the digestive organs, attended by flitting pains through the joints or in the muscles—the sudden eruption on the skin of some herpetic or other disorder, attended with burning, itching, or aching, and its rapid evanescence—or, the drying up of any chronic discharge, the appearance of a singular sour-smelling perspiration whilst in bed during sleep—these, with other premonitions, serve as sufficient data of the impending evil, to those who have already suffered, or are remembered with dread at their subsequent appearance, by those who did not translate their bearing correctly. In others, no such unpleasant "avant-couriers" announce the attack; but a peculiar nervous excitability, attended with moist skin, and a sensation of feeling better than usual, is recorded by the patient —the attack being generally attributed to check of perspiration on going into cold air from a warm room, although others who were in the same atmosphere did not feel over-heated.

Here the disease early manifests itself by the usual sweating, *but in advance of the pain.* This, however, soon invades the insteps, ankles, knees, or wrists, attended with more or less chilliness, hot flashes, and increased perspiration. The arteries throb quickly through the now swollen, mottled, hot, and shining parts, whilst the superficial veins leave their dark-blue traces through the sensitive skin. As the location is variable, so is the duration of the intolerable agony uncertain. One or both corresponding articulations may be attacked, alternately or

simultaneously; or, shifting from ankle to knee, a running fire from joint to joint may be kept up, till apparently reinforcements of the disease arrive, and every joint be tensely invested by the relentless enemy. Voluntary motion now becomes impossible, or is effected under the greatest torture. Change of position by any aid is rendered agonizing, whilst the desire to move increases hourly; and the patient is worn out between the increasing sweats, which bring no relief to the severity of the pains, and the sleepless restlessness for change of posture, which adds no comfort. The pulse hammers on, increasing in rapidity and pain-bearing force through the disabled parts. Fever seems firmly established in every essential form, save the dripping skin, whose sour sweatings fail to moderate the heart's over-action; and that the after effects are unlike those which would be dreaded in other fevers, attended by so much apparent inflammation, and with local disorder of nutrition of such threatening aspect.

A respite is generally gained during the sun hours, but the night comes loaded with terror. Sleep is now broken from the startled slumberer, by spasmodic jerkings of the limbs; and the dread of their re-occurrence, robs the pain-snatched hours of their balmy gift. And thus passes night into day, pain into exhaustion, and labored conversation into incoherent wanderings, or delirium, more or less persistent during the weary night hours. The appetite is gone, whilst the thirst is unquenchable. The countenance, for a time flushed with dark purple blood, bearing evidence of the riot of the heart, and its over-loaded condition from the wasting tissues, becomes at length heavy and pale-sodden, whilst the forehead drips with outstanding perspiration, and the sclerotic tissues of the eyes become finely pencilled, and the mucous tears drain from the sticky and often shut lids.

From the seventh to the ninth day such is the course of acute rheumatism, when relief may come permanently, or by shifting the scene of action to other parts, with moderation in degree and duration of the pain; whilst the limb previously affected becomes less unpliant, although aching with an almost paralytic stiffness, as regards progression or action. The patient is a child once more, every motion is uncertain; he totters with his weight, and has, as it were, to learn to grasp again. In some, at this period, gloomy inaction, or heart-desponding forebodings harass the tedious convalescence. In others, although the recovery seems certain, the hopes are found delusive, and they again become victims to a re-attack. Pain renews its seat, the clothes become drenched in the sour sweats, and the morrows are mortgaged in nights of agony. Nor is this relapse always to be dated from imprudence of motion, or of exposure, or of diet,

which, from the improving appetite, or greater constitutional demand of the patient, had been more generous. It may and frequently does result from many causes unconnected with motion, atmospheric change, or regimen. Amongst these may be mentioned in this place, renewed blood disorder, encroaching purulent disturbance, the impairment of an organ by a more or less rapid hindrance of action from effusion, or by partial degeneracy of normal structure, etc., etc. It is here that the skilful physician is required; not only to guard against present impending difficulties, but to restrain, if possible, the disposition to organic damage in the various organs; which, if allowed to proceed in their stealthy progress, may suddenly shorten life before its prime, or leave it as a dreary tenure to the joyless sufferer.

The prognosis, in many cases of rheumatism, depends upon the previous condition of the patient. Whether he has been more given to vegetable or animal diet, or to alcoholic drinks; also, as regards the state of the primary and secondary digestion,—if he has had syphilis, or been lately subjected to gonorrhœa,—whether the kidneys have been for a long time diseased or disordered, the origin dating from the exanthemata or not,—or if the heart has been affected. In females especially it is important to know whether they have been subject to hysteria, with or without convulsion, or if chorea has at any period of life been present, or if the patient has at any time been affected by Marsh malaria or intermittent,—whether extensive suppuration had been present, or chronic eruptions been repelled. These, and many other conditions, in connection with the habits, occupation, *and the history of the parents*, have to be fully entered into, before a just opinion can be formed as regards the prognosis and rational treatment.

For no disease does there exist in general a more unsatisfactory selection, or a more discrepant account, as regards effective remedial measures, and this amongst medical as well as non-medical observers. The indisposition amongst many to regard rheumatism as a blood disorder, the real difficulty at times in making a satisfactory determination as regards the tissues affected, and the lithic or lactic acid excesses in the circulation, with an *apparent* natural skin excretion, or their non-elimination from the blood, with deficient cutaneous action,—these, and many other causes, together with the inaccuracy that will attend the diagnosis of even the most skilful, render at times, the treatment vague, unsteady, and in most cases purely empirical. For every one you meet has a remedy with a list of cures.

The remedial selection, therefore, often requires much acumen in distinguishing simple acute or true fibrous inflammatory rheumatism, from the affection upon which the various organs

have engrafted their assisting vices; as witnessed in some disguised states of Bright's disease, or after scarlet fever, or spinal derangement, local phlebitis, insidious tumor, long continued and unrecognized constipation, etc., etc.

As acute rheumatism does not necessarily resolve itself into chronic, so may it be said that the latter, as a general thing, starts its onward course of injury and disfigurement in a stealthy and insidious manner, without much painful inconvenience in the early steps. There is, as is well known, what may be termed chronic acute rheumatism; that is, where the patient, after an acute attack, is never entirely free from aching pain or slowly-increasing disablement of the joints, till seized with another attack. But, as above remarked, chronic rheumatism, in most cases, begins stealthily. Antecedent impairment of health, at first scarcely noticeable; fitful pains shooting here and there, stiffness of the back or in the joints, on rising suddenly from the sitting or lying posture; *skin-aching more intolerable whilst warm in bed;* deep, heavy, and weakening pains in the larger muscles, rendering sleep uncertain and uncomfortable; frequent desire to urinate, *sometimes attended with more or less scalding*, and even with *muco-purulent urethral or vaginal discharge*, rendering a suspicion of, and at times mistaken for, gonorrhœal disorder,—the slow but increasing enlargements of the joints, unaccompanied with desquamation or *irregular* disfigurement, as in gout; the general stiff-hinge movements,—these, and many others, being the intelligence to the afflicted that the record of their assimilative imperfections, or their imprudence of all hygienic rules, is most ineffaceably written in their persons. The symmetrical disposition to disfigurement is peculiarly noticeable in chronic rheumatism, the distortion of one joint, or of its burse, being apt to be daguerreotyped in the corresponding part of the other side.

But chronic rheumatism may exist unwritten in joint or muscle, and even unsuspected by the practitioner and patient, the brunt of the disorder falling upon organs hidden to view during life, and whose altered organic condition, with the cause, is only revealed by the knife. For what is true in the diffused form of gout, is also true in chronic rheumatism. The patient may be tortured under the belief of an existing and incurable organic disease of an organ important to life; whilst, in reality, it is only laboring under the insidious functional poisoning of unrecognized rheumatic infection. It has been my frequent opportunity to see both the young and the old treated for organic cardiac disease, attended with disturbance of action, and all the *bruits* that play their Æolian strains over the strings of the heart, when, by addressing the treatment to the rheumatic condition of the blood, relief has been gained in a satisfactory, and in

many instances, in an almost magical manner. And the same may be said of the apparent heart-disease in the gouty,—colchicum and hydriodate of potash being their best friends.

In what may be properly termed chronic acute rheumatism—that is, in persons subject to frequent attacks of the acute form with slow recuperation—the heart is liable to become affected in about thirty in one hundred cases, and this, especially in children, from seven to fifteen years of age. In the plurality of these cases, the *previous exanthemata, as scarlatina or measles, most likely laid the foundation*, or were associated in the rheumatic attack. For the valvular lesions so frequently attending rheumatism, are not uncommonly preceded by kidney derangements, which date their origin from causes as above mentioned. It therefore becomes needful, whilst seeking into the existence and date of an hypertrophied ventricle, (which, of itself, is so frequently conjoined with disease of the aortic valves, or if dilatation exist, with adhesion to the pericardium,) to enquire if the exanthemata had at any time been suffered from. For it is undeniable that kidney disease, from whatever cause, frequently exists with altered muscular structure of the heart and a high irritability in its serous lining membrane. This state is more frequently found in females than in males, and thus in part, may account for the greater prevalence of choreic disease in them.

As regards selection, the left side of the heart, from its greater tendinous structure, is more subject to rheumatic inflammation than the right. From the considerations above-mentioned of the liability of the heart to previous damage from kidney derangement, the fact of rheumatic pericarditis being less frequent than valvular inflammation, may be accounted for. In many cases of rheumatic pericarditis, the lining membrane of the heart is found more or less involved, and pleurisy by extension may result. Where extensive kidney disorder has existed previously, suppurative or purulent inflammation may, and frequently does ensue, whilst the uræmic symptoms are prominent; and *this, especially, if the patient has been lately subjected to the scarlatinal poison.*

Indeed, pleurisy unconnected with pericarditis, is rare in rheumatism, and in some cases, apparently, will be proportioned to the amount of urea, remaining uneliminated from the blood. The pleuritic effusions sometimes are so great as to displace the lower organs, and especially the liver; leading, on hasty examination of the abdomen, to the belief of enlargement of that organ, or of tumor, as has been witnessed by me on post-mortem inspection, where the serous or sero-purulent collection in the left side was so extensive, as to cause a large bag to descend low down towards the crista of the ileum; rendering, during life, all

diagnosis unsatisfactory and obscure. Where the effusion is on the right side in excessive quantity, and accompanied with ascites, the liver may be floated, as it were, and pushed far over into the left side, giving rise, also, to the supposition of a tumor existing there.

Hypertrophy of the left ventricle is a most common sequence or associate, of disease of the kidneys; and in these cases is frequently independent of valvular disorder, whilst apoplexy forms one of the modes of death. Where rheumatism attacks an individual, who previously may have been laboring under hypertrophy of the heart, the prognosis is of course more unfavorable as regards the ultimate result; as the vessels of the brain are apt to become diseased or degenerated in this condition of the heart. If disorganization of the kidney co-exist, the danger to the patient is also increased; as the hypertrophic state of the heart has a double association. What exact proportion in these cases have been affected by scarlatina, I do not know, but it appears to me that the number is in greater ratio.

The peculiar irritable manner and appearance in the patient at first, but changing to a dull yet anxious expression, in rheumatism with previously disorganized or impaired kidney, is to be accounted for, by the gradual poisoning of the brain and great organic centres, from the retention of urea and other excrementitious matter in the blood. This condition may be partially relieved by the occurrence of effusions; but only for a time, as resorption, fresh accumulation, and functional impediment by dropsical extent, ensue, whilst convulsion, or coma, ends the scene.

The absorption of urea is by no means to be measured by the drowsiness of the patient; in some it acts as an *excitant*, producing sleeplessness or vivid fancies, as is not unfrequently witnessed after opiates. Indeed, I have seen the utmost watchfulness persist; sleep or coma, only ensuing just before death. It is the object of this paper to more than call the attention of the profession, to the fact of the frequency of rheumatism after scarlatina, or other exanthemata, and to extreme liability of the epithelial serous linings of the various parts of the body, to become the seat of the disorder, after the kidneys have been disturbed, or diseased in their epithelial structure. Hence, the frequency of sero-fibrous rheumatism after scarlatina; and where no kidney disorder exists, *the preference of this rheumatic affection to the pure fibrous structures.* In the former, purulent effusions are apt to take place, whilst in the latter they are very rarely witnessed, though the swelling, etc., is greater.

The student should carefully divest himself of the too prevalent idea of the metastasis in rheumatism, gout, and other diseases not strictly confined in certain regional bounds. The

endeavor should be to classify anatomically, the tissues endowed with the *same organic elements*, and having alike functions. By so doing, *identity of structure* with their liability to functional error will usurp the vague idea of the so-called metastasis; and the disturbances of other organs, will resolve themselves into their own legitimate actions and re-actions. It is also important to weigh the *mechanical association*, or situation of parts involved, and their disturbing influences. For instance, pericarditis with adhesion, although highly interfering, still will allow the function of the heart to be carried on better than in endo-carditis with valvular narrowing of the orifices, or where the natural elasticity of the inner mechanism is hampered by thickening, or by restraining adhesions; or, by roughening vegetations opposing an obstacle to the uniform current of the blood, etc., etc.

The various compounds remaining in the blood from deranged elective balance, may act as other poisons do when introduced from without. These toxical influences may become directly injurious, by completely paralysing the functions of an single organ, highly essential to life; or they may, by inducing a gradual degeneracy of all the nutritive centres, so leaven the whole circulating mass, as to render every structure more or less attainted in their vital uses. Nor are these effects subjected to any regularity, as regards their exhibition. In one, *paralysis of motion* may ensue,—whilst in another, disorder of any special sense may result; and *blindness*, *deafness*, or *insanity*, be the product, leading, too generally, to the belief of structural degeneration, rather than of functional derangement. This subject is full of the highest importance, and must ultimately form the platform of future improvement in the treatment of disease, before medicine can be safely called a science.

These blood poisons act by excess or deficiency of the normal ingredients—or by new combinations, not existing in the healthful state—or from the introduction of a specific poison, such as the syphilitic, cadaveric, etc., which have the power either to arrest the natural blood formations, or to impress upon them a new formative growth and self-like, not consonant with the normal organic constitution. Cancers seem to be an illustration of this. Each of these specific entities, or poisons, have a given type-life—in some, without the power of reproduction in the same individual (as witnessed in small-pox, measles, scarlatina, etc.), running through their periods of incubation, growth, and decline, in a regular manifestation of events. In other blood poisons no such self-limitation of developement, nor after-inoculative exemption exists. A disposition to increase without limit, and to perpetuate their destructive changes in every tissue, forms a prominent feature in them; as seen in syphilis and cancer. But these latter kinds are more amenable to early treatment, or

to death by remedy; or, in other words, to cure, than the former. It is, however, a curious fact, as regards the development of syphilis amongst the Northern Esquimaux, that even this poison, so frightful in its ravages amongst civilized and warmer-climed people, runs in them from the primary stage to complete eradication, in six months, *without treatment of any kind.* For this fact I am indebted to my distinguished friend Dr. Kane.*

A slight outline of some of the disorderly associates of rheumatism, and of those affections attended with pain apparently rheumatic, but dating their origin from other morbid conditions, may be proper here. Rheumatism is not only frequently conjoined with scarlet fever, but is exceedingly prone to afflict persons who have been subjected to this disease, or to other of the exanthemata. From the views early mentioned, this might be suspected, since the kidney is also liable to suffer greatly in this fever. Where the renal derangement is early manifested, the pains in the joints is apt to make a corresponding appearance, and will frequently mask the attending scarlatinal affection, or cause it to be entirely overlooked if feebly developed; the delirium, convulsions, or increasing coma that may attend, giving rise to the surmise of translation of the rheumatic action to the brain, or its coverings. In these cases of apparent rheumatic origin, it therefore becomes important to investigate closely into the exact condition of the child, as to its exposure to scarlatinal infection, or to the epidemic influence at the time prevailing.

The subsequent difficulty about restoration to general good health—the desquamations—the sudden chest difficulties, or dropsical effusions, ensuing shortly after, and even without incautious exposure, on the subsidence of arthritic pains—these many times serve to point out what has been overlooked. In none of the exanthemata is untimely exposure more severely witnessed than after scarlatina. Another fact is well worthy of consideration, viz: the albuminal persistence in the urine, together with tubular casts, epithelial deposits, etc. If this condition is found to exist in a case of sudden but ill-defined rheumatism—and more especially in children who have never been known to have had scarlatina, attention should at once be directed to the probability of the incurrence of this affection, and to the fact of the engagement of the kidneys.

The rheumatic symptoms generally do not exhibit themselves in the commencement. The scarlatinal disease may have been declared some time, even to the period of desquamation, before the joints are complained of. But whenever this may happen, and the kidneys are becoming more or less deranged, the danger

* This paper, it will be remembered, was written before the death of this noble man.

is great, not only for the present but for the future; since the effusions into the joints are at times amongst the lesser evils, the heart and brain being the special organs for anxiety. The effusions within the joint, although they may not be great, may eventuate in suppuration (as in purulent synovitis), producing more or less permanent alteration of structure and model, from mere thickening to articular caries.

In all cases of diseased joints in children, the strictest inquiry into the preceding disorders, and especially as to scarlatina, then becomes of vital importance. As is found in the destruction of the aural bony-chain and surfaces, being confined mostly to one side, so, in the articular, is one joint, especially the knee, more frequently injured. Where the history of the case is imperfect or obscure, still, by the careful examination of the urine, even at a late date, much information can be gained; as by it, we can often obtain a satisfactory diagnosis between the affection being the result of true fibrous rheumatism, to which it may have been attributed, or of the involvement of the articular fibro-serous membrane, with kidney derangement. This portion of the pathology of joint affections is worthy of serious consideration, and the prognosis must ever be uncertain without it. Most medical and surgical men can recall cases where the history of the affection, or the successful result of treatment, will prove the truth of these views. It is nothing new to attribute the abscessular conditions of the ear, or the ossicular caries, with sloughing of the tympanum, to the after effects of scarlatina. But the injuries to the joints, and other parts, have not met as ready observation, owing probably to the descriptive statements given of the pain, leading to the idea of simple rhematism of the non-epithelial fibrous tissue.

Both old and young have been, and will be time and again, treated for apparent rheumatism, where the affection owed its origin to sub-fascial abscess, or impinging deposits of pus, either of local origin or from purulent absorptions. Scarlatina, typhus fever, local injuries, etc., may all produce this condition, and the errors of treatment may at times be pardonable, but in general are dependent upon ignorance or carelessness. In children, rheumatism more frequently terminates with suppuration than in adults; and their more recent exposure to scarlatina readily accounts for this. But in the older, a diseased condition of the kidney, with epithelial-disintegration, frequently takes place. In these, rheumatism of the internal sero-fibrous membranes of the joints is prone to ensue, and pus may be generated. The results, then, are nearly the same, the difference being marked chiefly in the higher nutritive changes which take place in the young. In scarlatinal-rheumatism, the joints are not the only sufferers when the kidney has been damaged. Any parts hav-

ing the fibro-serous element, may become the seat of derangement. Hence heart disease, pleurisy, arachnitis, with intracranial effusions, may result; and the time of their demonstration will be variable. It may be shortly after the attack, or proceed so stealthily or slowly, that even adult age may be reached. For disease is not a running horse, to be timed exactly.

The modes of death in the child and in the adult are somewhat different. In the child, the hypertrophic condition of the heart is less frequently attended with valvular disorder; and the changes in the vessels of the brain, by which apoplexy, from rupture, is so often accomplished in the adult, rarely proceed to very great disorganization. But a fatal issue may speedily attend with convulsion and coma, from the higher impressibility of their nervous system. The arachnitis of the convexity of the brain is rapidly ushered in with alarming symptoms. The pain is intense, and the sleepless irritability attending from the first, alternates with delirium more or less marked, till convulsion or coma may close the scene. But the symptoms, when the base of the brain is affected, though less prominent, are more on that account, to be dreaded, from their insidious character. Pain is not much complained of, and the delirium, if any, is less profound; but the coma is more sudden and quickly fatal.

In the adult, the hypertrophy of the left ventricle, (sometimes of the heart, independent of any valvular disorder,) accompanied by kidney disease, gives rise to, or at least is often associated with, alteration of the vessels of the brain, extending to more or less profound degeneration of their coats. Hence, apoplexy—sometimes sudden and fatal, as from the stroke of a hammer—is not an unfrequent consequence; or softening of the brain may come on with rapid strides or stealthy step, rendering life uncertain, or held at expense of motion, or intelligence, according to the extent and its seat.

In the child, the pale, pasty skin, the fretful restlessness, or the listless inactivity, varying according to the greater or less power in the surface and kidney to depurate the blood—the errors of motion, or perception, or of any special sense; these, and many other indications, should always attract to the threatening condition. That much permanent benefit can be obtained by any treatment, where organic changes have proceeded so far, is not always to be expected; but it will be satisfactory to know that the state of the patient had been noticed, and that death did not claim its victim before any rational measures for the promulgation of life, or mitigation of suffering had been entered into.

The choreic disturbances in children (and especially if they have been subjected to scarlatinal infection) dating their origin more or less closely after an attack of rheumatism, are well wor-

thy of notice. In many cases the chorea is the first symptom attracting notice to the condition of the heart. When rheumatic inflammation has been seated in the lining membrane, St. Vitus's dance has been so frequently a sequence, that it is, by many viewed in the relation of cause and effect. And this opinion, in many cases, seems verified. As above observed, the muscular irregularities sometimes cause the detection of the heart's injury for the first time. The interval between the occurrence of the rheumatic disturbance and the chorea is irregular; whilst the prognosis as to the subsidence of the choreic motions from heart complications, depends on the power of arresting the damage, and the capability of improving the general nutritive system. If the latter can be accomplished, the *remodeling* as it were, of the heart, keeps pace with the progress of growth in the patient. At times, however, the heart is so slightly disturbed as not to indicate any appreciable organic difficulty, although sufficient irritability is established to reflect upon the spinal nerves the disturbances of relation. It is in these latter cases that the metallic tonics, such as arsenic, zinc, oxide of silver, act so rapidly in cure. But in the graver cases, where the heart is more seriously affected, time forms one of the chief elements, by allowing the reproductive changes to ensue with the growth. In these cases is witnessed the reason of the insignificance of remedies which had proved so beneficial in others. Independent of any heart or kidney disease, the errors in the composition of the blood after rheumatism, or any other blood disorder, may act as frequent causes of disturbances of innervation. Hence, stimulant tonic, or sedative treatment, may be called for: in one the reproductive actions being below par; whilst in the other, *a want of relation between the blood and the assimilative power of the tissues themselves may be at fault.* A third cause, apparently, may be independent of any blood relation, and exist in the nervous centres, or the nerves themselves. In this way the proneness of chorea to be a one-sided disease may be accounted for.

The tendency to rheumatic complaints in a family where scarlatina has been *irregularly developed*, sometimes affords a clue both as to the nature of the attack and its relief. For it is not uncommon to find one child subject to rheumatism, and another having chorea without any apparent rheumatic affection. In these, fright, which in general is a highly productive agent, acts readily and violently. After twelve or fourteen years of age, private abuse, through the reflex actions of the spermatic branches over the heart and the nervous masses at the base of the brain, may produce alike disturbances. The bellows sound of the heart and in the great arteries in these cases resemble, in a measure, the bruits from more serious organic difficulty.

Fright is more commonly an excitor in the rheumatic or debilitated, than in sound and robust children. The development of the attack is also more immediate after fright, than after rheumatic disorder. Where the urine is of high specific gravity, depositing lithates or oxalates, and overcharged with urea, and the patient does not become correspondingly weak and emaciated, the error lies chiefly in the diet being in excess to the assimilative powers. The blood here represents the conditions favorable to acute rheumatism; and if previous kidney derangements had been engrafted from exanthematous disease or other cause, an attack is apt to follow. But if the individval be free from any renal difficulty, the rheumatic attack may not be fully generated, but disturbances of nutrition or in the assimilative balances may ensue, with chorea as a result.

Stammering in children, may sometimes be traced to the same causes and yield to proper treatment. As in chorea, fright, or other emotional excitement, has also been a prolific agent in this affection. Indeed, stammering might be called a chorea of the tongue and larynx. Almost every practioner, and layman, can recall cases of early impediment, which subsided gradually with the increasing growth and strength of the person.

Excepting in those cases of sudden and continued violent chorea, where the nervous exhaustion is so great as to defy timely repair, the prognosis, for the most part, is favorable; and even in choreic paralysis, a happy termination may be safely anticipated, if the kidneys regain their normal actions.

It is not difficult to understand, when the conditions of the blood or of the heart and kidneys in rheumatism are known, that dropsy may be a sequence—its severity dating from its degree, time, and place. Nor would it be, as it often is, a matter of surprise to the relatives of the patient, who have wondered at the apparent *over*-attention of the skilled practitioner, were his anxieties as to the issue of the case known, as long as the purring sounds of the heart and the cellular puffiness about the eyes, and the epithelial and albuminous deposite continue.

Diffused gout is sometimes mistaken for rheumatism; the liability to cardiac pains, palpitation, etc., adds to the belief. But the history of the patient, his mode of living and appearance, the family diathesis, and the success that may have attended the previous administration of remedies, serves to clear away any difficulty in the diagnosis.

As instances of rheumatic origin may be mentioned, the sudden attack of lumbago, pleurodynia, crick, stitch in the intercostals, the muscular achings whilst at rest or after getting warm in bed, or the dull and heavy pains, attended with a sense of coldness in the part, etc. Yet it may be well to mention that all these may be the result of long-continued constipation, and will frequently take their flight after a brisk purge.

There is a painful affection of the skin, termed dermalgia, that I will refer to. This affection, so afflicting to the patient at times, is by no means unfrequent. It is a somewhat common companion of hysteria; and from this fact, I have been led to regard some of the forms of this protean malady, as offshoots of rheumatism, or at least as indicating a rheumatic tendency in the blood. In many cases I have detected epithelial deposits, tubular casts, etc. From much opportunity in witnessing uterine disease, the frequent connection of hysteria with painful menstruation, has satisfied me that rheumatism plays an important part in it, and it also does in many cases of dysmenorrhœa unattended with hysteric phenomena. In apparent spinal disorder, this painful tenderness in the skin is a common attendant, and sometimes exists to such an extent over the processes, as to lead the unwary examiner into the belief of severe local injury. By pinching up the skin, and then making the same amount of downward pressure, this suspicion can be frequently dispelled, as the pain will be found much lessened, or at least not increased. The same condition exists also in certain gouty individuals, the increasing tenderness in the skin being many times a forerunner of an acute attack.

I cannot refrain from attracting attention, in this place, to a painful condition of the surface in children, the slightest touch being complained of. It is frequently the forerunner of severe, if not fatal convulsions, and evidences great functional or organic derangement of the nervous centres. When noticed, no time should be lost in making such applications to the spine, and base of the brain as may be demanded. If fortunate enough to be attracted early to this symptom of superficial pain, the convulsions may be rendered lighter, and of less duration. But unfortunately this condition sometimes remains unnoticed, or has made such progress when noticed, that the exhaustion from the convulsions is so profound, that organic repair and nervous recuperation do not ensue; and the child dies, either after a succession of rapid convulsive efforts, or becomes comatose, and sinks without a sign into its last sleep. These cases I have seen, especially after scarlatinal kidney disorder—in some an interval of comparative health had supervened, but after a time an icterode hue assumed the place of the natural complexion, with a certain puffy appearance, leading the parents or a common observer to think indicative of increasing flesh. If the kidney had been damaged, the violence of the convulsions by their continued succession, acts in a doubly dangerous manner—in the first, by the exhaustion, and in the second by the *extra amount of animalized matter* that is thrown into the circulation, and which cannot be voided by the natural emulgent channel of the kidneys. As in chorea, where the muscular movements are exces-

sive, the sulphates as well as urea will be found in excess in the urine, evidencing the rapid waste of muscular structure, by the inordinate movements during convulsions.—[*Am. Med. Monthly.*

(To be continued.)

LECTURE.—*Catamenial Gonorrhœa and Syphilis.*

Mr. Frederick C. Skey, Surgeon to St. Bartholomew's Hospital, has recently lectured on Gonorrhœal Rheumatism. The London *Medical Circular* gives us the lecture, from which we make the following extract, bearing upon a point of great interest:

I saw some time ago another most remarkable case of this kind—the splitting in pieces of a family might have occurred from the raillery and ignorance of the hospital surgeon, but he could not see it. A respectable-looking married man came with this catamenial gonorrhœa; he was very much puzzled about it, but the surgeon laughed at him. "So ho, my find friend," he said, "you've simply gone and done it; you've been with the girls." The man said not—that from the nature of his business it was impossible. "Then some onehas been with the girls or with your wife, for you have the bad disorder—that's the short and long of it." The man protested, till at last he swore an enormously large oath at the ignorance of us all. "Why, I have committed as many crimes as many men, and why should I be such a fool, if I wished to be cured, as to say, if I had, that I had not had intercourse with a woman." I don't believe he had, but that it was one of the dozens of cases where the irregularities of married life had given rise to a gonorrhœa, or blenhorrhœa, that I defy you to distinguish from common gonorrhœa. I say there is a "tertium quid" engendered during the period of ovulation or menstruation in the female, that may give rise to gonorrhœa, but I do not believe in syphilitic inoculation. If you know how to treat rheumatism, you know a great deal also of this disease. Mr. Abernethy, as I said, already went to the threshold on the subject, as regards "rheumatic gonorrhœa," or what you will see copied in the books and manuals as gonorrhœal rheumatism. Evans and Rose and Hennen, away from the coteries of London, settle the thing forever. You are probably aware, the prostitutes in France are all examined at stated times, and are furnished with clean bills of health? Well, Evans saw several hundreds of these women examined, and only three were diseased; but he had one hundred and fifty-three soldiers under his care at that moment with syphilis! I say, how did these 153 soldiers become diseased from three women? How did they get it? Where was it to come from? To my mind, now, it is as clear as that chloroform will produce insensibility,

or any other fact in surgery; they got it from the clean women, and not from the diseased. I told you of Torres Vedras. This army was inaccessible for a long time, and dozens of officers had intercourse with the couple of girls dancing at the theatre. These girls, mind you, in good health, yet shoals of these officers came to England with bad phagedænic sores. Do you think they got phagedæne directly, as Mr. Hunter would think, from these girls? I don't.

Well, I'll tell you another case, and within a very short period of the present—not to go back to Torres Vedras or Waterloo, or tire you with what you will find decked out in the books of the schools—the case of a lawyer. [I am glad it's a lawyer, if it must be somebody (laughter;) lawyers are so wedded to do nothing, if erroneous, to the decision of their judges.] It was, in a word, the counterpart of the first case—seduction, love (the old story)—seduction, gonorrhœa and a crop of sores. I examined the lady with the utmost minuteness. I sifted this case carefully. I believe there was no disease whatever in the lady nor in the gentleman previous to the occurrence; yet all the—what shall I call it—legal evidence was the other way. Legal proof on medical subjects at present is the greatest absurdity under Heaven, because well bound books on surgery say one thing to a man with a wig and gown on, and because a surgeon's opinion which is not only *viva voce* and original, but fairly worked out after thirty or forty years' analysis of facts and cases in hospitals, must be thrown to the winds, in favor of the *dictum* of some old book, or some new book copying the old.

I say, this material syphilitic infection is all a fallacy. I don't believe either in all that black letter lore of syphilis coming from St. Domingo with Columbus in the fifteenth century. Gonorrhœa is detailed in our oldest and most sacred of books.

Mr. Skey next stated the particulars of a very interesting case—a case of most frightful phagedænic sores in a gentleman, like those of the officers sent from Lisbon, but where the disease was clearly the result of scrofula, or some such constitutional taint in the gentleman's system aggravated by those injudicious courses of mercury, ordered for a very simple affection at first. The case was one, also, where the hymen was ruptured for the first time, but not a trace of disease existed in the lady.

"This old mercurial school, however, still holds out," Mr. Skey continued to say; "I am sorry that even men like Sir B. Brodie still belong to it. It is not true that a woman who will allow one man to her embraces, will allow any other; and if the disease be checked by mercury—*post hoc*, &c.—that we should go on giving it! In this last patient it made all this difference, that whereas Rose, or Evans, or Carmichael would have cured this gentleman without mercury, in following the plan of the older

schools he was at the point of death, owing to the mercury, under the first advice in London, affecting the membranes of his brain. We shall not speak of the hideous mutilations of face and nose, the time sacrificed away from business on the sick list, and the marks which rupia too often leaves on the forehead and face. I am satisfied, and you will be so too, when you see some practice, that all this old-fashioned dosing system with mercury is bad. I would almost go so far as to say, that the very worst cases of syphilis, so called in men that I have seen, have been the result of something wrong with the man rather than the woman, and where the "tertium quid" was aggravated by this system of giving mercury, as a piece of murderous old routine in all cases alike.

Well, a few words now as to gonorrhœa and rheumatism. Is there such a thing as spontaneous gleet? Yes; it is a catarrh of the parts. I know a gentleman who has had gleet; but he has been several months, aye years, in bed for another disease, and he had no possible manner of getting gleet.

You will find gonorrhœal rheumatism in excentric gonorrhœa, mostly in oldish people, the disease mild or the opposite, fond of fits and starts or aberrations; it is gonorrhœa in a rheumatic system, but not rheumatism connected as a secondary symptom or as cause and effect with gonorrhœa. I am satisfied, gonorrhœal rheumatism and gonorrhœa are children of one parent, and not related as rheumatism the child of gonorrhœa, the parent.

I will now tell you more: I have seen *every form of syphilitic disease* as obtained from healthy women. These cases occur in the better ranks of society, with men who are above suspicion. What is sometimes shocking in a moral point of view, is of the utmost value to us pathologically. But I must not dwell on these cases. The gentlemen come to me expressing their unbounded astonishment, yet if you make the most careful search, even with the speculum, there is no disease in the lady; it would be almost a relief to one's mind to find something, but there is no disease whatever. No, it is all fallacious.—[*Ohio Medical and Surgical Journal.*

Treatment of Primary Syphilis by Preparations of Iron.—Ricord suggested the employment of potassio-lactate of iron in phagenic chancre, and Mr. Acton recommends it very highly. Mr. Behrend (*Lancet*), believing in the essential identity of the virus of every form of chancre, and attributing the apparent differences to special circumstances, was led to employ this preparation of iron in the treatment of the common chancre. He reports the details of a number of cases thus treated, with the most satisfactory results. His method of administering the iron, is to make a mixture of one ounce to six, of which two teaspoonfuls are to be taken three times a day. The local applications are simple.—[*Med. Independent*

EDITORIAL AND MISCELLANEOUS.

The Fourteenth Volume, of the New Series, of the Southern Medical and Surgical Journal.—In presenting the first number of the fourteenth volume of this Journal to our readers, we would call their attention to the enlargement of the work, which, by the liberality of the pulisher, presents to the subscriber as large an amount of valuable reading matter, as any similar work, at the same price, in the country.

Having its circulation principally in the Southern and Western States, we have endeavored to embody in each number of the journal, such original and selected matter, as our own judgment and the advice of our more experienced colleagues have indicated to be most valuable for the exigencies of the Southern Practitioner. No new principle in medicine, no new view of pathology, or rational mode of treatment, has met our eye, throughout the whole range of our fifty or sixty exchanges, Domestic or Foreign, but what we have endeavored, so far as we had space, to treasure up in our pages for the benefit of our readers. This we shall still do, so long as our connection with the work shall continue. Having been in long and intimate relations with a large number of Physicians throughout the country, we have, we hope, acquired a sufficient knowledge of the wants of the Southern Practitioner, to prepare for him a useful and efficient journal. We are aware that the thirteenth volume of the Southern Medical and Surgical Journal, will be found deficient in some of the departments of Medical Literature; thus in the department of Reviews, our estimation of the true intent and object of a *monthly* journal has induced us not to occupy our space with extended analyses of works, unless in so doing we could embody views and suggestions, of a practical nature, for the benefit of the reader. We have given each work, sent us by authors and publishers, a diligent and careful examination, and, when found worthy of recommendation, have given it our approval, or we have carefully pointed out its defects. We look upon the department of Reviews as belonging more particularly to the Quarterly and Bi-monthly journals, one of which, each member of the Profession should subscribe for, but in no case, to the exclusion of the *monthly* journals; for in these last he finds the supply for his daily, and, indeed, his *hourly* necessities. "Knowledge (says a distinguished writer) evaporates like water; and as the ocean itself, unless replenished, would become empty, so the brain, unless its avenues to improvement are kept open and well trodden, becomes but a barren waste, haunted by the ghosts of worn-out and obsolete thoughts:"—a fatuous and somnolent demain, a "Sleepy Hollow" and its occupant a veritable Rip Van Win-

kle—dozing while the whole world has been advancing—his mental status being the index to its condition just twenty years gone by!

In making these remarks, of course, we have no fear of giving offence, for none from this sleepy region will ever be offended by these distasteful animadversions, for what is written, is for them, "*as though it never had been writ.*"

The volume of our journal, just now commencing, will, we hope, besides the liberal enlargement by the publisher, present an increased interest to its readers, in the many valuable *original* papers now in prepation for its pages. We have also on hand, lignographic illustrations of several interesting articles, which are intended to embellish the work and add to its value.

We continue to invite contributions from our brethren, and with their countenance and support, we enter upon the labors of this fourteenth volume with that hope and confidence, which, a determination to do our duty, alone can inspire.

HENRY F. CAMPBELL.
ROBERT CAMPBELL.

Materia Medica and Therapeutics: with ample illustrations of Practice in all the departments of Medical Science, and very copious Notes of Toxicology, suited to the wants of Medical Students, Practitioners, and Teachers. A new edition, revised and enlarged. By THOMAS D. MITCHELL, A. M., M. D., Professor of Materia Medica and General Therapeutics in Jefferson Medical College, and formerly Professor of Chemistry, Materia Medica, and Theory and Practice in the Medical College of Ohio, Transylvania University, and the Kentucky School of Medicine; Author of "Elements of Chemical Philosophy," &c., &c. Philadelphia: J. B. Lippincott & Co. 1857. 8vo., pp. 820. (For sale by T. Richards & Son.)

This last edition of Professor Mitchell's work has been brought up to the very last hour of the Science of Therapeutics. Every thing new pertaining to the subjects under discussion has been collected from journals and books to enrich this volume; and yet it is neither cumbrous, unwieldy or expensive. We regard it as perhaps the most practical of all the treatises on its special subject. This work perhaps would not answer as the sole treatise of Therapeutics possessed by the Practitioner, nor do we know any work that would; but the neglect of the practical good sense and honest labor stored away in its pages will deprive the Physician of some most valuable suggestions and expedients.

In the miscellany of the present number of our journal will be found a simple test for Quinine and morphine. We select it for its practical value and convenience, and also as a specimen of the many treasures garnered up in Dr. Mitchell's book. The style of the work does much credit to its publishers, Messrs. J. B. Lippincott & Co.

A Dictionary of Medical Science; containing a concise explanation of the various subjects and terms of Anatomy, Physiology, Pathology, Hygiene, Therapeutics, Pharmacology, Pharmacy, Surgery, Obstetrics, Medical Jurisprudence, Dentistry, etc.; Notices of Climate, and of Mineral Waters; Formulæ for Officinal, Empirical, and Dietetic Preparations, etc.; with French and other Synonymes. By Robley Dunglison, M. D., LL. D., Professor of the Institutes of Medicine, etc., in the Jefferson Medical College of Philadelphia. Revised and very greatly enlarged. Philadelphia: Blanchard & Lea. 1857. 8vo., pp. 992. (For sale by T. Richards & Son.)

Professor Dunglison—the Samuel Johnson of Medical nomenclature—has brought forth the Fifteenth Edition of his great work, "The Medical Dictionary."

The above announcement speaks volumes; a good reliable dictionary is a necessity which admits of no choice; we may neglect other departments of Medical literature, but the *words*, "the vesture of our thought," must be at our command, or we must be dumb. The number of editions through which this work has passed indicates its appreciation by the Profession. The labor bestowed on this last edition is immense, and speaks well for the industry and power of research of its distinguished author. In its style and typographical excellence Messrs. Blanchard & Lea fully sustain their well established reputation as publishers of medical works.

Lectures on Diseases of Women. By Charles West, M. D., Fellow of the Royal College of Physicians; Examiner in Midwifery at the Royal College of Surgeons of England; Physician Accoucheur to St. Bartholomew's Hospital, and Physician to the Hospital for Sick Children. Part I.—Diseases of the Uterus. Philadelphia: Blanchard & Lea. 1857. 8vo., pp. 316. (For sale by T. Richards & Son.)

We have given the above work a careful examination. We are familiar (as who is not?) with the previous writings of Dr. West, and all we know of them speak much in favor of the present treatise. A fairer, more honest, more earnest, and more reliable investigator of the many diseases of women and children is not to be found in any country. His own Preface will give a better idea of the intents and objects and uses of the book, than any exposition of ours. We therefore quote briefly:

"These Lectures are a first instalment towards the discharge of that debt which the opportunities of a hospital, and the responsibilities of a teacher, impose upon me. A second volume, which will treat of all the remaining diseases of the female system, will appear, if health and strength are spared me, within three years from this time. I have published this part separately, because I believe that students and junior practitioners stand in much need of that help which, with reference to an important class of these ailments, it may perhaps afford them."

For the Student and junior Practitioner the work has been particularly prepared, and to this class we would earnestly commend it.

A Case of Excision of the Hip Joint for Morbus Coxarius, with remarks upon the propriety of such an operation, and a summary account of the recorded cases up to the present time. By R. A. Kinloch, M. D., Surgeon to the Roper Hospital, and Lecturer on Surgery in the Charleston Summer Medical Institute.

This valuable paper, sent to us by our friend, the author, has been upon our table for some time, but by some mischance overlooked. It details an operation by the reporter, which, though unfortunate in its result, constitutes a valuable record in this department of operative surgery. The value of the paper consists in the research made by the author and the bringing together of a number of cases, with their peculiarities and their results. This he has done in a tabular form, so that the main points of each case are conveniently presented to the reader. We commend the article to all those who are interested in cases of Morbus Coxarius, and to all who wish to become familiar with the statistics of the operation of Excision of the Hip Joint.

Books received for Review.—Besides the works noticed in our present number, we have received from Messrs. Blanchard & Lea the following:

"Dunglison's General Therapeutics and Materia Medica. Sixth edition, revised and improved."

"Peasley's Human Histology:" a new and valuable work, to be noticed in our next number.

From Messrs. Lindsay & Blakiston—

"Mendenhall's Students Vade Mecum. Fifth edition, enlarged and improved."

"A Practical Treatise on Diseases of Women and Children. By J. Forsyth Meigs. Third edition, carefully revised."

From Messrs. J. B. Lippincott & Co.—

"Essays on the Secretory and the Excito-Secretory System. By Henry F. Campbell, M. D."

The above works came to hand too late for a careful notice; they shall meet with full attention in our February number.

Atlanta Medical College—Resignations and Appointments.—Professors Boring and Means have resigned their respective Chairs of Obstetrics and Chemistry in the above Institution.

To fill the vacancy caused by the retirement of Professor Boring, Dr. T. S. Powell, of Sparta, has been appointed by the Trustees; we hope that the Institution will be able to secure as able a successor to Professor Means.

Dr. Means retains his connection as Professor of Chemistry with the Medical College of Georgia.

Binding of Thirteenth Volume.—We would suggest to our readers the binding of their volumes of the Journal, thus adding a book to their libraries, instead of having their tables cumbered with twelve perishable pamphlets, which must soon disappear from their possession.

Discriminating Test for Quinine and Morphia.—Although the following is in a book, which all our readers should possess, on account of its simplicity and importance, we record it prominently in our extracts:

"As mistakes have been made, and may be again committed, in confounding sulphate of morphia with sulphate of quinine, it is important to distinguish accurately. The labels may have been rubbed from the bottles, and it would not do to rely on taste or smell. Both salts are bitter, but one is decidedly poisonous. If we add a drop or two of strong nitric acid to small portions from each bottle, placed on a watch-crystal, the quinine salt will be made yellow, while the salt of morphia will be changed to a bright red. The experiment is performed with ease, and is sufficiently accurate for practical purposes, and every physician should keep the *test* in his mind."—[*Mitchell's Materia Medica, last ed.*, p. 324.

Sympathetic Inflammation of the Eyeball.—Mr. Walton remarks (*British Med. Journal*), that the horse doctor is in advance of the accomplished ophthalmologist in their knowledge of some diseases of the eye. It has been a practice among farriers, in certain ophthalmic diseases of the horse, to destroy the eye by suppuration, knowing well that the other eye, which is in great peril, could be saved by this means. Mr. Wardrop, taking advantage of this hint many years since, practiced evacuating the humor of the affected eye, and thereby relieved the sound organ from the dangers of a sympathetic inflammation.

[This has been the uniform practice of Professor L. A. Dugas, of this College, for years, and we believe it is a measure now very generally adopted by surgeons in such cases.]—Eds. S. M. & S. Jour.

Oil of Tansy.—Dr. Chapin, of Winchester, introduced (to the notice of the Middlesex East District Medical Society, Nov. 4th, 1857) the subject of oil of tansy in its ecbolic and toxicological relations, and related a case in which he was summoned at midnight to visit a married female, "in a fit." The patient was found in bed, partly conscious, and in paroxysms. A distinct smell of the oil pervaded the apartment. Vomiting had occurred. He immediately exhibited ipecacuanha and sulphate of zinc, which was followed by free emesis. In an hour the mind became clear and she got along very well. The woman was four months advanced in pregnancy, and took the oil for abortion. The quantity taken was half a fluid ounce. Dr. C. stated that some cases have been fatal.

Drs. B. Cutter and Drew, of Woburn, adduced similar cases, and Dr. Underwood, of West Cambridge, spoke of a young woman in a hotel

who took the oil to procure abortion. The immediate effect was violent convulsions. At full term a child was born, *not larger than a rat.* The child lived three weeks. This case was mentioned to show that the oil sometimes arrests growth. Dr. Toothaker, of Wilmington, spoke of a middle-aged married woman who took two fluid ounces of oil of tansy in divided doses without effect. She then resorted to the woods, although it was midwinter, and the snow knee-deep, and gathered a quantity of savin leaves, an infusion of which was freely taken without success. At term, she bore a medium-sized child, which for some time was esteemed *non compos.* Now, however, at the age of ten, the child is a bright boy.

Oil of Cedar.—Dr. Ingalls, of Winchester, spoke of the exhibition of half a fluid ounce of oil of cedar, which was followed by nausea and fright. The girl took it for an emmenagogue. Dr. Hodgedon, of West Cambridge, said he attended a woman who had been in convulsions three or four hours on taking cedar oil. After an emetic she recovered, with no ill effects. The patient was chlorotic, and dosed for amenorrhœa. Dr. Underwood asked if the use, by midwives, of an infusion of raspberry leaves, in place of ergot, was known to the Society. Drs. B. Cutter and Drew had found draughts of cold water useful to increase pains, and allowed their patients a free use of the article during labor, Dr. Toothaker inquired if the uva ursi wonld act as ergot. In one case he used the infusion very freely, *with no effects.* On exhibiting a moderate dose of ergot, contractions immediately ensued.—[*Boston Med. and Surg. Journal.*

Colica Pictonum produced by the White-lead Treatment of a Severe Scald.—Dr. G. A. Kunkler relates the case of an Irish servant girl, who severely scalded the fore-arm and hand. Extensive vesication followed. The blisters were punctured, and common white paint, of the consistence of cream, was freely applied with a camel-hair brush, the part was covered with cotton and a roller applied over the whole. This dressing was repeated on the following day. On the third day she exhibited unmistakable signs of colica saturnina—acute abdominal pain, retraction of the umbilicus, constipation, and slight discoloration of the gums. The symptoms yielded to opium and purgatives, and the linseed-oil and lime-water dressing was substituted for the lead, under which treatment the burn got well. Dr. Kunkler states that he has freely used the white paint in a number of other cases, some of them of great severity, without meeting with a bad result. The editor believes this to be the only well-authenticated case of colic resulting from the application of white lead to burns or scalds.—[*Medico-Chirurgical Review.*

On the Physiological and Toxicological Properties of Woorara.—M. Pelikan has communicated to the Academy of Sciences the results of his experiments on woorara poison. With regard to its physiological effects, the author arrives at the same results as M. Cl. Bernard. As to its toxicological action, M. Pelikan finds that an aqueous solution introduced into the stomach by an elastic tube produces poisonous effects, but more slowly and less energetically. This cannot be explained on the supposition that woorara contains a certain quantity of serpent-poison, for it is characteristic

of nearly all the narcotic poisons which are easily absorbable. Curarine possesses all the active properties of woorara. Five centigrammes of the alkaloid introduced under the skin of a rabbit caused death, with all the symptoms of poisoning by woorara. When woorara is absorbed in a sufficient dose to produce death, there can be no question as to the antidote. Strychnia can provoke its peculiar symptoms only in the case where the dose of woorara has been insufficient, and *vice versa*. Solution of woorara precipitated by tannin loses its effect in an ordinary dose, but in powder mixed with powdered tannin, and introduced into a wound, it preserves its poisonous action. The action of the poison is not destroyed by iodine dissolved in iodide of potassium, neither in the case of the two solutions mixed, evaporated, and the residue introduced into the subcutaneous tissue. [*Archives Générales*, and *Brit. & For. Med. Rev.*

Pulmonary Epithelium.—In the July number of the British and Foreign Medico-Chirurgical Review, we notice an article by Dr. C. Radclyffe Hall, on the epithelium of the air vesicles of the human lung.

Some of our readers may recollect a paper by Dr. Hall in the last October number of the Review, in which he states that in chronic pulmonary consumption, "fatty atrophy of the epithelium of the air vesicles is antecedent to the formation of tubercle; in the same number we have a paper by Mr. Rainey, against the existence of epithelium in the air vesicles. This paper by Dr. Hall assumes to demonstrate these epithelial cells, and is illustrated by wood cuts of their microscopic appearance as seen by Dr. Hall and Dr. Brittan. Assuming that these illustrations are correct, and we have no reason to doubt it, there seems no doubt but that epithelial cells can be demonstrated in the human lungs, and the lungs of the mammalia. We cannot but agree with Dr. Hall, that on a question of relative authority, "the positive evidences of one trustworthy observer is usually allowed to overrule the negative evidence of many." An examination of this article by Dr. Hall, with the drawing of the microscopic appearances by Dr. Brittan, will not fail to convince any one of the existence of epithelium in this situation. If this were not the fact, the statement of Dr. Hall that fatty degeneration of the epithelium of the air cells preceded the deposition of tubercle, (an observation which we conceive to be of value, and which we hope may be further elaborated,) would of course be entirely without foundation.—[*Buffalo Med. Jour.* F.

Treatment of Anatomical Wounds with Lotions of Chlorine Water.—M. Nonat, Physician to the Hospital of La Charité, recommends the use of lotions, with solution of chlorine, in cases of anatomical wounds, which unfortunately are far from being always exempt from danger. Be the wound large or small, be its surface united or unfractuous, the solution of chlorine destroys the putrid matter, which acts like a virus, and which causes so bad an influence on the system when absorbed. This agent may perhaps be absorbed, mix itself with the blood, and thereby prevent the mischief arising from them, or destroy those bad symptoms which have already appeared.

The way to use it is very simple. The wound is first well washed with water, then with the solution of chlorine. If the wound is one of some days' standing, if it is inflamed, if the lymphatic vessels and glands are

obstructed, if the general appearance is favorable, and provided there are no symptoms of putrid infection,—the lotions of chlorine may arrest these accidents. It is useful in these cases, to use at the same time inhalations of chlorine.

M. Nonat has often had opportunities of testing these means, and in very serious cases. He thinks chlorine ought to be put at the disposal of the students, in the dissecting halls, and would have the following inscription upon the walls of the amphitheatre—"Wash, as soon as possible your anatomical wounds with solution of chlorine."—[*Union Medicale*, and *Medical Circular*.

Cod-Liver Oil Solidified with Gelatine.—Take of pure gelatine, half an ounce; water, simple syrup, of each four ounces; cod-liver oil, eight ounces; aromatic essence, as much as may be sufficient. Dissolve the gelatine in the boiling water, and add successively the syrup, the oil, and the aromatic essence; place the vessel containing the entire in a bath of cold water; whip the jelly for five minutes at most, and then pour it, while still fluid, into a wide-mouthed glass bottle, furnished with a cork, or with a pewter cap, or if a bottle be not at hand, into a porcelain or earthenware pot, which should be carefully closed.– [*Bul. Gen. de Thérap.* and *American Med. Monthly*.

Lichen and Cod-Liver Oil—Take of Iceland moss jelly, four ounces; gelatine, four scruples; hydrocyanated cod-liver oil (to which two drops of essence of bitter almonds have been added,) six drachms. Prepare the Iceland moss jelly in the usual manner; melt the gelatine and pass it into the vessel which is to hold it; then add the cod-liver oil; stir the entire with a spatula, until the mixture be homogeneous and the jelly begins to congeal. Dose—two or three spoonsfuls daily.—[*Bulletin Général de Thérapeutique* and *Dublin Hospital Gazette*

Interesting Case of Transfusion of Blood.—This operation was successfully performed on the 16th of September, by Mr. Wheatcroft, surgeon, of Cannock, Staffordshire, England, on the person of a woman named Wood, residing there. Immediately after her accouchment fearful hæmorrhage set in, draining the woman of blood. She felt herself dying, and summoned her husband to her bedside, bid him "good bye," and earnestly requested him to take care of the children when she was no more. She then became pulseless and gasping, occasional breathing being the only indication of life. A vein was opened in her arm, and one in the arm of her husband, and as the blood flowed from the latter. it was transmitted, by suitable apparatus, into the veins of the wife. After seventeen ounces had been thus injected, the pulse became perceptible, the colorless lips reddened, the glassy eyes brightened, and she thankfully said, "I am better. The case has progressed very favorably, and the woman is recovering.—[*Medical Circular*.

Chloroform Liniment in Burns.—M. Bargiacchi states that he has found the extreme suffering produced in bad burns completely relieved by means of a liniment composed of chloroform and cod liver oil.—[*Bull. de Thérap.*, and *Med. Times and Gaz.*

Glycerine is found to be a solvent for almost all substances, and as a pharmaceutic agent and vehicle, has an extensive range of applicability. One is as a vehicle for the external application of Iodine, particularly where it is desirable to have the article absorbed by the skin. Used in the proportion of *one* part of Iodine to *five* of Glycerine, it produces some smarting, but can be well borne. After painting it upon a part, it may be covered with gutta percha paper to prevent evaporation; and in this way, fifteen grains of Iodine may be absorbed into, and eliminated from the system per day, for several weeks together without any injury to the general health. This at least is the testimony of Dr. Szukits, a German physician, who has tried it in 24 cases.—[*Peninsular Jour. of Med.*

Glycogenic Function of the Liver.—Dr. Louis Figuier read on the 27th July, before the Academy of Sciences, a paper in which he aims to disprove the glycogenic function of the liver, on which so much stress has been laid by M. Bernard. He maintains that this function belongs to all of the parenchymatous organs that receive blood, such as the heart, lungs, spleen, &c., and also in the blood of the general circulation.

[*Western Lancet.*

Tetanus.—The last number of Guy's Hospital Reports contains a paper by Mr. Poland, on Tetanus. He gives an analysis of all the cases treated in Guy's Hospital, since 1825. The whole number of cases treated was seventy-two. The great majority were fatal, and in those that recovered, it was impossible to assign the cure to any particular remedy. Mr. Poland is of the opinion, that the best plan of treatment is to strengthen the patient, and thus enable him to pass through the disease—[*Ib.*

The Daguerrean Art in Medicine and Surgery.—For some time the daguerreotype has conferred much benefit upon the profession, by enabling practitioners to secure representations of disease externally manifested, and also copies of internal lesions observed *post mortem.* In surgical cases, especially, much advantage has been derived from thus taking views of the diseased part at different times, and also in exhibiting the final result.

A few days since, Dr. John B. Brown, of this city, showed to us certain daguerreotype views of individuals residing at a distance—some of them in Canada—who were affected with distortion of the feet, of different degrees of intensity. The representations thus sent enabled him to decide what procedure should be adopted, and whether it would be necessary for the patient to be under daily inspection or not. The results of operations done to remedy club-foot have often of late thus been sent to Dr. B. The same plan has been effectively adopted in cases of spinal distortion. The many advantages secured both to patients and their advisers by this method, must be evident, and the daguerreotype apparatus may be fairly considered one of the articles of the surgeon's *armamentarium.* The Talbotype process is even better suited than that of Daguerre for sending these views to a distance—paper being used to receive them instead of a heavy plate.—[*Boston Med. and Surg. Jour.*

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ARTICLE V.

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."

[*Transactions of American Medical Association*, vol. vi.

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-

ry, than is *conjecture;* and hence, by the aid of the former, may we endeavor to show, that Pathology must ever find its proof in Therapeutics.

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 Homœopaths,) 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, nausea 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, invariably, 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-

companied 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 hyperæmia 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 Excito-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 consitute 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 Maillot, 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 uncontrolable 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

diarrhœa 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 fistulæ, *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 fæces, 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:—

℞. Blue mass, . . ʒj.
Prepared chalk, ʒiij. Triturate well together.

It forms a blue powder, very similar in physical properties to

the officinal hydragyrum 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 fæcal 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 Pharmacopœias, 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 fæcal 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 phlegmasiæ. 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 diarrhœa, 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 diarrhœa 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 aud 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 leucorrhœa attended with ulceration of the os uteri or cervical canal, and enlargement of the muciparous glands of the vagina, or simple ulceration without leucorrhœa, 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 affectious 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 ulcerative disease. The relapses which I formerly used continually 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.

Cauterizatian 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 the3rd 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 leucorrhœa 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 leucorrhœa, 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—remarking, 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

same. 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 attemps 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 en 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.

Dr. Posey's Report.

[The following very able Report was presented to the American Medical Association by Professor R. D. Arnold, of Savannah, at its last meeting, in Nashville, Dr. Posey, the reporter, not being able to attend the meeting. Appreciating its deep interest to the Southern Physician, and especially those of our own State, in a statistical point of view, we begin its publication in our present number. The balance of the paper, relating to Epidemic Diseases, will find a place in our March number.

Georgia certainly has no reason to complain—she has recorded herself pretty fully in the last volume of our National Transactions.

Report upon the Topography and Epidemic Diseases of the State of Georgia. By John F. Posey, M. D., of Savannah, Ga.

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 sea-coast.

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 Suwanne or Ocklockonnee 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 orbitulite 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, extremly 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 qnartz 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 water-shed 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 oppresively 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 langnishing, 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 unfrequently 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.]

On Rheumatism of the Epithelial and Non-Epithelial Fibrous Tissues: Its Sequence to Scarlatina and other Exanthemata. On Rheumatic Gout, Chorea, &c. &c. By H. P. DeWees, M. D. New York.

(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 vomicæ 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-

dons—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 bursæ 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-

tion 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-

arus 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 phospates. 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 turpentine, 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 *materies 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. Clam 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 thickning, &c., remains, after the subsidence of the acute pain, will be found beneficial. The following recipe I am in the habit of using;—

℞ Ol. Origon, ... ℥i
Ol. Lavend. Spicat., . . ℥ss
Tinct. Aconite Sat., . . ℥i
Ol. Amyg. dulc., . . . ʒiii
Aq. Ammon. fort., . . . ʒii
Vel., ... ℥ss
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. Jalapæ 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 nervons 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 convulsion 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 ammonia* 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 hysteric 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 antagonistic remedies, and food, that any permanent benefit can be realized, or security against attack be obtained.—[*American Med. Monthly.*

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 character. 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 considerable attention. In all these efforts, the pathology of *tic douloureux* 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, especially 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 colour, and are rather diminished in size than enlarged. It can scarcely be supposed that beneficial results should follow from treatmant 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 osseous canals, and in others subjected to exposure, to changes in temperature, as well as to the agency of morbific 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 below, 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 discharge. 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 fossæ, 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 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 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 Lûer, 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 V 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. 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 Lüer'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 anæsthetic influence of chloro-

form or ether. For the rest, the effects of the cicatrices upon the countenance can scarcely be called disfiguring, and the patient speedily recovers without suffering from much constitutional disturbance.

In this operation, and in those connected with the two succeeding cases, I was assisted by my colleague Prof. Cox, by Drs. Proudfoot, Abrahams, Selden, Guleke, 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. 16*th*. 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 twitchings on the nose, and at the corner of the lip.

17*th* (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.

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

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

20*th* (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.

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

28*th*. Patient entirely well.

30*th*. Returned home to Maryland in high spirits, and delighted 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 *spheno-maxillary 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 spheno-maxillary 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.

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

13*th*. 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.

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

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

16*th.* 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 spheno-maxillary fossa.

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

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

28*th.* 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, sinapisms, 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 spheno-maxillary 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.

6*th.* 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.

7*th.* 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 nurishment—gruel, rice-water, ice-water, toast-water, and chicken tea. Ordered a gentle aperient.

8*th.* 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 spheno-maxillary 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.

9*th.* 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 tinture 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 labor; 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."

Researches 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 Flandin 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 (AsO^5) 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.

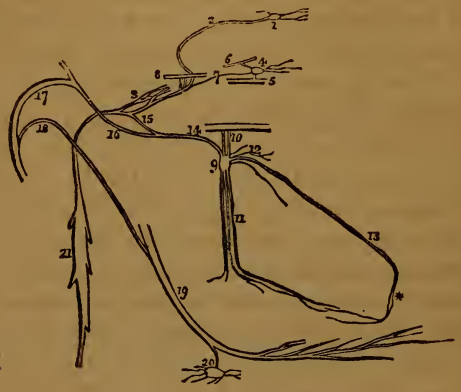
It is not, however, simply to signify our approbation, that we have begun the present notice. Dr. C., in his remarks previous to detailing his cases, in endeavoring to account for the success of his operation when other modes of procedure had failed—*inadvertently*, we are convinced—makes the statement 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 unfamiliar 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 injuiries 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 Stœckel, 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 anæsthesia 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 Anæsthesia.

"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."

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ORIGINAL AND ECLECTIC.

ARTICLE VII.

The Appropriate 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.

"All practical medicine depends upon a knowledge of three things—to wit: 1st. *Pathology;* 2nd, *The articles or agents of the materia medica;* and, 3rd. *The relations between these two elements.*"—[BARTLETT'S PHILOSOPHY OF MED. SCIENCE.

GENTLEMEN:

In our discussion of the "Treatment of Dysentery," so varied, inappropriate and often irrational and incompatible were the measures, found to have dominion over this most important and common field of interest—that it became necessary for us to inquire into their value, as well as the appropriateness of their application to the existing state of this disease, and also into the probabilities which were derived therefrom, in favor or against accomplishing, by them, the relief of that condition.

And thus, were we obliged to lead you back to "first principles," in giving you a common-sense view of these different systems, that you might apply the gauge of reason to whatever of error or assumption might have obtained sanction in these premises, and so be enabled to select from the varied and antagonistic doctrines in vogue, whatever of good they might contain, to the rejection of that which might operate in direct opposition to the attainment of the ultimate object in view. In

short, we have thus dwelt, to some extent upon this subject, for the express purpose of *co-ordinating* and *systematising the treatment of this disease.* And we have been able to gather, in our survey of this field, some facts which were good and fit to garner up, but so scatteringly have they been strewn, and so commingled have they been with the greater amount of worse than useless and pernicious chaff—so much have these principles been found to operate to the effect of "blowing hot and cold together"—as to call for the exercise of much discrimination and the adoption of a system of stern and uncompromising selection.

Some of the plans of treatment in use—and by far the most valuable—we have yet to notice.

There *have* been proposed, from time to time, many valuable remedies for the relief of this disease—and would it not have been remarkable, at this stage of the world's history, if accident or experiment had not pointed out the fact, that the exhibition of certain medicinals was followed by good results in this disease; and this knowledge had not come in reference to those agents, under *these circumstances*, empirically; especially, when we consider, that thus, is *first* derived almost all of our knowledge concerning the action of remedies in general?

But in *this* case, whether from the conflict between a false conception of the pathology of this disease and the manifest results of these agents; or from the stubbornness of preconceived notions in perverting the interpretation of these manifest results, it appears always to have happened—that although there *has* been long in use, *some* APPROPRIATE TREATMENT for this disease, yet it has existed in such fragmentary parcels, and has been so mixed up and incongruously yoked with so much of countervailing force, as steadily to have maintained, here, an unsettled state of our science, or an entire stasis in this particular.

And this brings us to notice a certain class of remedial agents, which constitute what we may call the "appropriate treatment" of this, the intestinal element of Dysentery, on account of the applicability and the correspondence of their therapeutic action—their specific agency, in supplying the demands incident to this diseased state, as determined by the characteristic qualities of the organ and tissue involved, as well as the circumstances in which they are found, and whose abnormal

condition constitutes this disease; and especially, as experience has taught us, that all or most of this group of remedial agents have been found invaluable for the cure of this very disease.

Let us now return and see, what are the indications, which are involved in this local condition, and what are these remedies, whose specific properties of action, experience has taught us to be of that character, which would be best adapted to meeting the exigencies of this case. We have seen, that there were *two indications* derived from our consideration of the state and circumstances of the *intestinal element* of Dysentery. We will now consider them separately.

First—*There is Inflammation of a Mucous Membrane*—REQUIRING ITS OWN PECULIAR TREATMENT.

Now, the Science of Therapeutics may be said to have been based upon the fact, that certain agents, derived from the three great kingdoms of Nature, are found to exert a decided influence upon the living organism when brought in relation with it; and farther, that "*they have particular tendencies towards certain parts of the body, over which parts they exert a peculiar and special influence.*"* The arrangement of medicines, or their classification, is made according to the knowledge of what these tendencies are. And, says Headland, (in his recent and very valuable "Essay on the Action of Medicines,") "This classification is certainly more scientific than a mere empirical arrangement; and it will be so far of use, that it will enable us, when we wish to make an impression on a certain organ or set of organs, to select those medicines which especially influence it or them. . . . . There is no doubt whatever," says he, "of the existence of these local tendencies or partialities,—their proof," he continues, "depending in part upon the fact, that medicinal agents are actually detected, in many cases, in the very organs over which they exert a special influence."

It is maintained, on the high authority above quoted—"that medicines must (as a general rule) obtain entry into the fluids of the body—pass, that is, from the intestinal canal into the system at large—before their action can begin"—unless—we would suggest—the part to be affected by them be external or superficial and their immediate application is thus rendered practicable.

* Headland.

And just here, we would object to the proposition, as a general rule, which requires in all cases, that every particle of all kinds of medicines must be absorbed into the circulating mass, before they can manifest their peculiar action in the direction of their appropriate organ or tissue. For instance, in the case of the mucous tissue of the alimentary canal—the very surface upon which, as a general thing, all medicines are thrown—why may not these agents be applied in sufficient quantity, as not to admit of an entire absorption of every particle, to travel the round of the circulation and be directed to the same surface by which they were taken up, before they can manifest their peculiar agency—when their application is primarily and immediately made to that superficial surface?

The advantage here is, that whilst such a surface is acted upon in the usual way, that is—according to this author—by imparting its impression or influence to the tissue or organ in its transit through it, or its elimination by it, (for this is the manner in which he accounts for the action of medicines upon secerning organs and tissues, generally); in *this* case, the tissue has the advantage of its first contact and its transit through it, into the circulation, as well as its return through the tissue, to be eliminated in its proper form, by the mucous follicles of this surface. Take, for instance, the action of Turpentine, whose modus operandi he explains in the manner just given—Are we to understand, that all the Turpentine voided in the alvine discharges, has gone the round of the circulation and has been secreted, as Turpentine, by the mucous follicles of the intestinal canal? Be it so—its operation must be the same, and upon the same tissue. But we prefer to believe, that a good portion of it becomes mixed with, and impregnates, the contents of the canal, and thus passes by the shorter route, in contact with, and imparting its influence to, this surface.

But to return—*There is*, in Dysentery, *an inflammation of a mucous membrane*, REQUIRING ITS OWN PECULIAR TREATMENT.

Now, the treatment of this inflamed mucous membrane is to be derived from that class of remedies, unquestionably, whose known specific qualities of action, affect the condition of *this* tissue, wherever it exists. Then let us see, what articles of the

Materia Medica, are found to be suitable for supplying the demands conveyed in the proposition here reiterated.

There is *Ipecac*—a "mucous membrane remedy," whose value as a remedial agent was first disclosed by the benefit derived from its use in Dysentery; and consequently, this has ever since been considered, by many, a reliable form of treatment for this very disease.

It is recorded, that "John Helvetius, grandfather of the celebrated author of that name, having been associated with a merchant who had imported a large quantity of Ipecacuanha into Paris, employed it as a secret remedy, and with so much success in Dysentery and other bowel affections, that general attention was attracted to it; and the fortunate physician received from Louis XIV., a large sum of money and public honors, on the sole condition that he should make the remedy public. From this period it has maintained its standing among the most useful articles of the Materia Medica."

Dr. Wood says that—"In Dysentery it has been supposed to exercise peculiar powers, but is at present less used than formerly, in doses sufficient to excite vomiting."

Now, these *peculiar powers*, we would venture to suggest, are alone dependent upon the specific properties of this remedy, in altering the condition of the mucous tissue, wherever it exists—this being a disease whose local element is an inflamed mucous membrane—hence the benefit derived from its use. And if proof of this proposition is demanded, it may be established from the experiments of Magendie, with the active principle of this agent, from which it was shown "to have a peculiar direction to the mucous membrane of the alimentary canal and the bronchial tubes. Ten grains of the impure alkali, administered to dogs, were generally found to destroy life in twenty-four hours, and the mucous membranes mentioned were observed to be inflamed throughout their whole extent." And further, it is stated, that the "same result took place when emetia was injected into the veins, or absorbed from any part of the body." And with the same testimony may be placed the effect of the inhalation of the powder of Ipecac into the lungs, producing bronchitis, as well as its injection into the veins, giving rise to pneumonia, as was shown by Magendie's experiments. When

Ipecacuanha is employed in this disease, it is not used as an emetic, but as an "anti-dysenteric"—for its introduction into the rectum, without causing vomiting, is said to be just as efficacious as when taken into the stomach; and that it has been found to be most beneficial when tolerated. This tolerance is urged by some practitioners to the extent of causing the retention of very large doses, without inducing vomiting, even ℥j. doses being administered every two or three hours in some cases.

Although Ipecac is a remedy whose specific properties are determined to the mucous tissue, and therefore being appropriate in its application to Dysentery; and although it still has many advocates—yet there are elements to be derived from the same group of agents, to which it belongs, which are less objectionable in many respects, and which appear far more suitable and are more decidedly efficacious in the cure of this disease.

Now, among this group of remedies, which may be said to be rationally specific in this disease, we find also, Benzoin, Balsam Copaiba, Creosote, Turpentine and the like—all which are well known, rightly to merit a place in this class of remedial agents—each presenting sufficient testimony in its favor, to prove its applicability to the disease under consideration; and were all other evidences absent, of the ultimate nature of this disease—the fact that these remedies, whose operations were manifested in the production of certain phenomena, whether under health or disease, in the mucous tissues of the body, as found in other situations—the very remarkable results of their exhibition in the relief of Dysentery, might be taken as rational grounds for determining the situation and character of this affection. And thus might Therapeutics furnish the link and clue in a broken and obscure Pathology.

The tincture of *Benzoin*, or "*Tinctura Benzoini Compositæ*" of the Pharmacopœias has been recommended in doses of from f℥ss to f℥ij, as a valuable agent in some of the stages of Dysentery, and our limited experience of a single case would bear testimony thus far, to the validity of its claims to consideration. That case was one in which, after a very severe attack of Dysentery, in an extremely feeble constitution, it became compli-

cated with Diarrhœa, and the appropriate response to either of the indications, manifested in the mixed character of the symptoms, having failed to relieve, or having appeared even to aggravate this condition—the plan was adopted of treating the inflamed tissue, irrespective of the number and character of the discharges, and the effect was magical—the patient, a physician's wife, was convalescent very shortly after the change of treatment, and perfectly recovered. We are aware, that by citing a single case to establish any point, we are laying ourselves liable to the charge of driving a *post hoc, propter hoc* conclusion, but we give you that isolated fact at what it is worth, supported as it is by the commendation of the remedy, by others, based upon a more extended scale of experience; and would advise you to *bear that fact in mind*, to serve you, if ever a similar set of complex circumstances as above recounted, should demand its application, as the only alternative.

We quote from an article* in the London Lancet, the following paragraph, viz.—"When the functions of the colon are performed in a healthy manner, the fæces are figured, of a firm consistence, and of the well-known color. In Dysentery, or, as is sometimes called, colitis, this function is completely in abeyance; but whether this is produced by the relaxed state of, and consequent want of tone in, the muscular coat, or from the extreme irritability of the mucous membrane of the intestines, or of the character of its contents, or all combined, I cannot determine. The compound tincture of Benzoin I have found, when administered in this disease, particularly useful in restoring, and that in a very short time, this function of the colon. Whether it also acts beneficially by protecting and sheathing the ulcerated portions of the gut, or by its stimulating qualities induces, just as it does in chronic ulcers of the surface, the reparative processes to go on more rapidly, I am unable to determine. The tincture of Benzoin, I need scarcely say, consists of Benzoin, Styrax, Tolu, a small quantity of Aloes, and spirit. The dose generally given is from fifteen to twenty minims." The writer then reports a number of instances in which he had met with its striking beneficial effects.

The marked benefit, so long known to be derived from the

* On the Treatment of Chronic Dysentery. By R. W. Ellis, M.R.C.S.E., Bristol.

application of this balsam, to ulcers and wounds, may have some reference to its mode of operation, when applied to the sore surface of the mucous membrane, in this disease.

The influence of *Balsam Copaiba* over the mucous membrane lining the urethra is familiar to every tyro in medicine. According to Pereira, "it also acts as a stimulant, but in a less marked manner, to other mucous membranes; namely, the bronchial and gastro-intestinal membranes." He states further, that "the greater influence of Copaiba over the urethral than over other mucous membranes is by some explained thus:—Besides the influence which this receives in common with the other membranes of the same class, by the general circulation, it is exposed to the local action of Copaiba contained in the urine, as this fluid is expelled from the bladder. If this hypothesis were correct, the influence of Copaiba over the mucous lining of the bladder would be greater than that over the urethral membrane." Now, the fact is here plainly enough enunciated—that whilst this group of medicines are classified because of their peculiar property of spending their agency upon the mucous tissue wherever it exists, there are at the same time individuals of this group, which although exerting their influence upon this tissue everywhere, yet, having a more decided control over its condition in certain parts—owing perhaps to the slight modification of structure in those special localities, dependent upon the variable office required of this component tissue to perform, as involved in the function of its own complex organ. And it is equally true, that some of the members of this class of agents are found to be of more restricted, while others are of more general, applicability:—i. e., that some, whilst they act on *all* mucous membranes more or less, act upon that tissue in a very decided manner, only as it exists in one or two situations—while others, operate in a marked degree in all or nearly all its distributions, as, for instance, is the case with Turpentine.

As regards Balsam Copaiba otherwise, than in its special application, Dr. Cullen spoke favorably of its use in hemorrhoids, about a century ago. He says, "I have learned from an empirical practitioner, that it gives relief in hemorrhoidal affections; and I have frequently employed it with success. For this purpose it is to be given, from 20 to 40 drops, properly mixed with

powdered sugar, once or twice a day." Since his time, it has been used, variously combined, with happy results, in other affections of the intestinal canal, as for instance, "in chronic inflammation of the mucous membrane of the bowels, especially of the colon and rectum." One of the properties of this medicine, as generally laid down in its history, and as is familiar to every practitioner, is that of acting somewhat upon the bowels as a purgative, or rather laxative. And there are to be obtained, by a perusal of the recorded history of practical medicine, glimpses of evidence scattered here and there, of the great value of this agent in the treatment, not only of the chronic, but of every stage of the disease now under consideration. In fact, the term *chronic*, is, for the most part, of arbitrary significance—some designating such cases thus, which are not relieved, in what they consider a reasonable length of time; while others, especially in reference to *this* disease, apply this qualification to such cases as those in which the symptoms are prolonged by persistent ulcerations in the mucous membrane of the intestine, which owed their existence to an attack of Dysentery.

Dr. LaRoche, in an essay on this subject, bears staunch testimony to the efficacy of Balsam Copaiba in this disease. As likewise does Dr. Meigs, of Philadelphia. This is used according to Eberle's formula, that is, in emulsion made with sugar and gum arabic, or dropped upon sugar. A friend of ours, who is an intelligent physician, informs us, that he has no other treatment for Dysentery than the Balsam Copaiba; and that his success with this agent leaves no room for a desire to improve his treatment.

Such is the written, as well as the un-recorded testimony in behalf of this measure; and although we are not able to bespeak its adoption, from our own experience, yet, we must say, upon the testimony of others, and considering the acknowledged attributes of the remedy in relation to our conception of its applicability to the peculiar requirements of the diseased condition, organ, and tissue involved, *we would heartily endorse it, as a mode of treatment, never to be lost sight of, with reference to Dysentery.*

Creosote has recently gained much advocacy in the treatment of Dysentery. It was first used by Dr. Wilmot, as a remedy in this disease, in its local application by enema. Thus, it is re-

corded in Ranking's Abstract for 1846, that—"In a severe form of Dysentery which occurred near Tunbridge Wells, and in which all methods of treatment appeared unsuccessful, the mortality being as high as 25 per cent., Dr. Wilmot thought of trying Creosote enemata in the strength of ℥j. to ℥xij. of Starch. This remedy produced a speedy amelioration of the disease. It will be perceived, that this agent must have acted, under these circumstances, for the most part, by its immediate application to the diseased tissue. More recently, valuable results have been obtained nearer home, and principally in the West, from the internal or *per orem* administration of this remedy.

In our Lecture on the Pathology of Dysentery, delivered in November, you will recollect, that we had occasion to quote from an article entitled "Creosote in Dysentery," by Dr. Wm. H. McMath, which furnished decided proof of the value of that agent, in the treatment of this disease. We have just had the good fortune to meet with another very excellent contribution to the New Orleans Medical and Surgical Journal—"An Essay on the Ætiology, Pathology, and Treatment of Epidemic Dysentery,"* which adds a volume of evidence in favor of the great consideration to which this agent is entitled, as a remedy for this disease. The author, after dwelling upon the Pathology, &c., of the disease, in which we are gratified to find, that some of his views are in accordance with our own—viz., in this, that "A Dysentery having its origin from the general condition of the atmosphere differs from the intermitting and remitting fever only in the intestinal affection, and requires a similar treatment"—then makes the following record of his practice, and that of others, upon the same plan—viz: "I have usually opened the treatment by administering some mild purgative, and a favorite one with me has been a combination of Hydrarg. Cum Creta and Pulvis Rhei; assisted, if necessary, with the Syrup of Rhubarb. After the action of which, I prescribe the following mixture:

℞.—Creosote, gtt. x.; Acetic Acid, gtt. xx.; Sulphate of Morphine, gr. ij.; Oil of Sassafras, gtt. iv.; Distilled Water, ℥j.; in

* By Joseph B. Payne, M. D., of Magnolia, Arkansas.

teaspoonful doses every three hours, until the discharges are checked, and the bowels quieted.*

If there was any visible remission in the febrile symptoms, I usually anticipate that period with the administration of Quinine. Such is the treatment I have followed, in passing through two epidemics, and success has crowned it in nearly every effort. I could enumerate case after case where this course has been followed, and success the result. I have seen and assisted in treating in all, more than two hundred cases of Dysentery. In the October number of the *Nashville Journal of Medicine and Surgery*, (page 306,) there is a short article by J. W. Brown, on the use of Creosote in Dysentery. He says, "Drs. McMath and Gilder, of Louisville, Arkansas, tell me they have treated as many as three hundred cases, and in all proving perfectly satisfactory, under the use of Creosote." Their prescription, as is given by Dr. Brown, is the same as I have given it, except the oil of Sassafras, which is an addition of my own, merely to cover the disagreeable smell and taste of the Creosote, which it effectually does. "Now, if there is any honor due to the builder of this recipe, and its use advised in the treatment of Dysentery (which there undoubtedly is), that honor is due to Professor A. P. Merrill, of the Memphis Medical College. I saw him use it both in Dysentery and Diarrhœa, with the happiest effects. When I returned home, I informed my preceptor, Dr. Gilder,

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* As to "*checking the discharges*" with an opiate, we think the Doctor is in error; and we would here beg leave to object to the Morphine, as an ingredient in the Creosote mixture—as we conscientiously believe the indiscriminate and unconditional routine of administering Morphine every three hours, to be detrimental—a drawback to the plan of treatment—and that the Creosote in these cases manifests its curative powers, *in spite of the hindrance.* Mr. Headland's opinion, as regards certain effects of Opium, is the following:—He says, "Opium is a diaphoretic; but it diminishes all the other secretions, and most especially that of the bowels. It is certain that there are other narcotics and sedatives which are able to relieve pain, but which neither cause constipation, nor produce cerebral congestion." And again, "Opium is a general paralizer to muscular fibre, both of the voluntary and involuntary kind, but particularly of the latter. And the only reasonable attempt that can be made to explain the action of Opium in producing *constipation*, is by a reference to this its paralyzing influence on the coat of the bowel, taken in conjunction with the torpid condition of the general system, and suspension of the animal functions, produced by the secondary action of this narcotic on the nervous forces."

of the use of Creosote in Dysentery, and we both passed through the epidemic of 1855, as above-mentioned. Drs. McMath and Gilder have since used it with unequalled success."

Now, as to the therapeutic properties of this agent—according to Mr. Headland—"Creosote stands, as a medicine, between Hydrocyanic Acid and Turpentine. It has a double action; being anodyne, like the former; and a *mucous stimulant*, like the latter." Also, that "Creosote is a sedative, and cannot be well given in such large doses as to act upon distant parts." As such a practice would be attended with danger.

It will be perceived from the foregoing, that the treatment of Dysentery with this element, from among that class of remedies which exert an influence upon the mucous tissue—constitutes it an "appropriate treatment"—the importance of which is sufficiently established, and it is amply commended to you as such, by the recorded results of its wonderful operation. Although, from our want of practical experience with the remedy, we can furnish no additional support, from our own observation upon this subject; yet, we would have you ever to be mindful of the tenor of the commanding testimonials, in relation to the efficacy of Creosote in the treatment of Dysentery.

Now, with reference to the *modus operandi* of this class of agents, Mr. Headland remarks—that "Certain stimulant eliminatives are employed for the purpose of checking mucous fluxes, and so far *simulate* the action of true astringent medicines. Thus we administer, with more or less advantage, Aromatics in Diarrhœa; Cubebs,* Copaiba, and Turpentine in Gonorrhœa; and Balsam of Peru, and other Oleo-resins in Catarrhal affections. *These medicines may act upon and pass through the glands of the several mucous surfaces which they affect; while so doing, they may stimulate the healthy function and secretion of the glands, and cause it to displace the morbid one.* Dr. Williams thinks that they first cause dilatation of the vessels of a gland, and that this is followed by contraction. There is no apparent reason why the latter effect should succeed the former. But supposing contraction to take place in this way, then these medicines would be true as-

* We see that Dr. Stokes mentions *Cubebs*, as being a good addition to preparations of Balsam Copaiba, when used in Dysentery.

tringents. *But it cannot be so, for they do not diminish any of the natural secretions, but, on the contrary, increase them.* Turpentine, Cubebs, and Copaiba, are diuretics, and it is possible that while passing out in the urine they may simply *stimulate the mucous surface of the inflamed urethra, and excite it to a healthy action.*" And in speaking of eliminatives again, he further remarks, that "it is laid down as a rule, *that they act by themselves passing out of the blood through the glands, and that while so doing they excite them to the performance of their natural function.*"* And as regards their ultimate, special influence over the tissue with which they come in intimate relation, whether by being applied to its surface, or by being eliminated through it—it may, for convenience, be reduced to the interpretation which attributes it to an *alterative* effect; for beyond this, any speculation possessed of plausibility, will subserve the purposes of explanation:—that is, "Alterative, because the manifestations of vital action are somewhat different after its use from what they were before."† Then we would say, that *this class of remedies exhibit their beneficial effects by inducing a healthy change in the condition of that tissue, (when under diseased action,) over which, their influence is known to have control.*

And now, gentlemen, we rest assured that we are not taking too much for granted, when we express the confidence we feel, that ere this, your minds are fully persuaded of the truth of the proposition laid down to you as the basis of the investigations just made—viz., that the rational, the successful, and therefore *the appropriate treatment of Dysentery,* is unquestionably to be derived from that class of remedies, which are known to expend their activity upon that character of tissue, which is involved in inflammation, to constitute the intestinal affection embraced in this disease. And we esteem ourselves most fortunate in being enabled to adduce such a weight of testimony (which we were not aware of until instituting our researches,) to maintain the stability of our position, as have been derived from the experience of others, with so many of the prominent elements of the Materia Medica, constituting this class of remedies. It but remains for us, now, to supply you with our own humble testi-

* All these italics are our own. †Headland.

mony, in a farther substantiation of this position, with regard to another member of this class—the only one in fact with which we have a practical acquaintance in this application—the remedy, which we prefer to all others, as the safest, the best, and most efficient in its operation upon the affections of the mucous tissue in general; and which, besides being of the most general applicability in the affections of this tissue—is pre-eminently to be chosen as the agent for the treatment of Dysentery. This remedy is TURPENTINE!

We have dwelt to sufficient extent upon the therapeutic action of this class of agents, with an occasional reference, by way of example, to *this* one, to render it unnecessary to detain you with a repetition of those considerations. The Turpentine treatment of Dysentery has long been in use, to some extent, popularly, as well as with the profession; but always so complicated and obscured by other and antagonistic elements of treatment, as to have its benefits lost sight of and very soon, perhaps, to fall into disrepute in each particular case. And thus, no fixed opinion seems ever to have been entertained as to its efficiency and mode of action, and no lasting confidence has been established in its reliability as a form of treatment, until comparatively recently.

Some years ago, Dr. John Long, of Pleasantville, Kentucky, made the following statement in the St. Louis Medical and Surgical Journal, viz.—"For more than twelve months past, I have been in the habit of using Turpentine in the treatment of Dysentery, as it has occurred in this section of country, and find it to be a most valuable remedy in this often formidable disease..... Dose, ten drops, for an adult, every eight hours; with mucilaginous drinks and farinaceous diet. I was first induced to resort to Turpentine in the treatment of Dysentery, at the suggestion of Dr. Wood, of Philadelphia, who recommends it in Typhoid fever. During the past summer, I treated thirty cases according to the above method, twenty-nine of which recovered and one died; the latter resided fifteen miles off, and I did not see him but once." Some years ago, also, Dr. Wm. C. Brandon, of Hermitage, Georgia, through the pages of the Southern Medical and Surgical Journal, advocated the use of Turpentine, combined with Castor Oil, as a treatment for Dysentery. He says,

"My usual prescription was 1 ounce of Castor Oil with from 1 to 2 drachms of Oil of Turpentine, for an adult; diminished in proportion to the age of younger subjects. Often this dose had to be repeated, sometimes twice, before a fecal dejection could be procured. The Turpentine was left out in some instances, and my opinion is, with disadvantage to the patient. I used no saline cathartics, for in every instance where they had been used prior to my visit to the patient, I believe they had acted injuriously, especially where the stomach and small bowels were implicated to any great extent."*

And this brings us to consider the *Turpentine Treatment*, combined with *Castor Oil:* as thus united it acts upon the inflamed mucous membrane, and at the same time relieves and prevents any accumulation in the fæcal reservoir, the large intestine, which is the seat of this local element of the disease. And this is the treatment, of whose *adoption* and *amendment* we spoke, in our introductory remarks, when considering the "Nature and Pathology of Dysentery." And, now, we may here recall to your minds with advantage, the THIRD *condition*, existing in the nature and circumstances of this disease, with its dependent *indication*, viz.—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

* This is a remarkable coincidence of impressions—as regards the action of salts in this disease, with our views given while considering that plan of treatment; and also has some reference to a condition in its pathology, as heretofore suggested by us—especially, as we do not recollect to have had our attention called to this article until now.

would greatly enhance the *difficulty*—therefore, PREVENT CONSTIPATION.

Thus, it will be perceived, that the demands of the intestinal affection are comprised in the SECOND and THIRD *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 see how far these indications have been fulfilled in the following history of our experience as to this disease, with our peculiar form of treatment.

At the time we commenced the practice of medicine—10 years ago—the few sporadic cases of Dysentery which occurred from time to time, were treated orthodoxly, or in accordance with the most approved modes, prescribed by the text-book authors of the day—many of which cases (a large proportion for the few that occurred at that time), went their way, *secundum artem;* until Dysentery became an opprobrium to our skill—an incubus upon our peace. A year or two afterwards, when the disease began to appear epidemically, it became necessary to inquire into the respective value of the various suggestions, as regards its treatment, which emanated from different sources. If we mistake not, it was the London Lancet which first directed our attention to the Castor Oil and Turpentine method. About that time, we recollect to have been attending a case—an old lady, about 60 years of age—the worst case we ever saw, to recover. We had been called to her, two weeks after the inception of her

attack, which she said came on after prolonged constipation, and found her in that state, which the complication of age, an apparently feeble constitution, and the unabated violence of this disease, was well calculated to place her. She was on Blackberry cordial and Laudanum. The tormina and tenesmus were exceedingly violent, the stools very frequent, imperative, irresistible, and of a purulent character. Altogether, "passing away"—as we thought—was impressed visibly, upon every feature of this case. . . . "Why hadn't she died?"—thought we, as enormous quantities of *opium* and *astringents* failed to make any impression on her disease.——"Why doesn't she die?"—was the inquiry presented to our minds, when the slightest quantity of *salts* purged her almost to death, without abating, perceptibly, the affection of the large intestine.——"Why *can't* she die?"—was the pitying interrogation, when she continued to vomit small doses of the simple *Castor Oil and Turpentine*, without any relief to her excruciating sufferings. It then, first occurred to us, to saponify the Oil with Soda; to mix in the Turpentine; to suspend these in an emulsion of Gum Arabic and Sugar; and to add some Sedative or Anodyne, (which did not contain opium); as well as some Aromatic, to cause it to be retained by the irritable stomach. The following Recipe was the result—viz:

℞. Castor Oil, ... ℥ij.
Bi-Carb. Soda, ... ℥j.
Spts. Turpentine, ... ℥ss.
Powdered Gum Arabic, . . . ℥j.
Loaf Sugar, ... ℥j.
Compound Spts. Lavender, . . ℥j.
Camphor Water, q. s. to make 8 oz emulsion.*

Flavor with oil of Peppermint or Lemon.

Of this, she took 1 tea-spoonful every two hours, and the dose was gradually increased to 1 table-spoonful, as her stomach was

* Some of the ingredients in the above recipe may be altered, occasionally, with advantage,—for instance, Sweet oil may be sometimes substituted for the Castor oil; and the proportion of Turpentine may be varied according to circumstances. The Spirit or the Oil of Turpentine may be used indiscriminately.

About the time we commenced using this recipe for Dysentery, we found that the same formula, with the Castor oil left out, was an excellent mode of administering Turpentine in Typhoid fever, and have used it ever since.

able to bear it; for, after making an effort to retain the first dose, the irritability of her stomach seemed rapidly to subside. And *very soon*—being confident of the opposite result—we were astonished to see the marked improvement in the condition of the patient—who, upon this treatment, steadily advanced to recovery—for verily, "her time had not yet come!"

This Recipe, Gentlemen, has constituted the basis of our internal treatment of the local affection of Dysentery, ever since—and we have never since found cause to set aside that basis—as it has never yet, forfeited the confidence, thus engendered in it.

We would call your attention to some of the principal elements in this formula, and their probable effects under these circumstances, to determine how far they rationally fulfill the two indications under consideration.

Now, it will be recollected that, in a former Lecture, we endeavored to show, that there were FOUR elements or *conditions*, making up the sum of that form of disease which is termed Dysentery, and that, from these, necessarily proceeded the FOUR consequent *indications* of treatment.

FIRST.—The existence of *Fever*, dependent upon a *cerebro-spinal condition*—which was probably the origin of the Dysentery—demanding the PREVENTION OF THAT FEVER. Consequently, on a former occasion, we dwelt to some length, upon the great importance—yea, the indispensableness, of giving QUININE, as the *appropriate* remedy for answering this *first indication*, which, together with *revulsives*, *constitutes the treatment of the cerebro-spinal element of this disease.*

SECOND.—There being *disease of a mucous membrane*—REQUIRING ITS OWN PECULIAR TREATMENT, the action of TURPENTINE was sufficiently considered, as an *appropriate* agent, for supplying this *second indication*, and need not be, here, reverted to.

THIRD.—There is *Constipation* existing and having a tendency to persist—being an element of the disease and an obstacle in the way of its relief, (because the retained, inspissated contents of the canal, constantly irritate the sore surface of the interior lining of that canal, over which it *must* pass)—therefore, the *third indication* was, to RELIEVE AND PREVENT CONSTIPATION.

Now, let us examine into the *appropriateness* of some of the

other elements in the formula which we have given you, and which are combined with the Turpentine, for the fulfillment of this *third* indication.

Castor Oil, it is generally accorded, acts principally by *lubrication*—i. e., by anointing the interior surface of the intestinal canal and allowing substances to pass the more easily over it. It is also admitted, that it acts as a mild stimulus to the intestinal mucous membrane, inducing mucous stools—and for this reason, it is thought principally to act upon the large intestine, as this is the characteristic excretion from this portion of the canal.

The effect of the *Soda*, which is here combined with the Oil, would probably be, first, as a solvent of the fæcal mass, and if given in large doses, it acts as a laxative. So, may it be perceived, that the two combined, would probably have the effect of *overcoming the constipation* by their laxative effect, in an inoffensive manner—assisted, if necessary, by exciting the biliary secretion with the preparation of *Mercury*, (viz., Blue Mass and Chalk—1 part of the former to three of the latter,) of which we have spoken, as the one we preferred to all others, when the obstinacy of the constipation, as well as other indications of suspended hepatic secretion, demanded its employment. These, together then, may be considered the *appropriate* treatment for the relief of this *condition*, in answer to the THIRD *indication.*

Some of the secondary effects of the *Soda* may be considered of much benefit in this disease. For instance, in connection with Turpentine it proves a most powerful *diuretic*, and perhaps advantageously, as it is known that in all fevers, the secretion of this great emunctory is more or less suspended. And if the opinion be correct, which has long been entertained, that in all fevers, there is the generation or formation of zymotic elements in the system, from the more rapid disintegration of the tissues owing to the consequent over-wrought condition of the whole organism in that state—the effect of these two powerful diuretics, as combined in the formula, should serve the valuable purpose of their elimination from the blood, by the urine.

And further: May there not be some advantage in the *alkaline* quality of this agent, which may tend to counteract that state of the fluids of the body, which is favorable for the development and maintenance of that condition, in an important

portion of the organism, from which results the manifestations of this disease? This opinion does not seem so "far-fetched," when we are able to refer you to an interesting article, in the Dublin Journal of 1848, with the very pertinent caption of "*Alkaline Treatment of Dysentery*"—which is too long to quote entire, but where the author* says in relation to one of his cases there reported, "The feature of most importance in this case was the almost magical effect of the alkali in allaying the tormina, tenesmus, and purging, the tincture of Opium appearing to exert no influence whatever over the disease till combined with the liquor Potassæ; the patient remarking, when I visited him in the evening, that the last medicine produced a feeling of ease and rest from pain quite cheering to him." The writer had administered 10 minims of the liquor Potassæ every second hour, and applied Turpentine to the abdomen. He also mentions *Soda* as one of the alkalies used.

In several cases, wherein the simple Oil and Turpentine were administered, we have to state, that we did not see such very remarkable results manifested, or so promptly, as from the exhibition of the Emulsion. One of these—*a very bad case*—having been treated by a friend, in the former manner, (when, during his sickness or absence, the case fell into our hands,) was signally benefited by the change to the Emulsion, and pretty soon recovered.

The *Lavender* is used here as an anodyne or sedative, devoid of any constipating quality—yet, having amply sufficient power to allay, in a remarkable degree, the nervous irritability and agonizing pangs, consequent upon this torturing disease, by its *anodyne* or *sedative* influence without a *narcotic* effect. We are aware that this medicine is pretty generally disregarded, as of no force, and that it has been consigned to a place among that class of medicinal agents, contemptuously designated "Old Women's Remedies;" but it is our opinion, that this class of our race, are often the venerable conservators of important, though obsolete, medical ideas, as well as valuable, though discarded, medicinal agents—and of such, we consider the one in question. There is in reason no foundation for an objection to this assertion, on the score of "impossibility," in reference to its activity—as the

* D. Kelly, L. A. Mullingar.

potent narcotic itself, is but the product of a plant, and that, a comparatively delicate and succulent one; and where is the sense of denying to *this* plant, the credit of its own powerful virtues?—We do not pretend to say, that their effects agree in kind, but we have long been of the opinion, that the importance of this agent, has been very much overlooked. It has been long in use for "nervous irritability," "palpitation," "hysteria," &c.—and with good reason. We contend, that it might have served a valuable purpose, in a more extended application, and with more decided evidences of its power:—as, for instance, for the purpose of diminishing the irritability of the nerves, consequent upon the effect of other causes and in other localities of irritation. For we *know*, that under the operation of such causes, its continued use has, under our observation, been attended with remarkable results, which have led us to indulge in the projection of an hypothesis, in relation to its therapeutic action, as compared with that of opium. It is this, that while opium seems to act upon the central portions of the nervous system, as well as the peripheral portions, but more especially upon the cerebral mass, inducing a suspension of the functions of this organ, in somnolence, coma, &c.—this other plant, may exhibit its therapeutic properties, by expending its obtunding influence upon the *nerves*, and, perhaps, the spinal cord, (their more immediate termination,) without affecting the brain: or, perhaps its influence is of a totally different character, and may not be manifested in similar results.

This is but a theory, concocted for our own satisfaction, in explanation of the valuable facts, connected with the exhibition of this remedy—and whatever be their philosophy, we deem the facts have been sufficiently evident to be worthy of remark.

The tranquilizing effect, which has been generally accorded to this vegetable principle, in ordinary doses, is but a moiety of the almost paralyzing sedation it is capable of inducing, when frequently repeated, or administered in sufficiently large doses. That property would seem to be almost identical with that of Valerian, and is displayed apparently upon the same portions of the nervous system. The tranquilizing power of the latter agent, is plainly to be recognized, in its marked control over the *subsultus tendinum* (if not extreme), of Typhoid fever.

Really, many practitioners seem to have a proclivity for reducing the practice of medicine to a very simple process—viz., the application of a very limited number of medicinal agents—by selecting one (the most potent, perhaps,) from each class of remedies, and for convenience, striving to force its application, under all circumstances, when the demands of all of these circumstances, are alone able to be fully supplied from a whole class of therapeutic agents—each agent, probably, being adapted, from the peculiarity of its properties, to meet one or more of the varying phases or stages of pathological condition, which may occur in any organ or system—all which, go to make up the manifestations of disease, occurring in any particular organ or set of organs, and, perhaps, requiring the employment of the whole of that class of medicines, which is known appropriately to belong to that organ or system.

We might adduce numerous instances of the most unmistakable and powerful effects, attendant upon the administration of the *Lavender*, as forming an ingredient in the formula, above given you, but one or two will suffice for illustration. For example: Mrs. V., an intelligent lady, residing in this place, during a very severe attack of Dysentery, in which tormina and tenesmus were excessively harassing to her nervous system, after taking the Emulsion every three hours during one day, was entirely relieved of her dysenteric symptoms, but complained bitterly of the paralyzing effect of the "Laudanum Mixture," as she called it—saying that, she could not take any more, that she "could scarcely raise her hand," and "felt such a *calmness* and *lassitude*, that it was distressing" to her. It is a common thing for patients to call the Emulsion, the "Laudanum Mixture," or insist that they had been taking Laudanum, from the marked relief they experience; and yet, without being particularly disposed to sleep—their mental faculties being altogether unembarrassed. Again: for example—our estimable friend and your erudite Professor of Physiology, Dr. Miller, stated to us, that on one occasion he was required to administer to a case of violent cramp-colic, and there being no other medicine in reach, he gave the patient from two to three ounces of this Emulsion, and he was entirely relieved, with an astonishing promptness. This marked and sudden effect, we could attribute

to no other element than the Lavender, acting as a powerful anodyne, in such quantity. This is an effect pre-eminently called for in the nature of Dysentery, and most remarkably *appropriate* for its accomplishment here, is *this* agent, which is devoid of a constipating quality.

The *Gum Arabic* in the formula, would probably have, only an *emollient* or *soothing* effect upon the inflamed mucous surface, as it may be considered proven—by the experiments of Boussingault, and others, upon fowls, and of Dr. Wm. A. Hammond, Surgeon U. S. A., one of the Prize Essayists of the American Medical Association, in May, 1857—by experiment upon himself—that this gum, as well as others, are entirely indigestible—the whole quantity in weight, within a bare fraction of that ingested, being collectible from the alvine discharges.*

Now, Gentlemen, having considered the three first *indications*, and also having determined their appropriate requirements, as regards internal medication, we have but to refer to an important aid for the relief of the intestinal inflammation—viz., that of derivative measures.

We stated before, that if the inflammation existed anywhere in the course of the ascending, transverse, or descending colon, it might generally be detected by manual pressure along the extent of that organ; but if in the rectum, its situation was to be inferred, from the violence of the tenesmus, as well as (when used) the intolerance of all enemata. Then, the application of a blister, cupping, or leeches, over the tender part, when situated in the colon, will be found to be a valuable adjuvant in the treatment. We have generally used a small blister, the size of the hand, in the more violent cases. This may be kept open, with advantage, by poulticing, until the symptoms of the disease subside; or may be placed, alternately, over different portions of the canal, which are found, upon examination, to be affected. We would deprecate the barbarity of blistering the whole of the front surface of a man's body, in order to reach the small portion of surface corresponding to the extent of inflamed structure, in the interior. When the disease exists in the rectum, a blister applied to the sacrum, will very readily influence it, on account of the anatomical position of that organ. We have thought that

* See Prize Essay, in Transactions of Amer. Med. Association, for 1857.

a blister to the sacrum proved the turning point, in an extreme case of this kind, where tenesmus was the prevailing symptom.

We would now notice briefly the requirements of the *Fourth condition*, and its consequent *indication* of treatment, viz:

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.

The vast importance of REST, or relief from the racking and consuming torture, which we sometimes witness in this disease, should be constantly kept in view, or the patient will often sink from exhaustion of the vital forces, through neglect in this important quarter. We once saw a patient treated on the saline plan, which failing to relieve him, he got no rest at night, and grew worse every day—until he was allowed some Morphine at night—when he slept and appeared much refreshed and revived the next morning. The Oil and Turpentine Emulsion was now substituted for the Salts, when he rapidly recovered.

A patient with Dysentery should, at all events, be secured his accustomed rest at night, by every possible means, that he may have the great advantage, so imperatively demanded, and so essential to his well-doing, here, of the compensation for the damage done during the day, by *sleep*—

"Tired nature's sweet restorer, balmy SLEEP."

And here is the only *appropriate* place, which opiates can occupy, in the treatment of Dysentery. With this object, we prefer the administration, by enema, of $\frac{1}{4}$ to $\frac{1}{2}$ gr. of sulph. Morphine, in from 1 to 2 ounces of cold water, (as the least irritating preparation,) every night at bed-time; which may be repeated, if necessary, until sleep is induced. It will be perceived that there is no danger of restoring the constipation, under these circumstances, so long as is kept up during the day, the unremitted application of the other element of the treatment, embraced in the exhibition of the Emulsion.

The patient's strength should also be supported by nourishment, such as beef essence, chicken soup, corn-meal gruel, etc.;

for, until the latter stages, generally, the stomach and small intestines are capable of performing their function of digestion. After an attack of Dysentery, it may be of importance to instruct the patient to select such articles of diet, as will be favorable for preventing constipation, and the consequent re-establishment of the disease. Ripe fruit, if in season, will prove often an agreeable, harmless and very efficient laxative. We remember the case of an old lady, about sixty, who, after a very severe and prolonged attack of Dysentery, and even before she had entirely recovered, regularly ate a cantelope every day, which she continued until the season was over for them—her physicians, who allowed her the indulgence, recognizing the fact, that the fruit could do no harm, as the upper portion of the canal, was not the part involved in this disease.

Now, Gentlemen, we have seen the full consummation of the FOUR *indications*, which we derived, from the study of this disease, in accordance with our plan. We will very briefly recapitulate the FOUR cardinal points of treatment, as if in connection with the management of any particular case.

1st. Give Quinine, in sufficient quantity, and often enough, to break up the paroxysmal character of the disease. Also apply sinapisms, or cupping, or a blister to the spine, according to the severity of the case, or the degree of spinal irritation present.

2nd. Commence immediately, and give the Emulsion, every hour, or every two, or three, or four hours, according to the severity of the symptoms; for the more intense the symptoms, the more often is it to be given, until they are relieved. If the stomach is delicate at first, commence with 1 tea-spoonful, and gradually increase it to 1 table-spoonful, the ordinary dose for an adult; but give the Emulsion in every case, whatever may *appear* to be the obstacle—and continue to give it, until the patient is quite well, diminishing the dose, or increasing the interval, as he recovers.

3rd. If the constipation has been of long standing, or is obstinate—probably, from want of action in the liver, as manifested by the yellow-furred tongue, tenderness on pressure over the right hypochondriac region, &c.—give from 10 to 20 grs. of the Blue Mass and Chalk, or moderate doses of Calomel or Blue Mass—though we prefer the former. Also, apply a blister,

when the case is of sufficient severity, over the diseased portion of the canal, to be kept open, or repeated, if necessary.

4th. If the patient does not sleep at night, give from a quarter to a half grain of Morphine, in cold water, by injection into the rectum, at bed-time every night, and repeat if necessary—also have regard to supporting his strength with nourishment.

Such is the treatment which we have practiced, in every degree of Dysentery, from the time of our first commencing the use of the Emulsion. And so anxious are we to do justice to a measure, in which we have such unbounded confidence, that we hope you will pardon us for introducing, here, some evidences of its successful application, which are partly derived from our own experience, and have partly come to our knowledge from its employment by others.

Should we endeavor to establish its value, by all the testimony we could furnish, it would be in effect, but the record of every case of Dysentery, which has occurred within that time, in our practice, as well as that of your Professor of Anatomy, our brother and associate, with the exception of but two, if our memory serves us, which did not terminate fortunately—and which probably owed their result to the existence of a more serious complication.

But where is the necessity of forcing this testimony from the result of our own experience, when all this evidence can be furnished from the practice of our professional friends, whom we have induced to adopt this mode of treatment, many of whom have been long in practice, and are occupying such positions as will command for their medical *dictum*, that confidence which admits of no incredulous gainsaying. Many, in this place, have adopted this plan; and in various portions of this, and the adjoining States, there are those, who have for several years used, and are still using this, as their only treatment for Dysentery. A friend in Alabama, who has an extensive practice, informed us recently, that since receiving our letter, recommending this plan, he has treated all his cases accordingly, and although he has passed through a severe epidemic of this disease, has not lost a single case.

Another, in this State, remarked to us, that the overseers on the plantations, within the range of his practice, thought it

necessary, often, only to send to him for a large quantity of the Emulsion, on the occurrence of several cases of Dysentery, on their places—thus, saving him the *trouble* of attending. From this, it may be judged to be a safe practice.

And again: we have it from the most reliable authority, that a druggist of one of the cities of Georgia, stated, that he had prepared and sold during an epidemic of Dysentery, sixteen gallons of the Oil and Turpentine Emulsion, according to this formula; and that in this region, it had been peddled about the country, as a secret remedy in this disease. And here, gentlemen, we would acknowledge, that it was as much the wish, to rescue this compound from so illegitimate a prostitution and foul perversion of its original design, as anything else, that suggested to our minds the propriety of making it more generally known—and to this end, has it claimed your attention.

It now remains for us, but to notice that condition into which Dysentery often runs, unless timely arrested, and to which we called your attention in the latter part of our Lecture on the Pathology of this disease—wherein, as we said, the irritation of the disease in the large intestine, having been reflected for so long a time, upon the upper portion of the *primæ viæ*, we see, in addition to the purulent or bloody evacuations, a continuous and wasting *Diarrhœa.* Higher up, the stomach becomes involved in some instances, and there are loss of appetite, nausea, and vomiting even of the blandest fluids—together with a red, dry tongue, quick and feeble pulse, entire prostration of strength, cold extremities and dullness of the mental faculties. And thus, the vital spark grows dim, flickers and goes out, unless again rekindled by its appropriate stimuli. The nervous system having been over-wrought, loses its excitability—becomes paralyzed. The mucous membrane of the large intestine, having been racked and bruised, remains a passive, purulent, secretory surface.

And further—that, in this entire metamorphosis, the characters of the original disease have disappeared. It is not Dysentery, *and requires a change of management.* It is not Typhoid Fever, as shown in its history, and as is manifested, often, by the sudden and almost miraculous recovery of cases, upon the application of its appropriate treatment.

We can best illustrate this condition and its character, by the brief report of the following case—with the facts concerned in the history of which, several of our professional friends, in this place, are perfectly familiar—viz:

One of our professional friends, on leaving the city, to be absent a few weeks, placed several patients in our hands, and among them, Philip—a spare-made mulatto boy, about 20 years old, the property of Mr. H——, stating, that this patient was in the last stage of Dysentery, and would not long trouble us, as he was *moribund.*

We found him—in complete prostration, with a quick, almost imperceptible pulse, red and dry tongue, cold and tremulous extremities, mental faculties very obtuse, and occasionally wandering and muttering; also, passing watery discharges, with some pus, involuntarily, and with his stomach rejecting every thing, apparently without effort.

This case had had the full *benefit* of the *Saline* treatment.

We prescribed—Brandy, to be repeated, until his stomach retained it, and then to be continued without limit. Also, whenever it was apparent that he had had a discharge from the bowels, he was to take, by enema, $\frac{1}{4}$ gr. Morphine in 1 oz. cold water; and *per orem*, 5 grs. Bismuth (sub-nitrate) in a spoonful of cold water. Besides, whenever his stomach could retain it—Beef essence and Rice gruel, freely.

Being now, called away and detained in attendance upon the wife of a particular friend, we heard nothing from Philip, until about ten days after our visit to him, when we wished to be satisfied of the result, and also thought courtesy to our professional brother required us to go and express to the boy's owners, our regret for their loss, &c. On reaching his room, we found it swept out, his bed made up, and a hat lying in the floor—unmistakable evidences, to us, of the reality of our inevitable convictions. We went to his mistress, stating, that we were sorry at not finding the patient where we left him, but really expected nothing else, &c. When, without appearing to appreciate what we were saying, or even hearing it, she interrupted us with the interrogation—"Doctor—have you seen Philip?"—Imagine our great astonishment, when she continued to say—"He was sitting on the steps, but a few minutes ago—I

suppose he has walked out."—And so he had, and continues to walk out and in, to this day.

And here, Gentlemen, you may take a precept, from the memorable injunction of the heroic Lawrence—"Don't give up the ship!"—So, never abandon the frail craft of humanity, though all the machinery of its proud organization, be o'er-done and disabled, with battling against the unequal violence of tempestuous disease!—Don't give up *this* ship—though left a wrecked and powerless victim of the storm's furious rage, drifting headlong toward the boundless ocean of Eternity! No—never give up the *wreck*—so long as there is any evidence, of a human life within it—for God may bless your efforts!

And now, Gentlemen, in conclusion, having labored to convince you of the fact, that there *is* an Appropriate Treatment of Dysentery—we hope that you will never be deceived—"by the occasional brilliancy of a few surprising cures, which dazzle the minds of men, and blind them to those innumerable instances of failure, which ought to teach them the madness of confiding in a practice founded upon no rational principle, and conducted upon no consistent plan."*

ARTICLE VIII.

A Case of Empyema, treated by Injections of Water into the Cavity of the Pleura. Reported by Sternes De Witt, M. D., of Baker county, Ga.

When I first saw the case, the patient, which was a girl, aged sixteen, had been sick for four weeks—was very feeble and much reduced in flesh: pulse quick and weak; had some fever; was very restless, could lay no other way than on her left side; breath very short and quick. According to the best information that I could draw from her parents, she was taken with a chill after being on the road on a journey five or six days. She had been confined to her bed for four weeks—had been laboring under febrile symptoms, and had cough, which grew worse; had

* Hamilton—History of Medicine.

spit some blood. She had felt considerable pain in her left side, which was in the wall of her chest, rather than deep-seated. After two days, she had in that locality considerable *swelling*, which, in two or three days, had increased to a remarkable extent, reaching as far as the sternum. On one side, and filling completely the cellular tissue, around to the spinal column on the other side. This, however, did not much alarm the parents. In the lapse of about four days more there had formed over the false ribs, an abscess about the size of the top of an ordinary coffee-cup, having the appearance of an enormous boil. This was the state of things when I first saw the patient.

On examination, I found that the upper swelling was very hard; and at about the third intercostal space the motion of the heart could be seen at a distance of several feet—the movement communicated to the chest, extending over a space of 3 or 4 square inches. My attention was next called to the tumor, lower down, which, as I have said, was on the false ribs. This felt hard, did not fluctuate, was very red, with little tumefaction around it, except in the upward direction; here I could hardly be satisfied that there was any connexion between the two, as the swelling was diffused from the axilla half way round the body in either direction, and nearly down to the false ribs, on which was situated the pointed and more determined tumefaction.

Being inexperienced, and having never seen a similar affection before, I told the parents I would see the case on the next day, having determined to operate on the lower swelling, as I had no doubt it contained pus; thinking that it could have no connexion with the difficulty above, and suspecting the upper swelling might, possibly, be an aneurism, of which I knew nothing by experience.

The abscess, which I had determined to open, had by this time got considerably softer and less inflamed. I made an incision about three-fourths of an inch long, down to the pus, which flowed freely for several minutes. In the meantime, I had noticed that the upper tumor had wonderfully abated, and the breathing had become easier. The matter was quite thin, and darker colored than ordinary pus; this continued to run from this opening until the swelling above was almost entirely gone. I inquired into the state of the patient's bowels, and found that

she had not had a passage for several days; I gave her a gentle cathartic, and directed a poultice, which had been used hot, to be applied cold.

I returned on the second day after; the matter had ceased to be discharged, and the swelling had increased above, almost as much as at first. On examining the lungs by auscultation, I found that the patient did not breathe at all in the left side, and that the other lung was laboring under great compression—nearly as much so as when I first saw the case; pulse feeble, with some fever.

The next day, I saw the patient: the swelling had become as large as at first, and the breathing very difficult; the pulsation in the tumor as apparent as before. I immediately decided to let out the matter; which I did, by making an opening in the centre of this pulsating tumor, three-fourths of an inch long. The matter flowed in a large stream with such force as to jet from the body several inches; this time it did not discharge less than *two quarts* of matter in five minutes, and continued to discharge slowly for several days. In the meantime, I bandaged the body and placed a plaster over the opening to prevent the ingress of air, removing the same every day, with the patient reposing on her knees and breast, thereby aiding the discharge of matter, which was materially facilitated by the introduction of a small tube through the opening, to expedite the escape of the matter, which continued to discharge one or two ounces per day for several days, which discharge did not abate as rapidly as I had anticipated.

I prescribed Iron by hydrogen, three grains, three times per day. The patient improved, grew stronger, ate heartily, but still the discharge did not abate; the lung did not expand on the left side, breathing confined entirely to the right side; left side seemed to lack its fullness, and the spine was flexed laterally, the concavity on the affected side. I now tried injection, first preparing two quarts of tepid spring water, and with Matson's patent injecting instrument, introduced two or three inches into the opening—threw the entire quantity of water prepared, into the chest, it escaping around the nozzle of the instrument, after the cavity was full; thus effectually washing out the part. I afterwards bandaged the body as tight as the

patient could tolerate it, applying an adhesive plaster to the opening, and permanently closing it. After this, loosening the bandage daily.

On this treatment, the lung began to expand, which continued until the function of the lung was entirely restored. The opening cicatrized, and the patient was discharged, apparently well.

Typhoid Fever: The Thoracic Form. Its Treatment. By Dr. Behier, Physician to the Hospital Beaujon and Adjunct Professor to the Faculty of Médecine, Paris. Translated for the Southern Med. and Surg. Journal, by J. J. West, M. D., Demonstrator of Anatomy in Savannah Medical College.

The assemblage of symptoms which, in the course of certain Typhoid fevers, are manifested on the part of the respiratory apparatus, known as predominant phenomena, constitutes, by common consent, one of the most serious forms of these affections. Observed separately in each patient, this form can show itself under an appearance more or less distinct, and thus evince, not an *epidemic*, as it has been too often called by an abuse of the word, but a peculiar physical constitution. If it is desired to study attentively the circumstances in which these sorts of constitution are developed, it would be easy to demonstrate, I believe, that in the larger number of cases these pathological manifestations, thus attributed to a certain number of individuals, ought to be classed among constitutions influenced by season, upon which the older physicians insisted so justly, and the study of which has been perhaps too much neglected in later times and even at present.

But it is not with this part of the question that I wish to occupy myself here; the part upon which I propose to insist, relates to the thoracic form of continued fevers, and is more immediately practical. I desire to call attention to a mode of treatment which has yielded the most satisfactory results in the cases in which I have put it in use, and which has equally well succeeded in the hands of another hospital physician, my friend, Dr. H. Bourdon, to whom I had mentioned it. It is the application, in great numbers, of *dry-cups* upon the thoracic parietes, and also, and especially, upon the inferior extremities. It was in reflecting upon the following observations that I was led to the trial of this means: experience has since demonstrated its efficacy.

The thoracic phenomena which may be observed in typhoid fever are of a peculiar nature, of which it is necessary to render an exact account. Exclusive of cases, very rare however, in which a phlegmasic complication, a true pneumonia unites itself to the primitive pathological element, the disorders that are manifested in the pulmonary organs, are nothing less than a congestion analogous to that which might occur at different parts of the surface. These wide surfaces, of a sombre red, not painful, presenting no augmentation of heat, which may be observed at diffused points of the skin in subjects attacked by typhoid fever, and which sometimes occupies the arm or fore-arm, sometimes the face, the nose or cheeks, can, it seems to me, explain the mechanism of pulmonary congestions which are found, but with a variable degree of intensity, in all the subjects attacked by this disease.

They offer, as cutaneous congestions, the passive character; even the *weight* plays a part in its development, to which the attention of pathologists has been called for a considerable time. These congestions answer, in effect, to that which has been designated at first under the name *hypostatic pneumonia*, a designation which Prof. Piorry has since modified into that of *pneumonia hypostatic*. At the present time, nothing more is seen in these states of the lung than a phlegmasia of the parenchyma, a veritable pneumonia. The diminution of sound observed on percussion, in almost the whole of the chest behind, and which is not enough to constitute a true dullness ("matilé"), the rudeness of the "bruit respiratoire," which is far from being a bronchial souffle, the more marked distinctness of the voice, which does not amount to broncophony, and the mucous or subcrepitant rales which persist without offering the true character of the crepitant, and without passing to the bronchial souffle; all these signs, I say, indicate plainly a certain augmentation of the density of the lung, but cannot suggest the idea of a true hepatization. The anatomical examination itself establishes clearly the order of lesion to which these signs correspond, and it would now be awkward to consider as a proof of a phlegmasia of the pulmonary parenchyma, the dark red colour of this tissue, even after observing that the lung does not contract upon the opening of the chest, as does the lung in a healthy state; that it is a little more friable, that it does not crepitate under pressure of the fingers, and that it sinks in a vessel of water, instead of swimming upon this liquid when a small part is subjected to this proof. Insufflation, in fact, renders to the lung thus modified, a part of its normal appearance, which is impossible in the truly inflamed lung, and shows clearly that if the lung is densified by the determination to, and stasis of, a sufficiently considerable quantity of blood, there is not in the substance of its tissue any

effusion of a plastic nature, the only anatomical character of a phlegmasia. Besides, in a case of simple congestion, a direct inspection of the incised surfaces permits the recognition of the different elements which compose the pulmonary parenchyma—elements which, in inflammation, are no longer perceptible, agglomerated and confused as they are by the plastic infiltration which determines the phlegmasia.

MM. Legendre and Bailly, in insisting upon these distinctions, have assuredly rendered a great service to the science.

The pulmonary lesions observed in typhoid fever, are then, the result of a simple congestion, of little intensity in some patients, very violent in others, either on account of individual disposition, or of a more general influence. This influence may even add another element, and in some patients, it is perceived that to the congested state mentioned, is added an affection of the bronchiæ, a kind of capillary bronchitis of which the finer rales, and the expectoration of puriform sputa, of almost nummular form, with dyspnœa as the most prominent traits. One of the patients that we have observed, and whose history we give further on, (obs. 6,) offered an example of this complication. When it exists, this catarrhal bronchitis, as it has been called, is a new cause of a more considerable congestion in the pulmonary tissue; it there exaggerates the already existing disposition.

It is when this congestion takes a considerable development, whether or not it be exaggerated by the bronchitic element I have indicated, that the signs of a pulmonary asphyxia appear—signs, the augmentation of which is rarely rapid, but ordinarily gradual. Among these signs should be mentioned the anxious aspect of the face, the bluish coloration of the cheeks and lips, dilatation of the alæ of the nose, more marked dyspnœa, which, however, hardly ever increases as far as a state of orthopnea; it is then that the rales are multiplied in the chest, and a danger which is immediate and often very difficult to remove, menaces the patient.

The therapeutic indication in such a case is, then, to free the lung of blood which flows to and rests there, and serves to render this organ too passive to expel the liquids which obstruct it, on account of the elasticity which it has lost and which is necessary to the integrity of its functions. Blood-letting, often practiced in like circumstances, removes from the pulmonary tissue a part of the venous blood which accumulates there, but it cannot, on one side, be pushed very far without inconvenience to the general condition of the patient, always under the influence of an adynamic tendency; and upon the other side, in drawing from the patient a part of his strength, these blood-lettings tend to augment the passive condition of the lung.

These considerations should tend to banish from practice, in such cases, the use of sanguineous abstractions—even the local. It has been sought again, to fulfil the indication by disengaging a part of the bronchiæ of their mucosities, by the use of emetics, at the same time that tonic preparations, especially those of cinchona, aid in sustaining the advantages obtained with the aid of the concussion produced by vomiting. This treatment is assuredly reasonable, but it ought to be limited. Struck with the insufficiency of these means, I have sought to aid them, and, in considering the mobility of cutaneous congestions in persons laboring under an attack of this disease, convinced, above all, of the congestive nature of the pulmonary disorders, I found myself forced to discover a means of disgorging the lung—a means not borrowed from a spoliative therapeutics, and only a simple means of displacement.

I at first thought of employing the Junod cup; but besides its never being procured with promptness in our hospitals, it has the inconvenience of easily producing syncopes, accidents which might be attended by the saddest consequences in the patients we have to treat. It was then that I attempted the application of *dry-cups*, placed in considerable numbers on the chest, and particularly upon the inferior extremities. I have gone so far as to apply on one patient from 60 to 80 of these cups, morning and evening. The evening application is necessary, for opposing the return of the congestion removed momentarily by the derivation already exercised in the morning; and this tenacity of *action* is not too much against a *disposition* equally tenacious. Under the influence of these cups may be observed very large ecchymoses, which are formed in the places where the cups had been placed. These ecchymoses persist during a time more or less long, but I have never seen them followed by any accident whatever, although upon some patients the number of cups has been more than 500 in ten days. Never have I seen gangrene, nor even suppuration, against the presence of which evils I have always prepared myself, especially in my first trials of this means, which was two years ago. I desired to wait some time, and to multiply experiments, before publishing the utility of this mode of treatment.

The following facts will serve as examples in confirmation of what I have advanced:

Observation I.—*Typhoid Fever, of the thoracic form, in a young woman; emetic; 120 dry-cups in three days. Cure rapid.*

Nickley (Sidonie), 20 years, a servant, unmarried, habitually well regulated, has never borne children, has never had any other disease than the measles. Actual affection commenced May 12th; its accession was slow; the patient had pain

in the head; strength diminished; at the commencement she had a slight diarrhœa and a little cough; difficulty of respiration during several days. She has had no treatment, and has not even remained in bed until her entrance into the hospital, the 20th May, 1855.

May 21st. 104 pulsations per minute, pulse small, tolerably hard; skin hot, face red, cheeks and lips bluish; eyes prominent, humid; extreme difficulty of respiration; sound of the chest normal; mucous and sonorous rales very abuhdant on both sides, especially at the base of the lung behind; tongue a little shining; loss of appetite; abdomen slightly enlarged; gargouillement in the right iliac fossa; no diarrhœa; some rose-colored lenticular spots disseminated upon the abdomen and lower part of the thorax; head heavy; great muscular debility. *Prescription:* 15 grs. pulv. ipecac; sinapisms upon the inferior extremities.

May 22nd. Has vomited well; two stools; 112 pulsations, small; extreme difficulty of respiration; sound of chest less normal, without real matité; expectoration of white mucus; some rales in whole extent of the chest; face and integument of the hands still violet; she breathes better in the almost sitting posture she has been made to assume. 15 grs. ipecac, 40 dry-cups upon the thorax.

May 23rd. Abundant vomiting of colorless mucous matter. Oppression has greatly diminished since the application of the cups; the skin is still of the same dark red color; headache less; abdomen soft; skin cool; has a little appetite; 110 pulsations, small and hard. 15 grs. ext. cinchona, 40 dry-cups.

May 24th. Sound of the chest perfect; still a few rales at the base behind; pulse small, sufficiently developed; skin cool; face less colored and less anxious; she regains her natural expression. 40 dry-cups. lichen two portions, 23 grs. ext. cinchona.

May 25th. From this time the patient does well; appetite has returned; the skin and mucous membranes lose their violet hue; the respiration is natural; abdomen soft; bowels quiet; no more headach; and the 3rd June the patient eats her full allowance.

This observation offers, at the same time, an example of the predominance of thoracic phenomena, and the rapid effect of dry-cups applied in great numbers. The thoracic form was so plainly the predominant element, that once this order of accidents was removed, convalescence was rapidly established.

Observation II.—*Typhoid Fever, with adynamic state—predominance of thoracic symptoms; 4 cups (scarified); 160 dry-cups; extract of cinchona; cure.*

Jetté (Francois), 28 years, brick-layer, enters hospital Oct. 16,

1855, "Salle Beaujon," No. 62: Says he had the same disease five years since; remained about two months in the Brick-layers ward, "hospital Beaujon;" has lived at Paris since he was 8 years of age. For the last fifteen days has kept his bed without calling a physician or doing anything for himself; has had severe diarrhœa—no epistaxis. This period had been preceded by a state of general debility and occasional giddiness, which, however, still permitted him to work.

Oct. 17th. 120 pulsations, pulse small; skin hot; violet color of the skin, especially of the face and extremities; lips violet; nares dusky; abdomen tympanitic, numerous lenticular rose-spots; diarrhœa considerable; tongue covered with a grayish coat, very thick; trembling of the tongue; difficulty of speech; no headache; cough frequent, without expectoration; in the whole extent of the chest, an abundant rale presenting a mixture of the sibilant and mucous rales; no absolute matité; sonorousness is only moderate in all the chest, posteriorly; want of sleep; agitated during the night. Ext. cinchona 7½ grains, 4 scarrified cups on the chest.

Oct. 18th. Restlessness during the night—104 pulsations; skin hot and dry; tongue trembling; abdomen tympanitic; gargouillement in the right iliac fossa; violet color of the integument; troubled respiration; conjunctiva injected; same state of the chest on auscultation and percussion. Julep, with ext. cinchona 30 grains; 30 dry-cups on the chest; bath in the ward; beef-tea twice.

Oct. 19th. The cups have considerably relieved him—they have left on the chest spots of deep red color, with no trace of vesication; tongue trembling, still covered with a thick coat, but not completely dry; nares dusky; diarrhœa abundant, involuntary; agitation, no sleep; the cough is less, rales a little less abundant. Julep, cinchona 10 dry cups.

Oct. 20th. 108 pulsations; skin cool; desires to eat; disseminated rales heard in the chest; cyanosis of the face is less intense. Julep cinchona, 10 dry-cups on the chest.

Oct. 21st. Does well; has slept during the night; wants to eat; tongue clean; thorax is sensibly relieved; rales rarer; less mucus. 30 dry cups on inferior extremities.

Oct. 22nd. Same state. 80 dry-cups on inferior extremities; soup four times.

Oct. 23rd. Color of the integument almost normal; abdomen soft, indolent; chest almost freed; diarrhœa still involuntary; has appetite. Soup four times.

Oct. 24th. Amelioration increasing; tongue clean; respiration normal in the whole extent of the chest; has become more sonorous; diarrhœa still involuntary; has appetite. Injections of starch and laudanum; soup four times.

Nov. 1st. Appetite strong; 80 pulsations, small; skin cool; sleeps well; tongue moist; still a little diarrhœa in bed; some cough, but without rales perceptible to the ear. The state of the intestines becomes gradually modified, and the patient quits the hospital about twelve days after, cured.

In this patient, as has been seen, the relief was prompt, especially at the moment when the cups were applied in great numbers (18th October).

The employment of this means has not, however, appeared to have any effect upon the intestinal phenomena, which continued many days after the favorable termination of the thoracic symptoms.

[The history of the four following cases, would occupy more space than is necessary to prove the success of this mode of treatment. I therefore abridge the account of the author, noting only those complications which might influence the practitioner in deciding on its employment, and perhaps prevent it, if he had not the experience of others to support him.—TRANSLATOR.]

OBSERVATION III.—*Typhoid Fever—"à forme Thoracique;" employment of dry-cups to the number of* 460. *Cure.*

Jan. 31st, 1857. Mary Poussot, domestic. The answers of the patient are short, announcing an intelligence, either naturally weak, or enfeebled by the disease; sick fifteen days; chills, pains in back and limbs, diarrhœa, want of appetite, great thirst; cough intense, without expectoration. These symptoms have existed from the commencement.

Feb. 1st. *Actual state*, decubitus dorsal; extreme debility; complete immobility—rising impossible, even to take medicines; face bloated; eyes dull and half closed; tongue dry, rough, of a dirty gray in the middle, bright red at the point, lanceolated; lips and gums sooty; upper teeth black; mouth bitter; tympanitic; gargouillements abundant; five or six stools a day; pulse 112, small, contracted, regular; skin hot; respiration painful; humid rales in whole extent of the chest; cough frequent and fatiguing; no expectoration; diminution of sonorousness, but not real matité; sensation of heat general; almost complete deafness; no headache; continual somnolence; tranquil delirium; very numerous spots on the abdomen and the whole of the chest. 22 grs. ipecac. in three doses, 60 dry-cups on the inferior extremities, 30 grs. ext. cinchona.

Feb. 2nd. A little better; is less oppressed; cough troublesome; less delirium; less somnolence; less diarrhœa; pulse 112. Rales about the same; face less bloated. Extract cinchona, 30 grs.; 80 cups on inferior extremities—40, morning and evening.

Injection of 12 gtt. laudanum, and 5 grs. musk; sweetened gum water.

The cups of yesterday have left large ecchymoses upon the thighs of the form of the glasses used.

Feb. 3rd. A little coma; sleep agitated; respiration easier; cough less fatiguing and loose; the rales have diminished notably; expectoration mucous, but not abundant; pulse 96; skin hot; some tinnitus aurium; giddiness. Same prescription; 80 cups in two applications; 18 grs. ipecac.

Feb. 4th. In about the same condition; rales "â grosses bulles," throughout the chest; pulse 92; skin less hot. Same prescription; 80 cups; ipecac.

Feb. 5th. The patient is sensibly better; pulse 84; skin less hot; deafness decreased; rales diminishing; oppression sensibly ameliorated; coma less; delirium hardly appreciable; 80 cups, beef-tea twice, soup twice. Same prescription.

Feb. 6th. Oppression hardly exists; general improvement; tongue about the same; pulse 80 to 84; skin without great heat; 80 cups. Same injection, same prescription.

Feb. 7th. Respiration free; few rales; no cough; no expectoration; general state satisfactory; pulse 72 to 80; intellectual state much better. Omit the cups, continue rest of prescription.

Feb. 8th, 9th and 10th. General improvement; continue prescription and diet.

Until the 19th, when she left the hospital, there was the same improvement, with the exception of pain in the right shoulder, on the 15th, which was speedily dissipated by the use of a small blister.

Observation IV. *Typhoid Fever; vomitives; application of 530 dry-cups on the inferior extremities.*

Feb. 19th, 1857. Elizabeth Pausser, aged 22 years, a domestic—has resided in Paris six months—was confined two months since; has never been perfectly well since, on account of too severe work.

Feb. 20th. *Actual state.*—Extreme prostration; complete immobility; gums are brown, covered with sordes to the teeth; tongue dry, brown in the centre, red at borders and point; mouth dry; deglutition easy; no nausea, no pain in the abdomen; four liquid stools, yellow, sometimes involuntary; urine scanty, difficult and painful to emit; complete inappetence; thirst great; sonorous rales throughout the chest; cough frequent; expectoration mucous and tolerably thick; dyspnœa; pulse 112, small; skin hot and dry; severe headache, eyes half closed; complete deafness; spots on the abdomen pretty numerous. Sweetened gum water, two glasses of seidlitz water in the morning, 15 grs. ext. cinchona in the evening; beef-tea 4 times.

Feb. 21st. Pulse 112; skin hot and dry; tongue very dirty; little diarrhœa; thoracic phenomena the same, without any more intensity. On account of the state of the tongue, tart. antimony gr. $\frac{2}{3}$, 15 grs. ext. cinchona, for the evening.

Feb. 22nd. Emetic acted three times; little diarrhœa; pulse 112, small, compressible; skin less hot. Same prescription, less of tart. antimony.

Feb. 23rd. Respiration much more embarrassed. On both sides, and at the summit of the chest sibilant rales are heard, mucous rales very abundant everywhere else; otherwise, same general state. 30 dry cups on inferior extremities, rest of prescription *ut supra.*

Feb. 24th. She says that the cups have given her great relief, and asks for them again; in fact, the chest dilates better, and respiration is less painful. The pulse is 116, comrpessible; skin hot; tongne more humid; epistaxis for the first time. 30 dry cups, ext. cinchona 15 grs., beef-tea 4 times.

Feb. 25th. A little delirium; pulse 112; sacral region red; state of chest nearly the same. 50 cups, injection of 5 grs. musk, ʒiss* laudanum.

Feb. 26th. Less oppression; the rales and dyspnœa are less marked; delirium more calm. 50 cups.

Feb. 27th to March 7th. 50 cups, 40, 40, 40, 30, 30, 30, 30, 30. Other treatment consisted of ipecac, cinchona, wine, beef-tea, etc., according to indication. On the 28th, she left the hospital perfectly cured.

Observation V. August 14th, 1857. Eliza Roger, aged 22 years—sick more than a month—miscarried ten days since, at six and a half months; the lochia flows still. Actual state, very much like that of Observation IV. 2 glasses seidlitz water, 100 dry cups (50 morning and evening), beef-tea and soup. The treatment of this case, up to the 21st, was that of the cases mentioned above, consisting of cinchona, laudanum, enemas, soups, etc.; 50 dry cups morning and evening, daily. The improvement of the patient was marked—cough lessening; rales diminishing; tongue becoming cleaner; sleep good; diarrhœa less; pulse less frequent. On the 21st, the cups were discontinued, diarrhœa became abundant, but the chest seemed to be doing well. Laudanum enema.

[Although the cups were no more used in this case, still the

* The original reads 6 grammes, equal to ʒiss of our measurement, evidently an error. From what I have seen of the practice of French physicians, I would hardly believe that the amount given was one-fourth of that quantity. They give opium in much smaller quantities than we do.—Translator.

disease having assumed a new phase, demanding a different course of treatment, and the treatment of this particular patient illustrating that of the French, generally, I will give the author's account in full; and as it was successful in this instance, it may be of practical benefit to some of the readers of the Journal. Tr.]

Aug. 22nd. The cough became again very painful; rales are heard anew throughout the chest; the sputa are bronchial with some filaments of brownish blood; sleep is impossible, on account of the frequency of stools. Gooseberry syrup; continue enema (laudanum gtt. xij.); beef-tea, 4 times.

Aug. 23rd. Diarrhœa still more frequent. Add to prescription a potion, with 4 gtt. laudanum.

Aug. 24th. At night, on the 22nd and 23rd, she had some vomiting, of which no mention was made at the visit of yesterday. Yesterday evening, the vomiting recommenced, accompanied by a liquid diarrhœa, very abundant, white, persisting; dejected aspect; eyes sunken, surrounded by a bluish circle; indifference to surrounding objects; immobility; visage wasted; speech feeble, slow—complains of suffocating; pulse 100, hardly perceptible; blue voluminous veins are seen upon the chest; skin cold; pulsations of the heart barely perceptible. It is impossible to know if the patient urinates, the stools being involuntary, may be mixed with urine. The potion of laudanum prescribed yesterday was vomited on the spot; in the evening, the interne of the ward, prescribed ice; gum julep ℥v, with rum ℥ij; diet.

Aug. 25th. She vomited but once during the day of the 24th, but in the evening, the vomiting recommenced and lasted all night. She has had but one stool, which is yellow; she appears a little better. Her pulse is a little increased in frequency (112); the skin has resumed its heat; face less pale, but the eyes are as much sunken. Same prescription.

Aug. 26th. Reaction is fully established; pulse 108; skin hot; face red; eyes sunk. Still some vomiting, but no diarrhœa. Urinated yesterday. Ice; beef-tea twice.

Aug. 27th. In the night, vomited considerable quantity of bile, in which there floated numerous white clots; pulse 108, small, dicrotic; skin hot; face red; eyes less sunken; extreme debility; three diarrhœal stools; tongue moist, lighty white; no headache; great thirst. 2 large enemas, with 12 gtt. laudanum in each; ice; soup twice.

Aug. 28th. Pulse 108; skin very hot; vomiting continues; diarrhœa. Continue enema potion with rum ℥iij; ice; diet.

Aug. 29th. She has again vomited this morning, a green liquid; tongue a little swollen, yellowish gray; pressure upon

the right iliac fossa determines pain; abundant diarrhœa; urinates easily; pulse 100, dicrotic; eyes less sunken, visage good. The patient says she does not suffer; aspect better. Continue the treatment.

Aug. 30th. She has vomited a little, but her visage has assumed its normal aspect; slept all night and without waking; mouth bad; diarrhœa; pulse 96, dicrotic. 2 large enemas with laudanum 12 gtt.; beef-tea 4 times.

Aug. 31st. Has not vomited since; tongue humid, hardly white; thirst; a little appetite; no diarrhœa; sleep good. Laudanum enema; half portion (hospital diet).

September 1st. No more vomiting; no stools for two days; aspect good; face rose color; eyes not sunken; pule 96, scarcely dicrotic; tongue humid; sleep good; ate with pleasure. Demi-portion.

Sept. 2nd. Continues better. One portion.

Sept. 5th. Doing very well; tongue rose-color, humid; appetite; little thirst; no diarrhœa; pulse 68; skin cool. 1 portion.

On the 7th, she ate some unripe grapes, followed by diarrhœa on the 8th: that evening vomited a little, also at night. Pulse 96; skin hot. 2 enemas, laudanum gtt. xij, in each.

Sept. 10th. This new indisposition was followed by no results. Left the hospital well.

Here again is seen the modification obtained by the use of the dry-cups, and the return of the epi-phenomena at the moment they were suspended; the intercurrent choleraic symptoms rendered a new employment of this means useless.

In the observation about to follow, the commencement of which did not pass under my eyes, I will call attention to the nature of the expectoration, which was at first composed of sputa of a yellowish color, thick, rounded, nummular, quite analogous to those observed towards the end of the measles, and which presented afterwards some sanguinolent striæ.

The generalization of the rales, their seat the summit, the lively heat of the skin, the small number and doubtful appearance of the spots—all in a woman, blonde, chlorotic—could give rise to doubts, at first sight, upon the diagnosis, and lead to the impression that we had to do with an acute phthisis. The intestinal phenomena, and the march of the disease, assisted us in avoiding that error.

Observation VI.—*Typhoid Fever, "à forme Abdominale in its début; thoracic phenomena towards the twenty-second day. 200 cups; ext. cinchona. Cure.*

Eliza Legarois, age 15 years, domestic; always of good health; not yet menstruated—has lived in Paris only one month. Two or three days after her arrival at Paris, she was taken with a

bad headache, which persisted, eblouissements, (to which she is subject); cough, with oppression; diarrhœa not abundant; complexion dull and white, hair light, mucous membranes pale, continued souffle in the vessels of the neck.

On her entrance, Sept. 23rd, about the eighth or tenth day of the disease, a typhoid fever "à forme abdominale," with symptoms not grave, was diagnosed.

During the first days of October, the cough augmented in frequency and intensity; she became more oppressed.

Oct. 11th. Besides the abdominal phenomena slightly marked, I found, in the chest, numerous rales, offering towards the two snmmits, characters of the sibilant, and towards the middle, as far as the base, a mucous stamp, especially on the right side. Apply 40 dry-cups on inferior extremities; sweetened gum water; ext. cinchona 7½ grs.

Condition of the patient Oct. 12th. Coughs as much as during the preceding days, but says she is less oppressed since the cups were applied, and expectorates more easily. The sputa resemble those of a bronchitis at the period of *coction*; they are yellowish, thick, rounded, much striated with brown blood, (proceeding from the fauces,) and in no way analogous to that of pneumonia: tongue tolerably humid, glutinous, wide at the points, yellowish-gray at base and middle; mouth bad; no appetite; considerable thirst; a little diarrhœa; two to five stools; gargouillement pretty abundant in right iliac fossa; no pain on pressure of the abdomen; no well-marked rose-spots; no sleep; pulse 96, skin a little hot. Percussion indicates nothing very abnormal in the chest, which, however, does not resound well; without real matité, especially on the right side. Auscultation reveals mucous and sonorous rales in all the chest—they are sibilant towards the two summits, and mucous at the base and middle parts, posteriorly, particularly on the right side. Ext. cinchona, grs. xxx.; pil. opium, gr. ⅔; coffee, f ʒiv.; 40 dry-cups.

Oct. 13th. Coughs as much—is also oppressed; does not sleep; same sputa, still sanguinolent, abundant. Same prescription.

Oct. 14th. Oppression a little less; rales still abundant, although less numerous; tongue cleaner; pulse less frequent (88), skin but little hot. 40 cups.

Oct. 15th. Still much oppressed; sonorous rales throughout the chest, intermixed with less of the mucus; little sleep, pulse at 88, skin less warm. 40 cups.

Oct. 16th. Says she is much better; she respires more easily; the rales have much diminished, and the sonorous rales are rarer; sonorous rale is better marked; cough less painful; expectoration easy; the sputa are less thick, less yellow, but little

striated; tongue moist, wide, whitish; no thirst; a little appetite; pulse 68, regular; skin cool. Omit the cups; two eggs, and a little bread; ext. cinchona 30 grs.; sweetened gum water for drink.

Oct. 17th. Pulse 48, regular; skin cool. It is with difficulty that one hears a few rales in the chest. No diarrhœa; expression much better and more gay: on the whole, she does well. Bordeaux wine, ℥iiiss., cinchona 30 grs., one portion.

Oct. 18th. Pulse 60; skin cool: does well. 19th. The patient feels well, has a good appetite, sleeps well; only she is feeble, and when she desires to rise and walk she falls—not that she has attacks of giddiness, but her legs bend under the weight of her body.

This condition still improves; the respiration to day (22nd October) is everywhere pure, without mixture of rales; no expectoration: the diarrhœa has disappeared; pulse from 60 to 64, it assumes a little consistence; appetite is excellent; debility and palor are the only symptoms which persist.

I could add to these facts, many others, which would only be a repetition. I hope those which precede will appear conclusive in favor of the means which I propose—which, I repeat, has given most satisfactory results to my friend, Dr. H. Bourdon, upon the patients observed by him at the "Hôpital Laribosière." I will insist upon the complete harmlessness of this mode of treatment; never have I observed any local disorder follow the application of dry cups, and never has this derivation, although very energetic, determined any trouble in the economy, probably because it is, so to say, gradually effected. This harmlessness is, then, one motive the more, why we should not hesitate before the employment of this means.

It has been remarked, also, in some of these observations, (obs. 2, 3, 4,) that somnolence, tranquil delirium and deafness, have seemed happily modified by the use of this means. I have seen, in some other cases, the application of dry-cups in great numbers, calm the tranquil delirium and dissipate promptly both somnolence and coma, notably, in a little patient of 15 years, observed in October, 1855, at the "Hôpital Beaujon." In these last cases, the cerebral phenomena were predominant, and nothing very well marked was determined on the side of the lungs. The utility of this powerful derivative in comatose forms of the disease, appears to me, more than probable; but I have not, so far, studied the fact in a sufficiently rigorous manner to form a precise opinion on the subject. As for the ataxic forms, with violent delirium, in three cases where I attempted to employ this method, it gave me no result, and the opiate preparations, in doses sufficiently strong, united with musk, appear to me to be much preferable.—[*Archives Générales.*

Report upon the Topography and Epidemic Diseases of the State of Georgia. By JOHN F. POSEY, M. D., of Savannah, Ga.

[Concluded from p. 114, Feb. No.]

DISEASES, &c.

The diseases of the eastern part of the first division or tertiary formation of Georgia are thus treated of by Dr. P. M. Kollock, of Savannah, beginning with the Sea Islands:—

"The inhabitants enjoy very great immunity from the diseases of the opposite main. And such as have few or no brackish ponds or lagoons, are more healthy than such as contain a greater number.

"In very wet seasons, the different forms of miasmatic and bilious fevers prevail to a considerable extent, but they are exempt from every species of malignant and fatal epidemics. I have never known cholera asphyxia to occur on any of the outer islands. In winter, sporadic cases of pneumonia are occasionally met with, together with ordinary catarrhal and pleuritic affections.

"The main opposite the Sea Islands is decidedly sickly, and infested by the various forms of miasmatic disease.

"In winter and spring, epidemic pneumonia, of typhoid type, is not unfrequent, particularly on the rivers and swamps. In summer and fall, the various forms of bilious fever, sometimes congestive, and occasionally exhibiting typhoid symptoms, prevail.

"Passing further inland to the region of sand-hills and long-leaf pines, the inhabitants enjoy a very large share of health, and when the possessors of the comforts of life, as regards shelter, food, and raiment, exhibit an *embonpoint*, a ruddiness of complexion, and contented, happy expression of countenance, seldom surpassed in any climate. As a general rule, they are strangers to epidemics of all kinds.

"In winter and spring, cases of pneumonia are met with, and in summer, particularly in seasons prolific of fruit, there may be dysentery; it is rare for severe cases of fever to occur in this section.

"The winter of 1852 was the coldest that has been known for many years in this district. Two snow storms occurred at Savannah, but very little rain. There was no great amount of disease—a few cases of pneumonia occurred in my own practice—and I observed a very strong tendency to the formation of whitlows, resulting from slight injuries to the hands.

"Towards August, cases of fever began to multiply in the city of Savannah and its vicinity, and between that period and the month of November, very few of the laboring population escaped.

"During the month of August, some cases of yellow fever, accompanied with blackish discharges from the stomach, were reported; the number increased as the season advanced. The greatest number occurred as the season advanced to the month of October, when it proved fatal in almost every instance."

The yellow fever was but little known until after the war of 1812. It was not until the winter of 1816 that foreign shipping began to resort to Savannah, and the next summer the harbor was crowded; no care was taken to time the arrivals to the healthy months, and the seamen were strangers entirely unacclimated.

In the month of August, the yellow fever first broke out. It was confined to the seamen, and continued until the shipping departed; there were not many cases. During the following year, 1818, there were few arrivals, and all had left port before the summer had fairly set in, and there was but little sickness.

In the year 1819 many ships arrived, bringing a great many strangers, totally unused to the climate and unacquainted with the diseases to which they were exposed. Early in the autumn, the yellow fever commenced its ravages, and in less than a month the whole number of passengers who had been brought by one ship had fallen victims; the disease continued until cold weather, and was confined entirely to strangers.

In the beginning of the year 1820, a great part of the city was burned down, and the population was consequently crowded into the narrow limits left by the fire. The ruins were for the most part left in a state of total neglect, and many of the uncovered sinks and vaults remained open, exposed to the weather until they were filled up by the sand washed into them by the rain, which was more than usually copious in the latter part of the season. The excavations made for the foundations of new buildings were highly offensive, particularly during the night.

In the latter part of the summer, the yellow fever began, and increased to a frightful extent, but its ravages were still mostly among the unacclimated, few natives or old residents dying. The disease continued until late in the winter.

In 1821 the yellow fever began as in the year before, and now attacked the natives and old residents, more of whom died than did the year before.

The citizens were now thoroughly alarmed; a board of health was organized, and a system of visitation of the yards and buildings was put in operation; a new scavenger arrangement was made, and the city was thoroughly cleansed, so that the Cathartes aurea and C. atratus, commonly known as Turkey buzzards, which were as tame as barnyard fowls, and the most effective scavengers before, became wild. The yellow fever also disappeared, and for five years was not seen. The dread of its visita-

tion seemed to have been forgotten, the members of the Board of Health soon became tired of their "useless" labors, and ceased to attend to their duties. An officer was appointed to inspect the lots, &c., but his visits soon became odious to those who most needed them, and the city became very exactly in the condition, as to cleanliness, that it was in before the beginning of the three years of fever. The Cathartes aur. and atr. returned, and in the early part of the summer of 1827 they were seen in the most populous part of the city fighting for offal in the street. Not long after this, the yellow fever made its appearance and carried off seven of the most prominent citizens, being all old residents, in rapid succession. This opened the eyes of the people to the necessity of a more constant attention to sanitary measures; the city was again thoroughly cleansed, the buzzards again took to the woods, and have never returned.

The yellow fever has not since been epidemic until the year 1854, when the city being crowded with Foreigners, mostly Irish laborers, it broke out again with such mortality as to produce general consternation; however, but few of the acclimated were severely attacked.

The epidemic spread more widely in the State than it ever had before.

In the autumn of 1834, the epidemic cholera commenced on some plantations twelve or fourteen miles above Savannah on the river, and gradually approached the city, where it continued for nearly two months, when it ceased its ravages very suddenly; negroes were the principal sufferers, and upon its appearance a few years afterwards, it was confined almost entirely to them.

Dr. O. P. Bealer, of Effingham County, in a communication to Dr. Kollock, in 1853, says: "The prevalent disease of the last year, 1852, was typhoid fever, in the majority of cases, the result of neglected bilious fever; it was remarkably fatal; the deaths in this county the last year numbered more that those of any one year, as far back as the oldest citizens can recollect, and they were principally from typhoid fever.

Dr. T. R. Dunham says, that "the prevailing diseases of Camden County in winter and spring, are typhoid pneumonia and influenza. These yield during the summer and fall to diarrhœa, remittent and intermittent fevers, accompanied with the most violent headaches, and great irritability of stomach."

Dr. T. S. Hopkins, of Waynesville, writing of the diseases of the low lands in Glynn and Camden Counties, in the neighborhood of the Great Buffalo Swamp (which section, he says, is healthy in very wet or very dry seasons,) in the year 1852, says: "The past season has been extremely wet, and I have only to report, for the spring months, a mild form of influenza, and for the fall, quotidian and tertian intermittents."

Dr. H. Briggs, of Troupville, speaking of Lowndes County, says: "The climate disease which manifests itself more or less, during some part of every year, is the remittent or intermittent malarial fever, usually of a mild form, but with occasional cases of malignant intermittent, congestive, alged, and other varieties of pernicious fever.

"Hooping-cough, mumps and varicella have repeatedly prevailed in all this region as epidemics.

"Scarlatina prevailed co-extensive with the limits of the county during the years 1838 and 1839. It has appeared twice since, in 1844 and 1855, but could scarcely be considered an epidemic, either of the two last times.

"Abscess, in the form of whitlow, furunculus, anthrax, and deep-seated abscess, has sometimes appeared as an epidemic, more especially during the summer and fall of 1854, continuing several months, the ordinary climate fever disappearing altogether during the time.

"Dysentery appeared as the prevailing disease in the autumn of 1843, from which time till the spring of 1853, there were only a few sporadic cases. It has prevailed more or less at all seasons, and in all parts of the county from that date up to the present. In some neighborhoods the accompanying fever is of typhoid type, in others most decidedly inflammatory.

"Rubeola made its appearance in June, 1856, for the first time since 1837. The disease was of a grave character, often attended with low form of fever, and dysenteric symptoms, often succeeded by a most obstinate diarrhœa, œdematous swellings of the lower limbs—a tendency to passive hemorrhages, and sometimes ulcerations and sloughing of the integument.

"Influenza, or grippe, often becomes epidemic. It seems to act as a predisposing cause of bronchitis, pneumonia, pleurisy and catarrhal ophthalmia. Sometimes a patient complains of violent pain in the head for a few hours without any signs of pneumonic inflammation, quickly followed by prostration, coma, difficult respiration from mucus accumulating in the bronchial tubes; death soon ensues.

"A continued fever prevailed in the western part of the county in the latter part of the year 1839, and first half of the succeeding year. Again in the southeastern part of the county, through all the winter and spring from November, 1846, to April or May, 1847. A malignant fever and highly contagious typhoid fever have prevailed in some section of the county more or less every year since 1850; a half dozen or more cases in one family or neighborhood, then appear somewhere else. The county has not been entirely clear of cases of that variety of fever, but very few months in all the last six years.

"In the spring and summer it very much resembles ordinary

remittent for a few days at first. In the colder part of the year it is usually without any regular remission, a straightout continued fever from the beginning.

"Puerperal fever is sometimes for a few months much more prevalent than at others; I do not, however, believe it has occurred as a true epidemic disease.

"The same is true as regards jaundice, uterine hemorrhage and many other non-febrile diseases.

"Dirt eaters and anæmic patients are always extant."

Dr. G. F. Cooper, of Houston County, in 1853, thus gives the prevalent diseases of that county, which may be taken as the sample of all the upper part of the first or tertiary division. "Rubeola, diarrhœa, dysentery, and idiopathic fevers," he says, "constitute the list of diseases which have been treated during the last year.

During the months of April and May, we had an extensive epidemic rubeola, so called, and in some parts of our county it was attended with a fearful mortality. This was especially the case where a typhoid type obtained. Many of the cases which came under our observation did not possess the usual characteristics of rubeola, and even those in which the eruption conformed nearest to the genuine form of the disease, desquamation did not follow. It appeared to me to be a blending, in many cases, of rubeola and roseola. The rubeolous eruption was evolved upon a roseolous base, the latter, I believe, appearing invariably first, followed by the papulous eruption of measles. The eruption usually appeared on the third or fourth day, and was shorter lived than in genuine measles, particularly in those cases where roseola prevailed, and was observed to be wanting in that crescentic arrangement laid down by authors. It also attacked a number who were known to have had rubeola previously. No age, sex or race was exempt. In those cases where roseola appeared, the attack was not accompanied by any catarrhal symptoms.

"In all cases there was an unusual proclivity to diarrhœa; this appeared to be independent of the eruption, for in many cases where it was standing out in full crop, diarrhœa would be persistent, with griping pains and vomiting, and not unfrequently, the former were exceedingly severe.

"It was also remarked that, after the entire subsidence of the eruption, the diarrhœa would continue for days.

"During the prevalence of this epidemic, there was a high range of temperature, the thermometer not unfrequently rising above 90°. Rains were frequent; it was almost continually cloudy, with a high dew-point.

"As is usual in wet seasons, intermittent and remittent fevers prevailed to a great extent, but we had less typhoid fever than the previous year."

The diseases of the lower part of the second or primitive geological division of the State vary considerably, according as the locality approaches the lower or upper limits of the old settlements below the mountains.

Dr. Wynn, in a letter to Dr. G. F. Cooper, says: "in Monroe County they are free from the usually called 'local causes' of disease, and from their usual consequences, intermittent and bilious remittent fevers, and they have been very rare for several years.

"In the early spring and winter, we have a little pneumonia, catarrhal influenza, &c. In summer, enteric affections prevail, diarrhœa, dysentery, and cholera morbus.

"Our fevers of summer are those that have received among us the name of typhoid, though I must say I have seen none that I thought approximated in its symptoms the specific typhoid fever of the books. But for all the cases that I have seen, I like better the title of nervous, for they all have wanted the enteric lesion, the large spleen, the eruption, &c.

"In fact, they have seemed to me entitled to be considered congestive fever, with cephalic tendency,

"Dr. Hood, of Harris County, says: 'In the spring of 1851, typhoid diseases became epidemic, and were the prevailing diseases until May, 1852, when we were visited with another and more fatal form of disease, though I considered it a modification of typhoid fever."

"Another class, or modification of the same disease, prevailed at the same time, and with fearful fatality. It presented all the features of the foregoing, attended with frequent bloody sanious stools, recurring at regular intervals in many cases, in spite of all treatment; opium, morphine, tannin, acetate of lead, anodyne enemata, &c., &c., and continuing week after week, to death or recovery. The small bowels were evidently the seat of the disease; no griping or tenderness in the region of the colon or rectum."

Dr. Knott, of Griffin, Spalding County, communicating to Dr. Cooper, in 1853, says: "The most prevalent diseases among us in winter, are pneumonia, typhoid pneumonia, pleuro-pneumonia, bronchitis, inflammatory fever, rheumatism, neuralgia, &c. In spring, diarrhœa, especially among children, dysentery, among all classes, ages and sexes. In summer and autumn, occasional cases of bilious fever, with a marked tendency from the first, to run into the typhoid form. The most remarkable feature of pneumonia, is its complication with the typhoid form of fever, and in some, cases, not characterized by marked remissions or exacerbations. In all the cases of diarrhœa and dysentery, the bilious diathesis was present, consequently I directed my remedies to that function.

"In the treatment of typhoid fever, as well as pneumonia of

like character, my reliance was upon mercurials, with a view to their alterative effect, and antimonials, as a sedative, combined with opium, aided by mild saline cathartics, and as valuable auxilaries, counter-irritants."

In approaching the mountainous part of the second division, it is found that the diseases are more inflammatory in type, seeming to be more the effect of the great and sudden changes in the temperature and moisture, than of any local causes, especially in the winter and spring months, but in some places spring intermittents, attributed to malaria, are frequent.

In the summer months, bilious remittents and intermittents are occasionally met with, and in wet seasons, diarrhœa, cholera morbus, and other disturbances of the digestive function, are not uncommon, especially during the greatest heat.

In the fall of the year, bilious fevers put on a more malignant form, most commonly with some one symptom, or some complication seeming to take the lead, and to give character to the disease in one year, and some other peculiarity in the next: thus, if in the commencement of a sickly season, we see a case of fever beginning with the usual feeling of lassitude, uneasiness, pain in the head and back, but with less flush on the skin, and the pulse not so full and bounding as in other cases, with slow deep breathing, and a torpid, careless state of mind, with constricted skin—"goose-flesh"—on the application of cold air or water to any part of the surface, indicating an irregular circulation, with determination to the deep seated bloodvessels—we have a case of congestive fever. And we are exceedingly apt to find it followed shortly by other cases very much like it. In fact, for some unknown cause, every disease of whatever kind, even if caused by mechanical injury, will show more or less proclivity to this same congestion.

Again, if in the beginning of the fall fever season, we see a case of urticaria running into fever, with great heat of the surface, anxiety, oppressed breathing, restlessness, and violent pain in the head and back, we have a case of "rash-fever," which will, most probably, tax our skill and industry to the utmost: and will doubtlessly be followed by like cases during all the remaining season.

Thus we have once in a while, an epidemic fever of one name, and then of another, as one symptom or another, or one complication or another may happen to prevail.

Scarlatina, rubeola, varicella, pertussis, parotitis, erysipelas, dysentery, and some other diseases of minor importance have prevailed as epidemics at uncertain intervals of time, in the whole of the primitive division of the State.

We now come to the diseases of the third division of the State, the transition, or blue limestone region; the last part of the State settled.

I am indebted to Dr. Robert C. Word, formerly of Cassville,

Cass County, but now of Rome, Floyd County, for all that I can say on this subject.

Dr. Word prefaces his account of the diseases of this country by a notice of the domestic habits of the people.

"Much of the disease," says he, "peculiar to the country is unquestionably due to a disregard of the laws of health. Imprudent exposure to the multifarious changes of climate, is the most frequent exciting cause of disease in the colder seasons. Though, of late years, it may be said that a majority of the inhabitants are well clothed, yet their houses are generally too open to furnish adequate protection from the chilling moisture of the winter season. Defective ventilation in cities is, perhaps, not more injurious to health than excessive ventilation in the country. Much of disease, also, may be attributed to cold, wet feet, consequent upon the muddy nature of the soil, for which the country is proverbial, and to which long custom has rendered the people careless and indifferent.

"As would be inferred, from the varying circumstances which we have mentioned, different diseases prevail during different seasons of the year, and furnish to the practitioner a more diversified experience than is found in some other localities. Catarrhal fever, rheumatism, pleurisy, pneumonia, and kindred phlegmasiæ, are common in winter and the early part of spring. Typhoid fever, a few years since, was only observed in winter, and is still most generally designated, in popular language, as winter fever. More recently, it has occurred also in summer and autumn. With the commencement of the heat of summer, a few sporadic cases of dysentery and diarrhœa make their appearance, becoming gradually more numerous, until they are so generally prevalent as to deserve the name of epidemic. Not unfrequently having so prevailed for a few weeks in June and July, thy subside for a time, to reappear in a more fatal form during the autumn. a few cases of remittent and intermittent fever are met with in the early part of summer; they usually increase in number and violence as the season advances, and shortly before the return of cool weather, occasional examples of the congestive form of this disease are observed, rarely, however, at an earlier period. Not unfrequently these febrile attacks make their appearance during the suspension which has been remarked in the prevalence of bowel affections, and continuing conjointly with them, but attacking different subjects until the end of the warm weather.

"The autumn is marked often by the prevalence of influenza, of a mild form, which some persons have attributed to the great difference between the temperature of the days and nights at this period, and others to the constant inhalation of the dust, with which the atmosphere is loaded.

"The almost regular succession of annually prevalent maladies,

and many others of occasional, but irregular occurrence, together with the marked peculiarities impressed upon all in particular years, or during particular seasons, by prevailing epidemical or atmospherical influences, exact an unusual amount of caution and practical tact in diagnosis.

"A few years after the first settlement of the country, malarious diseases were uncommon, inflammatory diseases more frequent than at present, the inflammation of higher grade, and vigorous antiphlogistic treatment better borne, and more successful than at present. With the clearing up of the land, exposing a larger surface, covered with a rich vegetable mould, and saturated with the rains of winter, to the action of a summer's sun, there has been a marked increase of all the afflictions which malaria is supposed to produce, and a very observable modification in the general sanative condition of the population, or in the character of many diseases which it is not pretended that malaria originates, but over which it appears to extend its mysterious influence. Many of the inflammatory attacks, occurring in winter in the last few years, have been found to assume the livery of this subtile morbific agent, evincing a decided tendency to periodicity, and demandimg the administration of quinine. Many others, it is true, offer no such peculiarity, but are truely and frankly phlegmasiæ, requiring for their successful treatment free and bold employment of the lancet, and all the antiphlogistic expedients so familiar to the past generation of physicians. This intermingling of symptoms, blending of lights and shadows, is still more common in autumn and spring, and more embarrassing, because a just diagnosis is often difficult, and a mistake highly dangerous. To subject a patient previously enfeebled my miasmatic influence, or actually laboring under an irregular form of miasmatic disease, though simulating, with astonishing accuracy, an acute inflammation, to the debilitating effects of the antiphlogistic treatment is not simply unnecessary, but as has been too often sadly demonstrated, hazardous or fatal, producing prolonged debility, tedious convalescence, or else speedily, or more remotely death. To omit to do so, upon the other hand, when an important organ is truly the seat of active inflammation, is to expose him to immediate peril, or to the doubtful consequences of the pathological changes by which that condition is followed. In a more malarious region, as well as in districts where the influence of malaria is less marked, the nice discrimination so often demanded here is, perhaps, less important, but the ability to make it, in this section, decides between success and the want of it.

"Tubercular disease, although it cannot be said to be prevalent amongst us, is by no means unfrequent. Tubercles in the lungs are more common than in more southern and less elevated regions, where there are fewer alternations in the weather, and

less humidity. Experience has shown that the locality is not a good one for consumptive persons, or those who are predisposed thereto. Whether originating in the country, or introduced from abroad, the disease runs rapidly through its various stages to a fatal termination.

"Typhoid fever, I believe, made its first appearance in this part of the State in the winter of 1842, at which time a number of cases were seen in the immediate vicinity of Cassville. For a few years subsequently, the disease was confined entirely to the winter season, and it was not until about the year 1846 that it began to occur in the spring and fall. In the years 1846 and 1847, it prevailed extensively throughout the greater portion of Cass County. More than sixty cases came under our observation in those two years, and though the fatality was not very great, the cases were generally obstinate and tedions, running their course in a period of from three to six weeks, with a tendency to a favorable termination when unmolested by drastic remedies. Most of the fatal cases which occurred we believe to have been due to the injudicious use of purgative medicines, usually prescribed by the patients themselves before consulting a physician. Since the period above referred to, the disease has continued to prevail, varying in extent and violence at different times, and extending its baneful influence to other and milder maladies. Occasionally it breaks out afresh in different or in the same localities, complicated with features and peculiarities not previously observed. Many cases present malarial peculiarities, and are marked with tertian exacerbations. Others are complicated with pneumonia or rheumatism. It has been followed by the congestive form of the disease, which in a large majority of cases, proved rapidly fatal."

Dr. T. J. Word, of Floyd County, in 1853, said that "typhoid fever has prevailed in Floyd as an epidemic for two or three years past mostly between the months of October and the beginning of spring, during which time it has taken the field to the exclusion of most other diseases, or compelled them to form an alliance with it. In the fall, it was occasionally associated with remittent fever; in the winter with pneumonia. In the nervous, it was sometimes associated with neuralgia, and in the female, with hysteria.

"The cause of its general prevalence for a few years past can only be satisfactorily explained by admitting it to be an epidemic. Upon no other ground can we explain its appearance in regions where not one of the local or endemic causes exist to which its production has been ascribed.

"It occurs in the hilly and broken sections of the country, and in families who enjoy all the comforts of life, and are exempt from every apparent local cause of disease. Other causes than confin-

ed or vitiated air, decomposing animal or vegetable matter, or standing water, must be adduced, as it is known to occur in a malignant form where none of these causes exist. 'The presence of the typhoid principle in the surrounding medium exercises a controlling influence over the cause and duration of other diseases.' In further confirmation of this view is mentioned the increased or altered sensibility of the gastro-intestinal canal to the impression of cathartics, that part of the economy to which the force and violence of typhoid fever is directed. 'The smallest doses of the mildest cathartics have been known to occasion exhausting purgation.' 'That there has been for some time an epidemic constitution of the atmosphere, and that, under different states and temperatures, it may produce different effects, and give rise to a variety of morbid actions according to the predisposition of the system at the time, does not, I think, admit of a question of doubt.'

"Dysentery prevailed extensively in the years of 1851 an 1852. During the summer of the last, it was attended with a considerable mortality, especially among children.

"The inhabitants of the valleys and creek bottoms suffered most. The weather was warm and rather dry during the prevalence of the disease.

"During the epidemic last summer, diarrhœa prevailed also, and not unfrequently was found associated with dysentery in the same subject. Copious sanguineous or serous discharges would sometimes alternate with dysenteric discharges. This form of diarrhœa was usually very prostrating in its effects, and in some instances proved suddenly fatal. It was attributed by many to the cholera atmosphere then supposed to pervade the greater portion of the United States. The occurrence of fatal cases of cholera morbus at the same time give credibility to this opinion.

"The months of July and August seldom pass by without the occurrence of many cases of bilious dysentery, in some of which the influence of malaria is very perceptible.

"Influenza, or epidemic catarrhal fever, is of frequent occurrence. It may be said to be a regular visitnt of the spring and fall seasons, each visitation being characterized by some new peculiarity. In the fall of 1851 a form of the disease prevailed, marked by the following symptoms: pain in the head, back, and extremities, cold shivering sensations, deep bronchial cough, and occasional slight fever. All of these symptoms were worse in the early part of the day. The weather was dry, but had been preceded by heavy rains; previous to the rains there was a great drought.

"Neuralgic affections are quite common in this country. They appear generally to be of malarious origin, and yield to quinine, cupping, &c. In the colder seasons the disease is frequently blended with rheumatism, and appears to be developed by exposure to cold and damp weather. The facial variety is most common."

I have now finished the work assigned to me, to the best of my ability, and hope that it may meet the views, and fulfil the requirements of the Association.

And now, also, I make my acknowledgements, gratefully, for the assistance which I have received from those gentlemen of the profession who have given me the benefit of their knowledge.

To Dr. P. M. Kolcock I am indebted for most of the part belonging to the neighborhood of the sea, and through his instrumentality to Dr. Bealer, of Effingham, Dr. Dunham, of Camden, and Dr. Hopkins, of Wayne County.

Dr. H. Briggs, of Troupville, Lowndes County, communicated all that I have given of Southwestern Georgia.

I owe to Dr. G. F. Cooper, of Perry, Houston County, much of what I have said of the upper part of the first, and lower part of the second division.

Dr. Robert C. Word is my authority for all concerning the third or limestone division.

I have endeavored carefully to distinguish the parts due to each contributor, as vouching for the correctness of whatever I have written, whenever it was not from my own observation.

[*Transactions Amer. Med. Association*, 1857.

The Uses of Chlorate of Potash.

I. On the Therapeutical action of Chlorate of Potash, with a new mode of administeing it. By Dr. Dethan. (*L'Union Médicale*, and *Brit. and For. Med. Chir. Rev.*

II. On the use of Chlorate of Potash in Pregnancy. (*Liverpool Med. Chir. Journal*, and *Ranking's Abstract.*)

The use of Chlorate of Potash.—In the August number of the last volume of this Journal we collected from various sources, several articles on the different applications of the Chlorate of Potash in the treatment of disease. We have since made frequent tests of its usefulness, and find that it answers an admirable purpose as a lotion, in many cases of leucorrhœa, and other affections of the vagina—and also in some cases of stomatitis, either from mercurial salivation or other causes. In one instance of sore throat, attended with great fetor, which occurred at the end of a protracted case of Typhoid fever, its application as a gargle, was followed by surprising results. We understand that Dr. W. L. Felder, of this city, has used Chlorate

of Potash, internally, strength 3j. to 8 oz. water, for twenty years, as a remedy in Typhoid fever. Dose of this solution, as used by him, was 1 teaspoonful every three or four hours. The strength of the solution used in all of our cases, above-mentioned, was two drachms of the salt dissolved in 8 oz. of water. This was applied to the affected mucous surfaces four or five times during the day, either as a gargle or as an injection, as the nature of the case required.

We here present to our readers some other applications of this valuable article, and its use in certain cases of pregnancy. We do not pretend to explain the manner of its action; but the facts here reported, though not entirely conclusive, are certainly very striking, and should at least arrest our attention.

"Dr. Dethan considers that chlorate of potash is a powerful sialagogue, and that its elective action on the bucco-pharyngeal mucous membrane is well marked. To this physiological action is added a very remarkable and valuable success in pathology; its rapid and incontestable effects in mercurial salivation, by checking the formidable mercurial affection, have permitted practitioners to continue the mercury without fear, and thus to contend without remission against the constitutional infection. As an especial and incontestable remedy in ulcero-membranous stomatitis, this medicine need not, according to the physicians of the Hôpital Sainte-Eugénie, be swallowed; its topical application is sufficient, and in a short time the mucous membrane recovers its normal qualities and functions. Dr. Dethan concludes that the chlorate of potash, administered under a special form, which would permit the local action to be exercised slowly and certainly, although leaving the medicine to be carried into the stomach in a state of solution with the mixed liquids of the salivary, buccal and pharyngeal glands, would be the mode of administration which would combine all indications and all opinions. He therefore suggests the use of the remedy in the form of pastiles, so that the patient may have at hand a remedy against the injurious effects of a mercurial treatment which he may be undergoing. The experiments of Dr. Ricord, and the publications of M. A. Fournier, testify incontestably in favor of this successful simultaneous medication. In certain forms of angina attended with fibrinous exudations, it prevents the intimate adherence of the false membranes to the mucous membrane, and facilitates their expulsion, and assists the action of emetics. In this affection the topical action of the chlorate, favoured by the bruising between the teeth, the natural solution

in the liquids of the mouth, and its penetration into all the points interested, will be certainly efficacious. In debilitating diseases, such as diphtheritis, and gangrene of the mouth, the child will find an agreeable and reparative kind of food, together with the most appropriate remedy hitherto discovered, against these diseases."

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"Every one engaged in midwifery practice will have met with cases in which the child is carried successfully into the viable period, but some time between this and the full term of pregnancy, is born still, or very weakly; and this perhaps for several successive pregnancies, without any external or accidental cause to explain the premature death and delivery, and with no evidence of syphilitic taint in the parents.

"It is in such cases that Mr. Grimsdale (in accordance with a suggestion thrown out some years ago by Dr. Simpson) has been in the habit of prescribing chlorate of potass with some apparent benefit.

"Case 1.—Mrs. Darbyshire, a stout, healthy looking woman, æt. 34, was delivered of a female child, after a labor of eleven hours' duration, in the Lying-in Hospital, on the 24th March, 1852. During labor there was a large discharge of very offensive, dark-colored muddy water; the nurse told me she filled two chamber-pots with it, besides what escaped in the bed. The child was with difficulty made to breathe. It was jaundiced from birth, and died of hemorrhage from the umbilicus, on the seventeenth day.

"The placenta was diseased; portions of its maternal surface were seen to be of a pale yellowish color, and these were firm to the touch, and penetrated nearly to its fœtal surface; at least one-fifth of the bulk of the placenta must have been occupied with these firm pale portions. The centre of each patch was firmer than its circumference, and it seemed to pass insensibly and gradually into healthy placental structure, having no accurately defined boundary. On the maternal surface were also several stellated patches of vessels, distinctly gritty to the touch.

"Dr. Inman kindly examined this placenta under the microscope, and he did not regard the changes observable in it as due to inflammation, neither was it an instance of fatty degeneration. This woman had had four previous pregnancies, in which she had been attended by a midwife at her own home. The children were all still-born, and said to have been yellow. Of the state of the after-births I could learn nothing satisfactory.

"About the middle of April, 1853, the patient came to me, stating that she was five months in the family way, and would be glad if anything could be done to avoid the birth of another diseased child. I gave her chlorate of potass, 5 grains three

times daily, to be increased in a fortnight to 10 grains. She continued this with but little intermission to the time of her delivery, on the 13th of August, when she gave birth to a healthy child, which is now (October, 1855) living and thriving. The placenta was large, and quite healthy looking. I may remark, that before commencing the chlorate of potass treatment, I made careful inquiry as to the probability of any syphilitic taint in either husband or wife, and could detect nothing in their history to warrant any suspicion.

"Case 2.—Mrs. Egan, a poor woman, æt. 21, pale and rather delicate looking, presented herself at the dispensary of the Lying-in Hospital, in April, 1855, and stated herself to be four months in the family way. She said that she had been four times pregnant before, and had on each occasion given birth to a dead child. Her labors had been of no great severity, and of moderate duration; the midwife who attended her told me that the children were small, and appeared to have been dead some days; the after-births, she said, were 'pale in parts, and queer looking.' The husband was a steady working man. I saw him; he looked strong, and denied having had syphilis.

"The former pregnancies had been attended with no pain. I ordered chlorate of potass, 20 grains a day. She continued this for four months. On the 5th September she was delivered of a fine healthy child, which is still (October 10th) thriving and without ailment. The placenta was large and healthy.

"Case 3.—Mrs. D., æt. 33, of spare conformation, hysterical temperament, became pregnant about six months after her marriage. After quickening, the movements of the child were distinct, and increasing in power up to the end of the sixth month of her pregnancy; she then began to feel them decidedly weaker; not much notice was taken of this, as she had no pain, until in about three weeks she ceased to feel any movement. I saw her, and on examining with the stethoscope, could hear no fœtal heart sound. In about a week from this she gave birth to a dead child, the cuticle of which was beginning to desquamate. It was well formed, but the skin was wrinkled, and it looked ill-nourished. The placenta was in parts pale, firmer than natural, and its vessels in these parts deficient in blood.

"In March, 1853, I again saw her; she was then pregnant three months and a half. I recommended her to take the chlorate of potass at once. She began with 15 grains in the day; she had only taken it three or four days when she complained that it made her head ache. I ordered its discontinuance, but in a few days again prescribed it without her knowledge; again she complained of intense headache, and I left it off for a month. She tried it once more, but declared it gave her a most fearful headache, which she could not bear. This second pregnancy

followed as nearly as possible the same course as the first, and with the same results.

"In December, 1853, she was again pregnant; I saw her when she was four months advanced, and wished her to try the chlorate in smaller doses. She took 3 grains thrice daily with impunity; this was continued for three weeks or a month; she then increased the dose to 4 grains, and subsequently to 5 grains. All seemed to go on well. The movements of the child, she said, were considerably stronger than in her former pregnancies.

"When well into the seventh month, she was riding out in her carriage, a low, four-wheeled phaeton, when another vehicle ran into them, smashed the carriage, and upset its occupants. My patient was of course much frightened; she felt, she stated, a violent commotion in her inside for some hours, but after that day did not feel any movement. She was from home at the time: in two or three days she returned; I then saw her, could detect no fœtal heart-sound, and believed the child to be dead. In ten days from the date of the accident labor came on, and she was delivered of a dead child.

"Nothing could be more marked than the contrast presented between this child and its placenta, and those of the two former deliveries. The child was plump, and had all the appearance of a healthy seven months' child; the placenta was everywhere soft and spongy and its vessels seemed to have been uniformly full of blood,

"This lady became pregnant for the fourth time in the beginning of October, 1855. About the end of the third month she commenced to take the chlorate in 3 grain doses, and gradually increased it to 5 grains, thrice daily. She was occasionally compelled to intermit its use, in consequence of the headaches, as before; but with these exceptions it was persevered in until the full time of pregnancy, when she was delivered (June, 1856) of a healthy male child, now living (June, 1857). The placenta was quite healthy.

Case 4.—Mrs. ——, a stout, healthy-looking woman, came to me in November, 1854. She was between three and four months gone in the family way. She had been seven times pregnant before, but had never given birth to a living child. One child she carried to nearly the full time; five had been born between the sixth and eighth month, and one was aborted at an early period of pregnancy. I ordered her to take the chlorate in 5 grain doses, thrice daily; and after the fifth month especially enjoined the immense importance of rest; this latter injunction she seemed determined not to comply with.

"She went on well until February, 1855, frequently stating that she felt the movements of the child stronger than usual.

On the 12th, after having kneaded a large pan of dough, and performed sundry other laborious domestic exercises, labor came on unexpectedly, and she was delivered in five or six hours of a *living* child—the first of all her children that had ever breathed. It was a breech presentation; the child seemed of about six and a half or barely seven months' development, and only lived a few hours. The placenta was healthy.

"Case 5.—Jane D., æt. 26, presented herself at the Lying-in Hospital, September 12th, 1853. She said that last year she had miscarried at six months, without any apparent external cause. The child had been dead some time: she learned this from the midwife who attended her. She was now four months advanced. She commenced the chlorate 15 grains in the day, continued it on and off during the rest of her pregnancy, and was delivered of a healthy child at full time.

"I have notes of ten other cases similar to this last. I do not think they are worth much as evidence; they will, therefore, scarcely add to the interest of this paper, and I refrain from giving the details.

"In two cases apparently likely to have received benefit from the chlorate, and in which it was exhibited as usual, I failed to perceive any favorable result. In one of the cases, death of the fœtus, and miscarriage, at the seventh month, occurred, as it had done in three previous pregnancies. In the other, the child was born dead and ascitic, at eight months and a half, the placenta being hydropic. The mother had, before taking the chlorate, given birth to four still-born children in succession.

"Of the nature of the diseased action in these cases, I am not prepared to say much. It would seem to be located primarily in the placenta, and to cause the death of the child secondarily, by the consequent effects on the placental function. The morbid appearances in the placenta would seem to be tolerably uniform: I can see no evidence of their inflammatory nature; and there certainly were no previous symptoms indicative of inflammation in any of the cases."

The Phosphates in Tuberculosis.—If Dr. Churchill's opinion with regard to the beneficial action of the Phosphates, in Phthisis, is correct, of course these remedies will be found applicable, at least rationally so, in all the other manifestations of the strumous diathesis, as the multitudinous affections pertaining to the eye, the lymphatic glands of the neck and of the axilla; affections of the hip-joint, knee-joint, elbow, and shafts of the long bones.—Calculating strongly on the chemical action of

medicines within the organism, we are aware, is not always safe from disappointment;—that is, practice does not every time *con*firm what theory *af*firms; but when experience plainly demonstrates what reason will approve, we may ever feel safe in following their joint indications.

On the Proximate Cause and Specific Remedy of Tuberculosis. By Dr. JOHN FRANCIS CHURCHILL.

The following is the abstract of a paper which was laid before the Academy of Medicine at Paris, on the 21st of July, 1857:

The total number of cases of phthisis treated by the author amounts to 35. All were in either the second or the third stage of the complaint—that is, they had either softened tubercles or cavities in the lungs. Of these, 9 recovered completely, the physical signs of the disease disappearing altogether in 8 out of that number; 11 improved considerably, and 14 died; 1 still remains under treatment.

The proximate cause, or at all events an essential condition of the tubercular diathesis, is the decrease in the system of the phosphorus which it contains in an oxygenizable state.

The specific remedy of the disease consists in the use of a preparation of phosphorus, uniting the two conditions of being in such a state that it may be directly assimilated, and at the same time at the lowest possible degree of oxydation.

The hypophosphites of soda and lime are the combinations which hitherto seem best to fulfil these two requisites. They may be given in doses varying from ten grains to one drachm in the twenty-four hours. The highest dose which I have been in the habit of giving to adults is twenty grains.

The effect of these salts upon the tubercular diathesis is immediate, all the general symptoms of the disease disappearing with a rapidity which is really marvellous.

If the pathological deposit produced by the dyscrasy is of recent formation, if softening has only just set in and does not proceed too rapidly, the tubercles are absorbed and disappear; when the deposit has existed for a certain time, when the softening has attained a certain degree, it sometimes continues in spite of the treatment, and the issue of the disease then depends upon the anatomical condition of the local lesion, on its extent, and upon the existence or non-existence of complications. The author has made numerous attempts to modify the local condition of the lungs by the inhalation of different substances, but has never obtained any satisfactory result independent of what was to be attributed to the specific treatment. The hypophosphites of soda and lime are certain prophylactics against tubercular disease.

The physiological effects which he has observed to be produced by the use of the hypophosphites of soda, lime, potash and ammonia, show these preparations to have a two-fold action. On the one hand they increase the principle, whatever that may be, which constitutes nervous force; and on the other, they are the most powerful of hæmatogens, being infinitely superior to all medicines of that class hitherto known. They seem to possess in the highest degree all the therapeutical properties formerly attributed by different observers to phosphorus itself, without any of the danger which attends the use of that substance, and which has caused it to be almost forgotten as a medical agent. The different preparations of hypophosphorous acid will, according to these views, occupy one of the most important places in the Materia Medica.—[*Dublin Hosp. Gaz.*, and *Ranking's Abs't.*

The Non-Mercurial Plan of Treatment in Syphilis. Read before the Western Medical and Surgical Society. By Dr. CAHILL.

He commenced by narrating a number of cases in which the constitutional effects of syphilis had been very severe, and had extended, in spite of treatment, through many years, in all of which the early stage of the disease had not been attacked by mercury. After detailing these very carefully, he entered into the history of this plan of treatment, remarking that most of the Irish surgeons who had adopted it have since changed their opinions respecting it. He maintained that the severest and worst forms of constitutional syphilis occur when no mercury whatever has been given for the primary disease, and that the notion that the severe cases of secondary disease are mainly due to the mercury administered is not founded in fact. Mercury, to be of use, must be persevered in for at least six weeks, and to produce its good effects need not to be given lavishly or recklessly. If attention be not paid to this fact, no permanent effect is produced, and other forms of the disease, as secondary or tertiary, are apt to follow immediately after. He recommended the use of the bichloride in doses of one-twelfth to a quarter of a grain, together with the inunction of the strong mercurial ointment, until the gums showed that the system was affected by the mercury. The bichloride is borne better than any other form of mercury, and can be continued with safety longer than any other mercurial preparation, not only in these cases, but even in scrofulous diseases, in which its use is advisable; hence its peculiar value. Iodide of potassium, given with iodine, is the next remedy to be relied upon, though it is chiefly valuable in secondary and tertiary affections of the periosteum. In tertiary symptoms, the iodide is our sheet-anchor, and mercury

should never be given in such cases to the extent of producing its specific effects; should a mercurial be required, the hyd. c. creta is to be recommended in conjunction with the iodide of potassium. Iron, arsenic, and mineral acids, under certain circumstances, are useful, especially after mercury has been fairly tried; these, with the ordinary means of restoring health, as good food, pure air, and rest, will generally promote a cure. He then alluded to the difficulty of distinguishing primary chancre, and the means employed by inoculation, and the peculiar hardness, of the true Hunterian chancre, and to the chance there was of a chancre in the urethra being overlooked, and to other sources of error as to the curability of syphilis without mercury. He concluded with the following observations:—

1st. That the severest and most prolonged forms of the disease have arisen where no mercury has been given for the primary or early secondary affection.

2ndly. That as no symptoms identical with those of constitutional syphilis are produced by mercury, the notion that mercury is a cause of constitutional syphilis is founded in error.

3rdly. That the administration of mercury may be so regulated as to preclude any of its severe effects; and supposing any are produced, it is manifest that they would be less severe than those caused by constitutional syphilis.

4thly. That the constitutional effects of mercury should be avoided in tertiary syphilis.

5thly. That the supposed successful treatment of syphilis without mercury is founded on erroneous diagnosis, or the cases have occurred in individuals already protected, or the subjects have been of that class who seem to enjoy immunity from the worst part of the complaint.—*London Lancet.*

Pathology of Convulsions, with especial reference to those of Children. Read before the North London Medical Society. By Dr. Reynolds (of which the following is an abstract):

I. All vital actions are accompanied by, and depend on, physical changes in the living organism.

II. Modifications of vital action depend on modified physical conditions. Some symptoms of disease are modifications of vital actions, and there are two general modes in which they are, or may be, related to the nutrition-change:

1. Negative symptoms—i.e. those which consist in the negation of vital properties, such as paralysis, anæsthesia, etc.—may depend directly on a "solution of continuity," or some other distinct organic disease; but

2. Positive symptoms—i.e., those which consist in the altera-

tion or excess of vital action—cannot depend directly on such textural condition, but must have for their immediate cause some modification of the minute interstitial processes.

III. Convulsions, being essentially modifications of vital actions, must depend on modifications of physical conditions. Though no "lesion" is discoverable, we are warranted in the conclusion that nutrition is affected.

IV. Convulsions depend on modified nutrition changes in the nervous centres.

V. The proximate cause of convulsions is the same in all cases when the convulsions are the same; and the lesions discovered in the nervous centres or elsewhere are not the proximate causes of convulsions, for they differ in locality and kind, and have no constant proportion to the symptom in question.

VI. The proximate cause of convulsions is an abnormal increase in the nutrition changes of the nervous centres—an increase in relation to time or to mobility.

VII. The remote causes are such as induce the abnormal increase. There are three general modes in which these causes operate:

1. The nervous centres may be involved in a *general* nutrition change—e.g., as during dentition, at puberty, in Bright's disease, scrofulosis, rickets, etc.

2. The nervous centres may be the seat of *special* disturbance, owing to organic lesion, as tumour, spiculæ of bone, etc.

3. Eccentric irritations may affect their nutrition through different nerves.

VIII. The diagnosis in convulsions is that of the *remote* cause, and the first step is to ascertain to which of the above three categories the case belongs. In children, the diagnosis will turn on:—

1. The *duration* of the paroxysm;
2. The *frequency* of its repetition;
3. Its *local* or *general* distribution; and,
4. Interparoxysmal symptoms.

The last are of the most value; and the positive or negative character of the symptoms, together with local distribution, afford material assistance in this process.

IX. The *treatment* of convulsions is guided by the diagnosis, and will consist in the removal or palliation of eccentric irritations, the improvement of general nutrition, and the treatment of local disease.—[*Ibid.*

EDITORIAL AND MISCELLANEOUS.

Pacific Medical and Surgical Journal.—We have just received the first issue of this new journal. The present number, in the character of its papers, its style, and typographical execution, gives promise of this new comer to our sanctum, being a most valuable addition to the medical literature of the country. "Every civilized nation," to use the language of its Editors, "has sent some of the boldest and most enterprising of her medical scholars, to earn fortunes and fame from the babel population of California. In this city, besides numberless American, English, French, German and Italian physicians, there are medical savans of the Mongol race, who practice both surgery and medicine." Therefore, we repeat, this journal must become an important exponent of a variety of medical opinion, and we look forward to its future success with much interest. The work is edited by John B. Trask, M.D., and David Wooster, M.D. It is published monthly, at San Francisco, California, at five dollars per annum, and the editors are also the publishers.

We take great pleasure in placing this new member upon our Exchange List, and in welcoming its editors, cordially, into the fraternity of journalists.

A Manual of Medical Diagnosis: being an Analysis of the Signs and Symptoms of Disease. By A. W. Barclay, M.D., Cantab et Edin. Fellow of the Royal College of Physicians, Assistant Physician to St. George's Hospital, etc., etc. Philadelphia: Blanchard & Lea. 1858. Pp. 423, 8vo.

In the circle of attainments necessary to constitute the rational and reliable practitioner, no one of them is more important than a correct and philosophical system of diagnosis. Without it, all treatment is empiricism, every measure, a bare assumption, and Therapeutics itself but a *guess*. Of works exclusively devoted to this important branch, our Profession has at command, comparatively, but few, and, therefore, in the publication of the present work, Messrs. Blanchard & Lea have conferred a great favor upon us. Dr. Barclay, from having occupied, for a long period, the position of Medical Registrar at St. George's Hospital, possessed advantages for correct observation and reliable conclusions, as to the significance of symptoms, which have fallen to the lot of but few, either in his own or any other country. He has carefully systematized the results of his observation of over twelve thousand patients, and by his diligence and judicious classification, the Profession has been present-

ed with the most convenient and reliable work on the subject of Diagnosis, that it has been our good fortune ever to examine.

We dislike to recommend any book, except a dictionary as "a book of reference," for no author can ever obtain his full meed of consideration, unless he is read diligently through—page by page: but we are aware that in the present unavoidable relations of the practitioner to the Science of Medicine, this "reference" phase of a book, is ever a recommendation; we can therefore say of Dr. Barclay's work, that from his systematic manner of arrangement, his work is one of the best works "for reference" in the daily emergencies of the practitioner, with which we are acquainted; but, at the same time, we would recommend our readers, especially the younger ones, to read thoroughly and study diligently the *whole* work, and the "emergencies" will not occur so often.

To Readers and Correspondents.—We have on our table, many other valuable works, pamphlets and communications, kindly sent us by publishers and correspondents. The notices of these, together with other important editorial matter, have necessarily been excluded from our present number, on account of the engrossing duties imposed upon us at this season, by our relations to the Medical College of Georgia. Still, it will be seen that, we have done *some* work for the present issue, as the original and eclectic department will show.

Professor Means.—As in the January number of this journal, we announced that our friend, Professor Alexander Means, had *resigned* the Chair of Chemistry in the Atlanta Medical College, we now state that Professor Means has subsequently *withdrawn* that resignation, and, therefore, retains his connection with that institution.

Professor Means has since, resigned the Chair of Chemistry and Pharmacy in the Medical College of Georgia.

The candor of Professor Syme, in making this correction through the London Times, is truly commendable and worthy of imitation, by all members of our profession, under like circumstance. There is true *manliness* in it.

An Excision of a Man's Tongue.—The following letter has been addressed, by Professor Syme, to the editor of the *Times:* "I regret to learn that an operation which I happened to perform in the Royal Infirmary of Edinburg has got into the newspapers; but as it has unfortunately done so, the public should be correctly informed on the subject. Partial removal of the tongue, for the remedy of Cancer, having been found worse than useless, it was thought that extirpation of the whole organ might afford effectual relief; upon this principle I proceeded. The pa-

tient suffered no bad consequences directly from the operation; but at the end of a week, when the external wound was quite healed, died suddenly from an internal disease, which might have been excited by any other irritation in a person of his constitution and habits."

Novel Method of Extracting a Foreign Body from the Œsophagus.— We have before us, in the pages of the Boston Medical Journal, an account of an extremely ingenious and novel method of extracting a foreign body from the œsophagus, by Dr. David Rice. "Mrs. Field, a lady aged 70, while eating chicken soup, accidentally swallowed a piece of bone the size of an American quarter of a dollar, cut into a triangular form. The bone lodged in the œsophagus, about two inches below the top of the sternum. Thinking that it might fall into the stomach, she neglected to apply for surgical aid, until the fifth day after the accident. In the mean time, she had swallowed neither food nor drink, both regurgitating back into the mouth with every attempt to do so."

The Doctor was called on the fifth day, but was unable to remove the foreign substance by any instrument which he had at his command. He finally took a piece of sponge of such a shape, as when dry, to fill about half of the tube, and introduced it rapidly in a dry state, then, by introducing a little water into the mouth, the sponge became moistened, and enlarged it to twice its natural size, completely filling the gullet. On drawing it out the bone was brought with it, much to the gratification of patient and practitioner.

There is a certain readiness of invention and expedient which is necessary to a surgeon, and without which he will often be nonplused and harassed. The same means cannot be applied to every case, and common sense, with a share of ingenuity, frequently is all that is necessary to overcome difficulties which seem to be very great. It is desirable to have in our minds the expedients which have been resorted to by others in difficult cases, for we are liable at any time, to have a case to which they are precisely applicable. We conceive that this mode of swabbing the gullet from below upward, by introducing a dry sponge below a foreign body, allowing it to imbibe moisture and then withdrawing it, might be applicable to a great many cases where the substance could not be removed by other means.—[*Buffalo Med. Journal.*

[We add, from memory, to the above, a very ingenious device of Dr. E. Leroy Antony, of Georgia, for removing a *certain kind* of foreign body from the throat. The patient by some means had swallowed a *fish-hook!* (what will *not* people swallow?) it had passed out of reach and became fixed in the gullet by the barbed end, in the efforts of the patient to relieve himself by pulling at the line which was attached to the hook and hung out of the mouth. Dr. A. removed the foreign body by passing a *drilled bullet* down the œsophagus upon the line, which, when it arrived at the hook-end, disengaged the barb, and protected the soft parts from being wounded with it, during its removal from the

throat. As Dr. Flint remarks, "it is desirable to have every possible expedient in our mind"—this last is also one which certainly deserves recording and recollecting.]

Surgery in San Francisco.—Dr. E. S. Cooper, of this city, has recently ligated the primitive carotid artery in two cases,—the external iliac in one, the axillary in one, removed a large fibro-cartilaginous tumour from the uterus; made the Cæsarian section in one; exsected parts of three ribs, and removed a foreign body from beneath the heart; exsected the sternal extremity of the clavicle and a portion of the summit of the sternum; together with the exsection of nearly all the joints, in different cases, all successfully.

This embraces a list of formidable operations, which, being attended with favorable results, are worthy of note. This uniform success in operations of such magnitude, must, in part, be attributed to the effects of our climate, which, for the recovery of patients after receiving serious injuries, is, at least, unsurpassed in any part of the world.

There have been many other capital operations successfully performed in various parts of this State, which we are unable, for want of data from the operators, to specify. There is no country in the world, where, in the absence of war, mutilation and deformities from injuries are so common and so serious, as in California; and it is not, therefore, remarkable that our surgeons have opportunities of practice which can be found only in the hospitals of other countries.—[*Pacific Med. and Surg. Journal.*

On the Temperature of the Body in Intermittent Fever. By Dr. S. Th. Michael.—These observations were made in different types of intermittent fever, and repeated at intervals of five minutes, so as to determine with exactness the precise variations of temperature.

Their result is that the temperature begins to rise at the rigor, and rises by slow degrees; and that after this it falls by slower degrees, and with intermissions. At the commencement of the rigor, and at the end of the period of sweating, the temperature is below the natural standard, sometimes to the extent of some degrees, sometimes to certain portions of a degree.

In the majority of cases, the maximum elevation was between 32° and 33° Reaumur, rarely below, more frequently above. The highest point ever attained was 33.4 Reaumur.

After the administration of sulphate of quinine the temperature did not attain to the same degree of elevation as previously; and during convalescence it remained below the normal standard, or only occasionally became raised to the fraction of a degree above it.—[*Archiv für Physiolog. Heilkunde. Ranking's Abstract.*

Glycerine in Corns.—These troublesome things Mr. Wakley is in the habit of treating, at the Royal Free Hospital, by the application of glycerine, which has the effect of softening them, when they are easily scooped out. We saw as many as seventeen corns entirely removed in twelve days in this manner.—[*London Lancet.*

"*On the Signs of Pregnancy.*"—It seems strange that Dr. Montgomery should have deemed it necessary to write so elaborate a treatise on this subject, when the old sage of Cos summed up the whole matter in three lines. Thus, in the 41st Aphorism of Hippocrates, we find the following:

"If you wish to know whether a woman is pregnant or not, instead of supper, give her hydromel (water impregnated with honey) at bedtime; if she experiences griping pains in the abdomen, she is pregnant; otherwise, she has not conceived."

Hippocrates, in another place, refers to a matter of some importance in its bearings on the duration of pregnancy. He states that his own father knew not his mother for two years before his birth! We believe that the Roman law was somewhat liberal in cases of *protracted gestation*, but the Greeks must have had some very *peculiar* notions on the subject, if they ranked the birth of this reputed 18th lineal descendant of Æsculapius (the latter, son of Apollo,) among the legitimate!—[*Western Lancet.*

Rev. Sidney Smith on Hay Fever.—In a letter to Dr. Holland, the eccentric Dean of St. Paul, thus gives his personal experience in this complaint:

"I am suffering from my old complaint, the hay fever (as it is called.) My fear is, perishing by deliquescence; I melt away in nasal and lachrymal profluvia. My remedies are warm pediluvium, cathartics, topical applications of a watery solution of opium to the eyes, ears, and the interior of the nostrils. The membrane is so irritable that light, dust, contradiction and absurd remark, the sight of a Dissenter—anything—sets me sneezing; and if I begin sneezing at twelve, I don't leave off till two o'clock, and am heard distinctly in Taunton, when the wind sets that way—a distance of six miles. Turn your mind to the little curse. If consumption is too powerful for physicians, at least they should not suffer themselves to be outwitted by such little upstart disorders as the hay fever."—[*Ibid.*

Anæsthesis by "Projection."—To avoid the accidents due to excessive inhalation of the anesthetic agent, and especially to insure that the material should be mixed with the requisite amount of air, Dr. Heurteloup, known in surgery for the invention of Lithotripsy, has contrived an apparatus for this end, (having in his experiments made use of chloroform). The apparatus is like a syringe with a small bellows for throwing in air in place of the piston, and having a gauze partition on which the chloroform is poured. The working of the bellows throws a steam out of the small end in a jet, which contains more or less chloroform, according as the discharging tube is brought more or less near to the bellows. The jet is established only on working the bellows, and there is no waste of chloroform during the operation.—[*American Jour. of Sci. and Arts.*

Incontinence of Urine.—M. Trousseau seems to have most unbounded confidence in the efficacy of Belladonna in the treatment of incontinence of urine. A girl æt. 19, entered the hospital, who voided her

urine two or three times during the night. He commenced with 1 *centigramme* (gr. .1543 Troy) of the extract, and in the course of a few weeks, increased the dose to 18 *centigrammes*. He insists upon the continued use of the medicine for several months after the incontinence had ceased, as a return of the difficulty may otherwise be anticipated.

[*Western Lancet.*

A New Property of Camomile.—Camomile (*anthemis nobilis*) is described in all treatises of materia medica as emollient, digestive, fortifying, &c., but none point out a most precious virtue, just announced as pertaining to it by M. Ozanam, whose paper on the subject was presented to the Academy of Sciences at its last sitting by M. Cloquet. This virtue consists in preventing suppuration when the local disease is not too far advanced, and in gradually stopping it when it has existed for a long time. For this purpose it is administered in powerful doses of five, ten, and even thirty grammes of the flower in a litre of water, the infusion to be drunk in the course of the day, and to be continued until the cure be effected. Compresses moistened with the infusion may be locally applied; they aid in the cure, but are not necessary—the infusion alone taken internally, being quite sufficient. In support of his assertion, M. Ozanam quotes a number of cases in which this mode of treatment was successful.—[*London Times.*

On the use of Manganate of Potass as a Caustic in Cancer. By Mr. Weedon Cooke.—Mr. Weedon Cooke speaks highly of *manganic acid*, in combination with *potassa* as a base, as the caustic in the treatment of cancer. It produces, he says, much less pain than any other caustic, and no ill-consequences of any kind. It is a dark-green powder, which may be dredged on the ulcerated surface by means of a pepper-castor.

[*Lancet.*

Duration of Cancer.—A case of some interest presented itself at the Cancer Hospital, on the 25th of August, in the person of a female, aged seventy-four years, the subject of cancer of the left breast for twelve years. She had been a patient at this hospital since its foundation, with this exception of the last three years, during which time she had been in good health. She came to show an ulcerated tuberculous mass in the same breast, the size of a small pear, otherwise the disease has dried up and disappeared. She still looking a hale and hearty old woman.—[*Ib.*

Medical Journals in the United States.—We think there is a growing disposition to lessen the number of our medical journals—to improve their quality—and a decreasing disposition to publish them for nothing! We observe a manifest improvement in the tone and character of almost all our exchanges, and we notice that several have already raised their price: we think these features in our journalism are proper and commendable. Medical periodicals, if published at all, must be paid for in some way—and if afforded to subscribers at a price actually less than the paper and printing cost, somebody must make up the deficit. Now this can very readily be afforded sometimes, by parties who have special

interests to advance, just on the same principle that we get a flood of almanacs annually thrust under our doors gratis, for the sake of calling our attention to their author's individual skill, or wonderful nostrums; but we doubt if the true interests of legitimate medicine are to be advanced by the publishing of our journals on such principles.

[*Cincinnati Lancet and Observer.*

Artesian Wells in Sahara. (Athen., No. 1562.)—The *Moniteur Algérien* brings an interesting report on the newly-bored Artesian wells in the Sahara Desert, in the province of Constantine. The first well was bored in the Oasis of Oued-Rir, near Tamerna, by a detachment of the Foreign Legion, conducted by the engineer, M. Jus. The works were begun in May, 1856, and, on the 19th of June, a quantity of water of 4,010 litres per minute, and of a temperature of 21° Réaumur, rushed forth from the bowels of the earth. The joy of the natives was unbounded; the news of the event spread towards the South with unexampled rapidity. People came from long distances in order to see the miracle; the Marabouts, with great solemnity, consecrated the newly-created well, and gave it the name of "the well of peace." The second well, in Temakin, yielded 35 litres, of 21° temperature, per minute, and from a depth of 85 metres; this well was called "the well of bliss." A third experiment, not far from the scene of the second, in the Oasis of Tamelhat, was crowned with the result of 120 litres of water per minute. The Marabouts, after having thanked the soldiers in the presence of the whole population, gave them a banquet, and escorted them in solemn procession to the frontier of the Oasis. In another Oasis, that of Sidi-Nached, which had been completely ruined by the drought, the digging of "the well of gratitude" was accompanied by touching scenes. As soon as the rejoicing outcries of the soldiers had announced the rushing forth of the water, the natives drew near in crowds, plunged themselves into the blessed waves, and the mothers bathed their children therein. The old Emir could not master his feelings; tears in his eyes, he fell down upon his knees, and lifted his trembling hands, in order to thank God and the French. This well yields not less than 4,300 litres per minute, from a depth of 54 metres. A fifth well has been dug at Oum Thior, yielding 108 litres per minnte. Here a part of the tribes of the neighborhood commenced at once the establishment of a village, planting at the same time hundreds of date-palms, and thus giving up their former nomadic life. The last well is that of Shegga, where soon an important agricultural centre will spring up. There is no doubt but that these wells will work in these parts a great social revolution. The tribes which, after the primeval custom of their ancestors, kept wandering from one place to another, will gather round those fertilizing springs, will exchange the herdsman's staff for the plough of the farmer, and thus take the first steps towards a civilization, which, no doubt, will make rapid progress in Northern Africa.—[*American Jour. of Science and Arts.*

The Boston *Transcript* says, the following by Oliver W. Holmes, is the finest simile ever written: "The mind of a bigot is like the pupil of the eye; the more light you throw upon it, the more it contracts."

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ORIGINAL AND ECLECTIC.

ARTICLE IX.

A Lecture upon Hemorrhoidal Affections. By L. A. DUGAS, M.D., Professor of Surgery in the Medical College of Georgia.—Taken down by J. F. B., medical student.

GENTLEMEN:

I will direct your attention to-day to the subject of Hemorrhoids, commonly called the Piles. And in order that you may understand the anatomical relations of the parts implicated, I have brought before you these very handsome models of dissections of the rectum, exhibiting its blood-vessels, nerves, muscles, &c. It is not my intention to enter upon a minute description of these structures, but I merely desire that you may keep your eye upon these models, in order that you may understand more readily what I have to say upon the disease under consideration.

Hemorrhoidal affections show themselves in different forms. In some the disease consists essentially in a varicose condition of the hemorrhoidal veins, with or without a similar amplification of the capillaries and arterial radicles, and is entirely confined to parts above the verge of the anus. This, therefore, constitutes what is commonly called *internal* Piles, in contradistinction of another variety called *external* Piles, in which, as the term indicates, there are external manifestations of the disease in the form of one or more small globular tumors of a deep red or bluish hue, situated at the verge of the anus. These two

forms of the disease are attended with a very considerable degree of vascularity in the mucous membrane of the lower end of the rectum, and, not unfrequently, with a relaxation of this membrane, more or less marked, which may in some cases allow it to protrude during the expulsory efforts of defecation.

The hemorrhoidal tumors to which we have referred, may be formed either by an extraordinary dilatation of the veins, or, what is more common, by an exudation of blood into the subcutaneous cellular tissue. If the opening from which the blood has issued be sufficiently free, the blood contained in the little sac or tumor may remain fluid; but if, on the contrary, the blood has been derived from mere capillaries, it may coagulate. Hence it is that, upon opening these tumors, we sometimes find them filled with a coagulum, whereas in other instances nothing issues but liquid blood. It is thus, also, that we may account for the fact that while in some cases these tumors may be dissipated by pressure, in others they do not diminish in size by this means. When the extravasated blood has become thus coagulated, it operates somewhat like a foreign body, and provokes more or less inflammatory action of a very painful character. In general, however, after the painful stage of the disease, occasioned by the distention of the tissues, has ceased, the coagulum dissolves and is gradually removed by absorption, with the exception of small fibrinous concretions, which remain in the form of slight indurations, sometimes projecting beyond the general level of the parts These little indurated teats will sometimes become chafed and exquisitely sensitive, giving the patient a great deal of annoyance long after the subsidence of the acute symptoms.

You have all heard of persons said to be affected with *blind* Piles, and others with *bleeding* Piles. The term blind Piles is applied simply to those hemorrhoidal affections which do not bleed—whereas the bleeding Piles are those in which the congested blood-vessels relieve themselves by an issue of blood during defecation, and occasionally at other times. Now this issue of blood usually occurs from the mucous membrane just *within* the sphincters, although it may sometimes flow from the verge of the anus. When it occurs during defecation, it is manifestly induced by the expulsory efforts, which very materially increase the turgescence of the mucous surface. It

is therefore important, in such cases, that these efforts be not prolonged unnecessarily, in order that the hemorrhage may not be excessive, and by its daily repetition seriously impair the patient's health, as is too often the case. In the cases in which the bleeding does not coincide with defecation, it is most apt to take place when the patient is standing or walking, and consequently when the vessels are exposed to the gravitating influence of the superimposed column of blood. It will therefore very rarely occur when the patient is in the horizontal position. In some very rare instances the hemorrhage proceeds from *above* the sphincter ani, and may accumulate in the rectum until it produces a desire to stool, when the patient may pass off a large quantity of blood in a state of semi-coagulation. And this may be repeated at intervals so short as to become alarming. I have seen two cases of the kind which proved very troublesome. In general, however, the flow of blood shows itself externally, and it may sometimes be felt trickling down the thighs of the patient as he walks along.

Hemorrhoidal affections are often complicated with prolapsus ani, or a disposition on the part of the lower end of the rectum to protrude during defecation, or whenever the patient remains long in the erect position. This adds very much to the annoyance of the disease, as well as to the difficulty of its management.

I have now given you the leading features of this disease, and you may perhaps expect me to say something of its causes, or rather of its *remote* causes. I may as well tell you at once that I do not know them; and yet, hemorrhoidal affections are supposed by some to be induced by hepatic disease obstructing the portal circulation, and consequently inducing a congestion of the veins constituting the origin of the vena portarum. We are not told, however, by the advocates of this theory, why it is that the blood-vessels of the rectum suffer more under such circumstances than those of the other portions of the alimentary canal. Moreover, we know that a very large majority of those affected with hemorrhoids furnish us no evidence whatever of hepatic derangement. Hemorrhoidal affections are also attributed to constipation and to sedentary habits; whereas every practitioner of observation is aware that they very often occur in

persons whose bowels are perfectly regular—that they not unfrequently occur during a relaxed condition of the bowels, and that they affect the active as well as the sedentary. The fact is, Gentlemen, that this is a very common disease, at least in this part of the world; and I do not think it an exaggeration to say that eight persons out of ten, between the ages of twenty-five and fifty, suffer more or less with this infirmity. I should have said *white* persons; for it is a remarkable fact, that our negroes are so rarely affected with this disease that I do not recollect to have seen more than two or three of them suffering with it, in a practice of five and twenty years, although one half of our population consists of this class of people. Whether this exemption of the negro race can be traced to any anatomical peculiarity or not would be a subject of interesting inquiry.

You must have observed, that I restricted the liability to this disease to the period of life extending from the twenty-fifth to the fiftieth year. I did so, because it very rarely shows itself before twenty-five years of age, and that it usually declines and ceases to be troublesome at about fifty years of age. We know, that with the advance of age the rectum, and especially its lower extremity, diminishes in capacity and in relaxation, often to such a degree as to render the act of defecation more or less difficult, and even to make it a source of real annoyance to the very aged. This species of atrophy may perhaps account for the cessation of hemorrhoidal troubles with advancing age.

With regard to the treatment of this disease you will find quite a diversity of opinion in the profession, and no lack of specifics in the newspapers of the day. I need not detain you with a critical appreciation of the various plans suggested, but will at once proceed to give you the course I usually pursue in the management of these affections. This must necessarily vary according to the circumstances of the case. At the commencement of the disease, it usually shows itself in the form of attacks more or less acute, which, after having continued a few weeks, will gradually subside, leaving the patient under the impression that he is cured, and will not have any return of the affection. It is then that he is willing to certify to the efficacy of the last remedy used, especially if he has procured it from a Charlatan

or nostrum vender. But the occurrence of one attack is almost invariably the precursor of others, after the lapse of months or even years. A knowledge of this fact should make you exceedingly cautious in your prognosis, and you will always be on the safe side if you will honestly state to your patient that although you may relieve him, you cannot promise a radical cure, or an immunity from subsequent attacks, unless the patient be near the age at which the disease will probably cease spontaneously.

These acute attacks are generally attended with the formation of one or more hemorrhoidal tumors at the verge of the anus, intensely painful during the act of defecation. The pain continues after defecation, and the patient complains of a sense of burning and throbbing in the part affected, which is increased by the erect position, but may even continue to annoy him when in bed, to such a degree as to prevent any quiet sleep during the night. We have here the usual manifestations of inflammatory action, set up by the effusion of blood in the subcutaneous cellular tissue and the influence of distension. It is under such circumstances that we find the patients resorting to the various pile ointments heralded by the newspapers, or using some similar application under the direction of their medical adviser. These ointments usually consist of a combination, in various proportions, of opium or some of its preparations, with finely pulverized gall-nuts or other vegetable astringents and sugar of lead or alum, rubbed up with lard or simple cerate. I must confess that I have never derived any advantage from these applications, and that I believe that the popular error in regard to their efficacy is the result, as already intimated, of their use at the period at which the disease is about to subside of itself. The same may be said of the use of rhubarb lozenges, sulphur, cream of tartar, and other remedies in popular favor. During the intensity of the disease the application of leeches is highly recommended by some, and may afford temporary relief, but the leech bites will sometimes rather increase than lessen the pain. I am in the habit of directing, in such cases, that the patient shall remain in bed—that the bowels be emptied by a full dose of rhubarb, and then kept quiet for several days by the use of small doses of opium. The preference is given to rhu-

barb over other cathartics, and especially over *saline* cathartics, because the discharges it occasions are less excoriating. Under the effects of a dose of salts the dejections are as painful as though the patient were passing boiling water over the affected part. Poultices of corn-meal, or of bread and milk, should be kept constantly applied to the anus, either hot or cold, according to the preference of the patient. It is somewhat singular, that while some patients derive most relief from *hot* applications, others, on the contrary, find them intolerable and are materially benefitted by the *cold*. Certain poultices are supposed by some to be peculiarly beneficial, and I have known cases relieved by the application of the leaves of plantain, rue, or wormwood, bruised in the form of a poultice, after other applications had failed. Poultices made with infusion of red oak bark will also be found sometimes advantageous in the latter stages of the attack. If there be any protrusion of the intestine, this should be anointed with a little sweet oil, or sperm oil, (which is less apt to be rancid,) and gently forced up by the patient with his fingers as often as it may occur. This process, which is sometimes very painful, will be very much facilitated if the patient will place himself upon his knees and breast so that his pelvis may be elevated and allow the rectum to gravitate towards the abdomen. I have already advised that the bowels be kept quiet after having been emptied, but when this is no longer compatible with the comfort of the patient, the rectum may be washed out with cold water; or, if he cannot tolerate the introduction of the canula, he should take a smaller and merely laxative dose of rhubarb, to be followed, as before, by the opiates. My object, you perceive, is to avoid as much as possible the disturbing and irritating influence of defecation. The patient should therefore use animal food, which leaves less fecal matter than vegetable substances. Under these directions the attack will usually run its course with as little suffering as possible; but you will now and then find cases in which the unmitigated pain may warrant a trial of other means, such as sitting over boiling water, or steam generated by pouring water upon a hot brick. This will sometimes give considerable relief, and may be repeated as often as the patient's inclination may direct. I have sometimes known the so-called "Pain-killers" to act advantageously in

subduing the morbid sensibility of the parts. These nostrums, you know, consist of a concentrated tincture of capsicum and morphine, or of capsicum and morphine mixed with lard. The liquid is the better preparation of the two. When applied, it occasions intense smarting for a-while, which gradually subsides and may leave the patient considerably relieved.

In the acute attacks, attended with bleeding, there may or not be any protruding tumors, and the hemorrhage usually proceeds from the mucous surface above the verge of the anus. In these cases the act of defecation is more or less painful, and there is a disposition on the part of the patient to make strong expulsory efforts, not unlike those provoked by a mild attack of dysentery. And it is then that the blood issues either in a distinct jet or stream, which will cease with the act of defecation. The lower end of the rectum and the verge of the anus may become very sore, as though chafed by the contact of the feces.

In treating acute attacks of this kind, I would adopt the same plan as above indicated, with the exception of the poultices, in lieu of which I would advise ablutions with cold water, or sitting a few minutes in cold water three or four times each day.

We now come to the consideration of the treatment of the disease when chronic, and of the rules to be observed between the acute attacks. In the first place, let the patient be fully impressed with the importance of keeping his bowels perfectly regular, that is to say, of having one stool every day: nothing will conduce more to bring about this state of things than the observance of a stated hour at which he will invariably go to stool, whether he feels any desire to do so or not. If he finds that he cannot have an evacuation naturally, or that he is compelled to make strong expulsory efforts to accomplish his purpose, he should throw up a small quantity of cold water into the rectum, ten or fifteen minutes before the appointed hour. By so doing, he will find that the bowels will gradually acquire the desired habit of punctuality. The patient should bear in mind that nothing is more injurious to those subject to Piles, than long sitting and protracted efforts at stool. He should therefore not remain more than a few minutes, and make but slight expulsory efforts, and if he cannot thus promptly and readily empty the rectum, he should desist and wait until the next day,

being careful not to allow this to interfere with his regularly appointed hours.

The selection of the hour is not a matter of indifference, for if this be fixed in the early part of the day the injurious effects of defecation will continue to be felt, or even become aggravated by the erect position and exercise during the remainder of the day. If, on the contrary, this act be performed at night, or just before retiring to bed, the horizontal position will favor the subsidence of the congestion, and the restoration of the parts to their normal condition. Without a due observance of these little matters of detail, especially in cases attended with a disposition to protrusion, all your other directions will often fail to give relief. Again, the patient should use cold water ablutions on rising from bed, and on retiring at night; and if the case be troublesome, this should also be done at noon, especially during the summer.

You will sometimes be consulted for cases of long standing, in which the protrusion of hemorrhoidal tumors or of folds of the intestine will have become almost habitual, at least when the patient is in the erect position. In these cases, if the patient is compelled to attend to his business, it may become necessary to resort to mechanical means of support. The patient should wear during the day, and sometimes even during the night, an anal supporter, which may be made as follows:—Let a belt be carried around the body so as to rest upon the hips, and buckle in front; attach to the back part of this, a strap, which is to pass down to the perineum and here bifurcate, so that one end will pass on each side of the scrotum, and be buckled to the belt in front. To that portion of the perineal strap which corresponds to the anus, the anal supporter should be fixed. This may consist of a ball of cotton thread about an inch and a half in diameter, and covered with oiled silk for the purpose of cleanliness; or it may be made of wood, well polished, and of the shape of a half globe, the convexity being towards the anus. This may be oiled and easily kept clean. By applying this bandage with sufficient firmness, the patient may attend to his business with very little inconvenience, until the means above recommended shall have had time to improve the condition of the parts.

You perceive, Gentlemen, that I have thus far recommended

no surgical operation in the management of these affections; but you will recollect that I have repeatedly endeavored to inculcate the doctrine that the duty of the surgeon is not so much to perform operations as it is to avoid their necessity. And yet there are several surgical procedures recommended in the different stages of this affection. For instance, it is advised by some to lay open, to excise, or to ligate the hemorrhoidal tumors. I have never had occasion to resort to either of these expedients, except in those cases in which small indurated teats continue to fret the patient. I then clip them off with a pair of scissors. The use of ligatures is unjustifiable in any event, as being more painful and hazardous than cutting instruments. You will find it recommended by high authorities to excise the protruding portion of the mucous membrane, or to apply to these, concentrated nitric acid, and even to destroy them with the actual cautery. While these practices may perhaps be justifiable in hospital practice, where the hygienic observances I have advised cannot be enforced, I have never been compelled to have recourse to them, nor do I think it probable that you will be less fortunate, if you should think proper to adopt my views.

ARTICLE X.

Remarks on the Uses of Chlorate of Potash. By W. L. FELDER, M. D., of Augusta, Ga.

[We are much pleased to find that the casual reference to our friend's name, in connection with the above subject, in our last number, has resulted in so valuable a report of his personal experience in the therapeutical applications of Chlorate of Potash. We may really feel encouraged to try the same device on some other occasion.—EDTS.]

MESSRS. EDITORS—In your issue of the March number of the Southern Medical and Surgical Journal, I find my name mentioned in connection with an article, or a few remarks of yours, upon the subject and use of the Chlorate of Potash. I do not complain of your having done so, but if I had known of your intentions, or had thought for a moment that you were

acquainted with the fact of my having long since used the medicine, I would certainly have given you all the information in my power upon the subject of its use, and my experience with the remedy, and thus have saved the necessity of intruding myself upon your notice, or of appearing upon the pages of your Journal. In as much, however, as you have thought proper (from some source of information, which I can readily imagine) to advert to my use of the article in a limited and imperfect manner, I would beg leave to exercise the privilege of being correctly reported, as to the quantity used and the diseases for which I have administered it.

Chlorate of Potash has long since been a favorite remedy with me in the treatment of almost every form of fever, and especially in those periodical fevers denominated remittent, or, as they are called in some places, "Country fevers" or "Santee fevers."

My attention was drawn to the remedy, *specially*, in August, I think, eighteen hundred and thirty-two, in the case of a youth, then, by the name of G***** L**, who was under treatment for remittent fever by Dr. H. I was requested to visit the patient with the attending physician. I thought that the Chlorate of Potash would admirably suit the case, and fill all the purposes *then* indicated; accordingly, I gave it in the following manner:—℞. Chlorate of Potash, 2 drachms; Infusion of Serpentaria Virginiana, 8 ounces. Of this, a tablespoonful was given every two or three hours, until its discontinuance should be ordered. It had a fine effect, and in three or four days he was in a situation to take quinine and brandy also, and he speedily recovered. I have used it also in typhoid fevers, (symptomatic, for I do not believe in the idiopathic forms of typhoid,) with the finest results, and believe that under some circumstances, it constitutes in the list of remedial agents one of the very best remedies, and exerts an influence in low forms of fever that no other remedy possesses.

In these low forms of fever it is used as recommended above, although I find it necessary sometimes to combine with it a little tinct. opii. acetat. The dose for an adult is a tablespoonful every two or three hours: less to younger persons—about the quantity you represent in your article at my hands.

I have used the remedy repeatedly in Scarlet fever, and espe-

cially in the malignant forms, both internally and as a gargle for the ulcers about the mouth and throat. I consider its use important, however, in any of the varieties of Scarlet fever, and when properly administered, will produce its full share of benefit. It is used as above advised in these affections, when taken internally; but when used as a gargle, I make it much stronger, and use it with Sage tea, if convenient, in preference to the Snake-root tea,—it is a matter of very little consequence, however, whether used with either—a little cold water will answer every purpose to dissolve it. As a cleanser of ulcers, especially after the use of the Nit. silver, it has no superior. From three to four drachms of the potash with eight ounces of pure water, or with either of the teas, is the usual strength in which I have used it. I would not hesitate, however, to use it much stronger, either externally or internally. I have applied it to indolent ulcers of the legs, and in one instance to a chronic ulcer of long standing, with much benefit, in the form of powder. I have likewise used it in obstinate cases of salivation from mercury with decided benefit, and in one case, especially, that seemed to baffle every other remedy, and threaten the life ef a very interesting child, who had been worse salivated than I ever saw one, before or since; it relieved and healed the ulcers kindly, and I believe was the only remedy, out of many, that saved her life. The case, however, resulted in very great deformity, and has been a source of great unhappiness to the individual who administered the calomel. He was unacquainted with the action of mercury and "did not know that it would make the mouth sore, much less produce sloughing," and thereby permanently entail miserable deformity.

In the various vaginal irritations and ulcerations of the os and cervix uteri, it will exert a very happy influence, and may be relied upon, if perseveringly used, in counteracting leucorrhœal discharges produced from irritations, and very often heal such ulcers promptly.

In a case of ulceration of the os and cervix, in which I tried it for a very long time in this city, its effects were accompanied with results highly flattering, and the patient seemed to be rapidly recovering, until neglect of her person, growing out of the fact that she was not able to have the care and attention that

such cases require, and consequently the local affection became aggravated, her constitution failed, and the case terminated in death. I was not in attendance at the time of her death, nor had I been for many months previously, consequently can say nothing upon the subject of her condition at the time of her death.

I have said all that I conceive to be prudent and *proper* in an article of this sort; however, I could mention much more concerning its effects in that scorbutic or spongy condition of the gums, accompanied with hemorrhage, in typhoid fever.

I am now treating a child with ulcerous sore mouth, with this salt of potash, and as soon as I satisfy myself fully of its use in gangrenous ulcerations about the mouth as well as the aphthous conditions not only of the mouth, but extending to the pharynx and along the œsophagus to the stomach and bowels, I may trouble you at some future time, with a publication setting forth my views of the utility of this salt in the two last mentioned conditions, &c.

By reference to an article of mine upon Yellow fever, published in the Southern Medical and Surgical Journal, for 1855, October number, the use of Chlorate of Potash in the treatment of that disease will be seen.

ARTICLE XI.

Poisoning by Phytolaccæ Radix (Poke Root)—*four cases.* Reported by W. C. MUSGROVE, M.D., of Midville, Ga.

MESSRS. EDITORS,—I have been intending, for some time, to write an article for the Journal, but want of time has been the chief cause of delay in my so doing; and, even now, I shall wish it considered a "resumé" of my practice for the month of January—a *generality* rather than a *speciality.*

The month of January has been a peculiar one with us—spring-like—very wet, and but few cold days. By reference to my weather register, we have had—

Rain,	Cloudy,	Fair,	Variable,
7 days.	11 days.	11 days.	2 days.

The diseases usual to the season have been wanting: it is true, we have had catarrhs, but as yet I have seen but three cases of pneumonia, two of which were typhoid. The cases which have been under treatment for the month, may be classified thus:—

Apoplexy	1	Chronic Gastritis	1
General Nervous Irritability	1	Delivery of Placenta	2
Miscarriage (3 months)	1	Puerperal Fever	1
Midwifery	7	Dysmenorrhœa	1
Do. Twins, (male and female)	1	Asthma	1
Reducing Luxation Humerus	1	Convulsions	1
Erysipelas	1	Congestion of the Brain	1
Typhoid Fever	1	Phytolaccæ Radix, Poisoning by	3
Pneumonia	3	Fracture Right Ramus of Pubis	1

The detail of some of these cases would be not altogether uninteresting. I send you now, however, only the case of poisoning by the Phytolaccæ Radix (Poke Root):

January 30. Visited four negro children, belonging to Mr. J. S. J.; found three of them extended on a blanket before the fire, almost cold and pulseless, narcotized, the pupil contracted; the muscles greatly relaxed, as in a very drunken man; the breathing slow, and scarcely any motion in respiration perceptible. About 1 o'clock, P.M., the little negroes were taken with vomiting, which continued, at intervals, until I saw them, at 6 P.M. They were aged 10 years, 8 years, 4 years, and 15 months. The eldest was relieved by the emesis, and the youngest was severely *hypercatharsized.*

Prescription.—Boiled milk, *cold*, in small quantities; as soon as the stomach was quieted to give a dose of oil and turpentine, and stimulate with beef-broth and brandy. Rubbing the cold surfaces with dry mustard, and if re-action was not induced, to use spts. turpentine, mustard cataplasm for the youngest, and carb. ammonia.

January 31. Found 10, 8 and 4, convalescing finely, but the 15 months child sinking—dying about 10 A.M.

The children had been eating the Poke Root, mistaking it for the Artichoke. There was no convulsive action in these cases.

[As the Poke Root is an abundant product of our Southern States, and the liability to poisoning by it very great, we regard Dr. Musgrove's brief report as quite important to practitioners in these regions.—EDTS.]

Clinical Lecture on Influenza. By W. T. GAIRDNER, M. D. Physician to the Royal Infirmary, and Lecturer on Clinical Medicine, Edinburgh.

I invite your attention to-day to a subject of great importance, and very directly suggested, not perhaps by any one case now in the wards, but by a combination of circumstances which you have witnessed during the last fortnight. It is to the prevalence of certain diseases in our hospital wards, which, taken collectively, amount to the proof of an epidemic morbid tendency; that is to say, which show, by the extent and manner of their diffusion, the existence of a morbid influence operating temporarily upon the population at large. I cannot, indeed, show you in the wards a single typical case of this epidemic disorder, as it is seen so frequently outside, unless it be that of the woman just admitted into the fever ward. But, although I cannot place before you the ordinary forms of the epidemic (because these are commonly too mild to be admitted into hospital,) I can show you its accidents and complications in sufficient number to furnish a text for some remarks on its nature and prevalence.

You may recollect that, at the beginning of the month, we had very few acute cases of disease, though there were many interesting chronic cases, chiefly of abdominal affections, and almost all of organic diseases. The few acute cases that we had were fevers, and these almost all of one kind, viz., enteric typhus, about which I may have more to say at another time. Now, on the other hand, the wards are crowded with more or less acute cases of disease; and most of these diseases are of the chest. Let me enumerate a few of them.

There is the case of the woman already noticed as having been admitted to the fever ward. She is a healthy-looking young woman, who has been occupied as a domestic servant. She was seized, a few days ago, with shivering, succeeded by headache, pains in the limbs, sickness. Along with these there was a certain amount of catarrh, which has now settled (not very severely however) upon the chest. The fever is now intense, and very much out of proportion to the severity of the catarrh. Headache persists, the skin is hot, the tongue loaded, the color dingy, and the general aspect of the patient certainly goes far to justify her being sent to a fever ward. Nevertheless, I believe it will turn out not to be a case of fever, in the ordinary acceptation of the term; but of the current epidemic—which I will take the liberty of calling, if it has not already been called—*Influenza.*

Had this been the first case of influenza presented to my notice, it might have passed for one of continued fever or typhus. But even then I should have remarked its singularly abrupt invasion,

the great amount of prostration in this early stage, the extreme severity of the headache and articular pains, as being rather out of character in any fever to which we have lately been accustomed. Knowing what I do of other cases, I have no doubt these symptoms are owing to influenza. The only question is, whether this woman may have influenza and fever combined. This question must remain open for the present.

Now, by considering this case of catarrhal fever, or of feverish cold (if you like to call it so,) in relation with the other facts to which I shall allude presently, you will draw for yourselves the picture of the epidemic, as we have it.

The first indication we had of anything out of the usual course was, perhaps, that downward tendency of several of our cases of phthisis, which, you will recollect, I remarked to you more than a fortnight ago. It does not always happen that cases of phthisis are the first to show a tendency to influenza, and in this instance, it may have been a coincidence; but it is a curious coincidence, that, when we had picked out four cases of phthisis as fit subjects for trying the new remedies—the hypophosphites of lime and soda—and had noted them carefully for that object, three out of the four should have been seized with acute symptoms, within a short period of our commencing the novel treatment. I told you at the time, that I had no reason to blame the remedy for this result, and that it was probably a mere coincidence; I am now disposed to believe that it was one of the first manifestations of the morbid influence of which we have since seen so much.

[Two of these patients have since died; one went out relieved; another survives, considerably enfeebled, but without acute symptoms.]

On the 11th of November, we saw together a case in the female general ward, of very old-standing chest disease, apparently emphysema of the lungs, in which acute symptoms had supervened, and the patient appared to be in extreme danger from respiratory oppression, with feverishness and bronchitis. Under a very simple treatment, this woman is now improving; but her case is, no doubt, one of the epidemic in a debilitated subject.

Shortly before this case was admitted, a boy was brought to the waiting-room screaming with pain, which he referred to his left side. He was also very feverish. He had not much catarrh, but auscultation left us in no doubt that there was a degree of dry pleurisy on the left side, and also a friction sound, not so well marked, over the pericardium. Under moderate leeching and opiates, he was soon convalescent; but the respiratory friction sound continued loud and characteristic, and we have detained him in the ward mainly for your benefit. I had some doubts, at first, whether this boy had not suffered perforation of the lung; but it was not so. I do not say it was a well-marked case of influenza, but I mention it by the way.

The next case was that of a boy from the Industrial School, who had gone through a distinct attack of feverish catarrh before we saw him. The traces remained in the form of bronchitis of the smaller tubes, or rather, I suspect, a tubercular condition of the lung, with bronchitic signs. This boy has probably had an unsound chest for some time. He is better, however; indeed nearly well.

About this time, I thought it right to pay a visit to the Industrial School, as I had seen several cases of feverish disorders from thence, which the head-master sent up for my inspection. I found thirteen or fourteen boys smartly ill with cold of the head or chest, and several of them plainly very feverish. Coughs resounded on every side; and squill mixture, with paregoric and ipecacuanha, were greatly in demand. None of the cases were, however, dangerous.

On November 14th, I directed your attention to a very acute case of bronchitis, or broncho-pneumonia, admitted two days before. The fever was very intense on admission, but had quite subsided, before you saw the patient, under the treatment by considerable doses of tartar emetic, employed by Dr. Yellowlees from the commencement. The patient, a young girl of seemingly sound constitution, recovered rapidly—the large doses of tartar emetic being replaced by a simple cough mixture, with small doses of antimonial wine, after the lapse of about 48 hours; as soon, indeed, as the fever shows signs of retreating. No other medicine was required in this case.

Very different was the result of treatment, or rather of the neglect of treatment, in another case in the same ward. A young woman, the mother of a family, was seized with acute bronchitis, and lay many days neglected. She was then seen by Dr. Watson, who after blistering the chest and administering some internal remedies, sent her into the hospital. In this case, seen by us only at an advanced stage, the fever had assumed a hectic character. Occasional flushes overspread the face; there was marked dyspnœa and lividity; sweating was very severe every night, and sometimes in the day; and prostration very considerable. She has since had acidulous drinks, antispasmodics and opiates, and is better; but her convalescence is very slow, fever is not subdued, and I greatly fear that the seeds of tubercular disease have been laid in this case. She flushes whenever she is spoken to, and is very nervous. [This patient was lately dismissed, as she felt it necessary to go home to her family; but she is very unfit for household duties, and will probably be so for some time.]

Two other cases of chronic catarrh, with acute exacerbation, were admitted into the male ward, and were seen by you on November 18th. Both of these were street-porters, and men above 60 years of age—by no means temperate in their habits. I will not, however, dwell upon them.

The same day, November 18th, brought under your notice, for the first time, two extremely interesting cases of acute disease, having the imprint of the epidemic tendency.

One of these was a case of acute pneumonia, or pleuro-pneumonia, in a previously healthy man of 28 years of age. The disease had run a course of many days previous to admission, having begun in symptoms altogether like simple influenza, succeeded, at the end of a week, by pain in the right side of the chest and difficulty of breathing, with shivering fits. We found the whole lower lobe on the right side more or less consolidated, the sputum rusty, and the fever considerable. The night of admission, before treatment had been well begun, pain occurred on the opposite (left) side, at the lower part; and this aggravation was attended with a pulse of nearly 140 in the minute, at one period, and with respirations between 50 and 60 in the minute. So soon, however, as the tartar emetic began to take effect, these symptoms subsided; and next day we noticed the pulse at 78, and the respirations at 32, the skin cool and moist, and the general state quite satisfactory; though a certain amount of dull percussion, with some consonating râle, existed at the lower part of the left lung, and the physical signs on the right side were unchanged. In another day, the line of dull percussion in the right lateral region was lower by an inch and three quarters, and from this period the convalescence may be said to have begun. The operation of the grain-doses of tartar emetic here was most prompt and satisfactory; and as the fever and dyspnœa have entirely subsided, the pulse being 72 and the respirations 26 in the minute, I am of opinion that we may now suspend the remedy, and leave the cure to be completed by nature. [The convalescence was uninterrupted. The patient left on 2d December, perfectly well.]

The other case which we saw for the first time on the 18th, was that of a woman in the fever ward. This patient, a domestic servant, aged 28, of rather corpulent habit, always enjoyed good health till a fortnight ago. At that time she was seized with pains in the head, back, and limbs, with a feeling of lassitude and exhaustion, which confined her to bed for three or four days; but at the end of that time she was somewhat better, and tried to resume her ordinary work—to very little purpose, as in a day or two more she took to bed again, and has been feverish ever since.

I believe that this case is one of enteric typhus, or typhoid fever as it is often called. I make this diagnosis, however, chiefly on the ground that certain rose-colored spots, which you saw me mark on the skin yesterday, bear a strong resemblance to the characteristic eruption of that fever. Should these spots continue to appear, we shall feel sure of our diagnosis; although there is at present *not a trace of abdominal complication, and all the more prominent symptoms are thoracic*, so that there is little doubt

the epidemic tendency is showing itself strongly in this woman. There are, in fact, the following very formidable symptoms:—great acceleration of the respiration; dingy lividity of countenance, with flushed cheeks; small and very frequent pulse; considerable pain in the chest, not localized; some delirium; and I have little doubt that some peculiar form of broncho-pneumonia is present, as there is a scanty sputum, deeply tinged with purple blood, and we find, on examination, limited dullness on percussion, together with consonating respiration and râle in both backs, at the lower part of the lungs. It is easy to see in this case enteric fever, complicated with influenza, and with very serious, though ill-defined, acute diseases of the lungs—a very ominous conjunction, and all the more so as the debility of the patient forbids the employment of active remedies, and we must confine the treatment to regulated stimulation. I must say, that the state of this woman appears to me perilous in the extreme.

[The sequel of this case justified our fears. On the 21st she was visited, on account of my unavoidable absence from town, by Dr. W. Begbie, who marked out additional rose-spots, thus removing all doubts as to the diagnosis. The chest symptoms, however, still predominated; there had only been one stool, and that a natural one, since admission; and there was no pain or tenderness of the abdomen to any appreciable extent. On the night of the 21st a very loose stool was passed containing blood. Another followed next day, and another the succeeding night, the blood being in large quantity, notwithstanding the application of ice to the abdomen, and the administration of acetate of lead, with opium, internally. On the 23d, at visit, she was manifestly sinking. She had been very restless and delirious, and had three other stools, largely composed of blood. The tongue was dry and brown, and the pulse almost imperceptible. There was no additional embarrassment of breathing, and I did not examine the back; but over the right front there was marked dulness on percussion, with feeble tubular respiration and consonating râle. She died on the morning of the 24th.

Post-mortem examination showed numerous enlarged and congested patches of Peyer in the ileum, in a state of ulceration and sloughing; with enlarged, congested and softened mesenteric glands. The lungs were in an extremely curious and almost indescribable condition; the right lung almost entirely devoid of air, flaccid, evidently collapsed, but showing throughout, on section, much congestion, and here and there patches of hæmorrhagic condensation; the bronchi loaded with mucus deeply stained with blood. In the left lung there was a good deal of collapse at the base and root; but on the whole, not much disease. In neither lung was there anything like ordinary hepatization, and the pleuræ were quite smooth, and free from exudation. The spleen, as usual, was large and soft.

It is worth noticing, that the nurse of the ward, a most careful and attentive person, was under the impression that this patient was menstruating two or three days before death, and that the patient herself had a similar impression. The examination of the uterus and ovaries showed that this impression was erroneous. The mucous membrane was pale throughout; a gelatinous mass of mucus occupied the cervix uteri, and there was no recent corpus luteum. It is evident that the stains of blood from the bowels had led to a mistake in this particular.]

The only other case worth mentioning in illustration of the epidemic tendency, is that of a little girl, admitted on the 19th, as she had been several times before, on account of disease of the heart. She has, I think, a contracted mitral orifice; and with this there is associated, at present, a great deal of lividity, with feverishness, and marked prostration of strength; the consequences, no doubt, of influenza acting upon organs predisposed to disease. I should think badly of this case if I had not seen it before; but this girl has repeatedly got over attacks considerably worse than the present in a very short time. She had all that elasticity of constitution which appears to be the exclusive endowment of youth; and she is in every respect a very good and hopeful little patient. [She recovered in a few days.]

Let me now review these facts. Here, within the space of less than a fortnight, you have seen admitted into our wards (with an average population under 40) no fewer than 11 cases of febrile disease, associated with pulmonary symptoms of one kind or other. Most of these, no doubt, were complicated cases, and only one of them could be called simple influenza. But this is because simple influenza is usually too rapid and too mild a disease to be admitted to an hospital. We see here, not the disease, but the consequences and complications of the disease. In private and in dispensary practice we see the disease itself.

[Of these 11 cases of chest affection,

1 was double pleuro-pneumonia;
1 was pleurisy and pericarditis;
2 were very acute bronchitis, or broncho-pneumonia, in one with a probable tubercular complication;
1 was sub-acute bronchitis, certainly with tubercular antecedents;
3 were sub-acute bronchitis, supervening an old emphysema of the lungs;
1 was sub-acute bronchitis, supervening upon old valvular disease of the heart;
1 was enteric typhus, with very acute pulmonary complication; and
1 was influenza, pure and simple.]

While we have been watching these cases together, I have

seen many and heard of many more, cases of the simple and ordinary form of the disease. Not a few of yourselves have had it, and two or three have been seriously ill. Most of the cases that I have seen, however, have been remarkable for the sharpness and suddenness of the attack, and not less so for the rapidity of the passage from a state of feverish prostration to convalescence. I have found a man with a pulse of 130 at night and next day he has been up and about. This, of course, only happens with sound constitutions. In one or two instances, it has appeared to me that an emetic, given in time, has anticipated or cut short the attack. Certainly it has been followed by great relief. For the rest, the bed, or, in mild cases, the sofa, restricted diet, laxatives where required, and liberal doses of opium where there is much restlessness and exhaustion, seem to me to comprise all the necessary treatment of ordinary cases of influenza, even when severe. In the complicated cases no rule can be laid down. Some are very amenable to remedies, others run their course in spite of treatment. You have seen illustrations of both kinds in these wards.

The most characteristic symptoms of influenza are intense feverishness, usually with great tendency to chilliness or shivering, until the patient takes to bed, and reaction is fairly established. Then, come racking headache, with pains in the back and limbs, which sometimes constitute the principal source of suffering; extreme sensation of debility; total prostration of appetite, with less of thirst than is usual in fever; and with these, coryza or mild catarrh, bronchitis, broncho-pneumonia, as the case may be. But though catarrh is frequent, and may be severe, the disease is essentially a fever, not a catarrh. Nay, the catarrh may be absent, or insignificant; not infrequently it is so. In one of the cases I saw among yourselves, there was absolutely no catarrh; in another it was very slight. And I saw two very curious cases a few days since, which enable me to put this point yet more strongly. The catarrh may, in fact, be absent in the very case in which you would *a priori*, expect its occurrence. A gentleman, who has been long afflicted with spasmodic asthma, with intervals, however, of fair good health, and with no appreciable organic disease of the chest, came to me after he had been struggling for several days with debility and prostration, with chilliness and feverish sensations. These were with him the only manifestations of influenza. [He afterward, at an interval of ten days, had a slight cold in the head, without fever; in the meantime his whole family sickened with feverish colds, some of them with chest affection, from which he himself remained exempt throughout.] In another case, a gentleman, who also suffers from habitual asthma and bronchitis, and in whom I suspect a morbidly enfeebled heart, sent for me in a great hurry on account

of the alarming prostration, produced by this strange and inexplicable "influence." He was, however, more frightened than hurt; in a couple of days he was convalescent, and the amount of bronchitis in his case never gave me the slightest uneasiness.

Even the complications in influenza are not always of a catarrhal kind, nor even confined to the chest. Ten years ago, in connection with a great and general epidemic of influenza, I witnessed in this hospital a succession of cases such as I have never seen since that time. In the course of a few weeks there occurred, I forget exactly how many, but upward of half a dozen cases of inflammation of all the great serous membranes conjointly—double pleurisy, pericarditis, peritonitis. Most of them were fatal; indeed, they seemed to come into the house only to die; so rapid, so incontrollable were the symptoms, that no time was given for the application of remedies, even had remedies been clearly indicated.

It is somewhat remarkable, that the great epidemic influenza of 1847–8 began at the same time of the year with the present one, almost to a week. You will find an account of it in the excellent monography of Dr. Peacock, of London.* That epidemic however, came upon a population wasted by typhus and other forms of fever, and not yet recovered from the famine and destitution caused by the blight of the potato, and the high price of grain in 1845–6. Scurvy, dysentery, and fever, preceded the influenza on that occasion, and cholera followed not very long after. Notwithstanding the recent money-crisis, and the distress likely to follow among certain classes of the working population, we may hope that we are at present more favorably situated than we were ten years ago. A short time will show whether the present epidemic is to bear comparison with the last or not. Hitherto it has been of a very mild character, comparatively speaking. I have myself seen only one fatal case—a man who had been for some time in poor health, and who died of a chest complication, not very unlike that of our case of enteric fever. I do not know, indeed, that this can fairly be called a death from influenza, though I believe influenza to have been mixed up with the fatal result.

(*From a Clinical Lecture on Friday, November* 27*th*, 1857.)

Since I spoke to you about influenza a week ago, there have been only two additions to the list of acute diseases which appear to have had their origin in it—one a case of pleuro-pneumonia, admitted only two days ago, treated both before and after admission by calomel and opium, and already in process of resolution; the other a case of genuine influenza, with all the usual symp-

* On the Influenza, or Epidemic Catarrhal Fever, of 1847–8. London, 1848.

toms, and which like the former one, was sent up to the fever ward, as lying under suspicion. I have directed her to be put in the closet, apart from the other patients; and we shall make a point of parting with her as soon as possible. So far as the wards are concerned, the epidemic does not appear to have made rapid progress this week.

I have received the Registrar-General's report of mortality in London for the week ending November 21st. It is worth while to compare the indications in this report with those derived from our own observation as regards Edinburgh. For this purpose, I have drawn up a table of those diseases whose mortality appears to be notably above the average of the season, and have calculated the existing mortality as against the corrected average of ten years. The correction I speak of is made thus:—The Registrar's table gives the mortality of each disease during the forty-seventh week of the present year, and during the corresponding week of ten previous years; from these he deduces an average, which occupies a separate column. But before you can use this average as against the number of the present year, you must in every case raise it by one tenth, to make allowance for the increase of population, which, it is calculated, increases by one tenth in five years.

Now, the past week has in London been one of unusual mortality *for the season;* seeing that the corrected average for ten years makes the total mortality of the forty-seventh week of the year 1211; while during the past week it has been 1382. This very considerable extra mortality appears to be due chiefly to bronchitis, pneumonia, and phthisis, to which may be added whooping cough. All of these are 20 or more in excess of the average mortality of the season; and bronchitis is in excess by the very large number of 123, showing a mortality much more than double the corrected average of the ten years. These four diseases together have a mortality 188 in excess of the average; while the entire excess of deaths for the week is only 171; the difference being, of course, made by diseases which are below the average, especially typhus, scarlatina, and smallpox, which have at present a low mortality. The other diseases which, though to a smaller extent, have contributed notably to raise the mortality of the past week above the corrected average, are—croup (with which I have included laryngitis,) scrofula (the disease of the young,) and apoplexy, with paralysis, the diseases of the aged; to which we may add that somewhat vague condition called atrophy (mostly infantile,) and that still more vague cause of death called age. Both of these are considerably in excess; and these with the other causes stated, go to show that the mortality of the past week in London has fallen heavily on the two extremes of life. This indeed is always the case with influenza.

But are we justified in assuming the existence of influenza as a cause of death in these cases, especially when we look to the fact, that not more than 9 deaths are recorded in all London during the past week, as having occurred from influenza? I think we are; because we may be sure that an epidemic condition which raises the whole mortality by one seventh, which more than doubles the deaths from bronchitis, and largely increases those from other acute diseases of the chest, while the aged and the young, the apoplectic, paralytic, and consumptive, suffer out of proportion to the rest of the population—such an epidemic condition, I say, has essentially the characters attributed to influenza, by whatever name it may be called. The small number of deaths under the special head of influenza, therefore, is only one proof out of many that the Registrar-General need not have been at the trouble of making a separate class of what he calls zymotic or epidemic diseases. The epidemic tendencies of a given period must be sought, not in any particular class, but in an intelligent consideration of the whole mortality list. Medical men are slow to report a death from influenza when it can be properly placed under any other title. It is, however, the fact (as I know from other sources,) that influenza has been unusually prevalent in London.

Table deduced from the Registrar-General's Returns (London) for the week ending November 21, 1857; showing the rate of mortality in the forty-seventh week of the year 1857, in regard to those diseases which are above the corrected average of the same week for ten years:

	Average Mortality.	Actual Mortalita.	Excess	Excess per cent.
Whooping cough	33.5	53	20	58
Croup and Laryngitis	13.4	26	13	94
Influenza	3	9	6	—
Scrofula	6.5	13	7	—
Phthisis	137.6	159	21	15
Apoplexy	25.6	33	7	29
Paralysis	22.7	31	8	36
Bronchitis	103.6	227	123	118
Pleurisy	2.6	7	4	—
Pneumonia	104.2	127	23	22
Atrophy	30.6	38	7	24
Age	49.6	57	7	15
All Causes	1211.4	1382	171	14

Additional Remarks, Dec. 19th.—The epidemic mortality in London appears to have attained its culminating point. in the week ending December 6, in which the mortality from all causes was 1428; from bronchitis 242, from pneumonia 129, and from phthisis 168. Considered with reference to the season, however, this mortality is by no means so much in excess as that indicated

in the above table; and we may therefore possibly conclude, that the epidemic has passed its maximum in London. The next week shows a considerable decline. It is worthy of remark, that all the gentle hints and solicitations of the Registrar-General in the Weekly Reports, have not succeeded in raising the cypher of influenza above 22. In the year 1847, the stated deaths from influenza for the corresponding week were 198, those from bronchitis 343, from pneumonia 306, and from all causes 2454. The epidemic of 1847–8 was, therefore, immensely more fatal than the present one, so far, at least, as we have hitherto gone.

It appears from the returns of the Registrar-General (London) for the quarter ending September, 1857, that the mortality from acute diseases of the chest was considearbly below the average during the past autumn. It began to exceed the decennial average, however, in the month of October; and during the latter week of that month and the beginning of November, the increase was considerable, although not such as to give a decidedly epidemic character to the mortality. It was only in the second week of November that the total mortality began to be decidedly in excess of the decennial average.

In Scotland, the Registrar-General's returns show a very large advance on the mortality from pulmonary diseases during the month of November, 1857, as compared with the preceding month. Thus, in October, the deaths from bronchitis in the eight principal towns of Scotland were only 76, while in November they were 151, or *almost exactly double.* Pneumonia in the same period increased from 53 to 76; while phthisis has only advanced from 212 to 228. The increase, as regards brnnchitis, is most marked in Aberdeen, next in Greenock, next in Dundee, next in Glasgow, and next in Edinburgh. Influenza scarcely appears in the returns, numbering only 3 in October, and 7 in November.

The weather was, on the whole, fine in November, and not very dissimilar from that of the preceding month. The barometric pressure was somewhat higher than in October, viz., 30.143 inches against 29.817 inches. The mean temperature was nearly six degrees less, viz., 45°.1 against 51°.0, The rainfall was somewhat greater, and there was somewhat more of easterly winds. It is worthy of remark, that the mean developement of ozone, as tested at Greenock, was decidedly less in November than in October.

It would be interesting to know to what extent the inland districts of Scotland have been affected with influenza, and whether its manifestations have been simultaneous with those in the cities or not. From circumstances which have incidentally come to my knowledge, I am inclined to believe, that in some places in the neighborhood of Edinburgh the appearance of influenza, in an epidemic form, was considerably later than in the city itself.

[*Edinburgh Med. Jour. Boston Med. and Surg. Jour.*

PRACTICAL MEDICINE.

[Professor Austin Flint has prepared for the North American Medico-Chirurgical Review, the following report of selections from various Journals. The six following papers are some of those which refer to *Fevers*, and we transfer them to our pages for the benefit of our readers.

No man in this country has contributed more, in the way of faithful statistical observation to the department of Fevers, and no one, in our opinion is better prepared, than Dr. Flint to record what is truly valuable on the subject, for the consideration and guidance of others.

"The purpose of this report," says Dr. Flint, "is to notice the more important of the contributions to practical medicine, contained in the medical literature during the past year," 1857.

Fever articles are ever acceptable to practitioners in a Fever region, and we, therefore, make no further apology for our selections below.—EDTS.]

Report on Practical Medicine for the year 1857. By AUSTIN FLINT, M. D., Professor of Clinical Medicine and Medical Pathology in the University of Buffalo.

Remitting Fever of Children.—In a paper read at a meeting of the Society of Statistical Medicine, in the city of New York, Dr. J. Lewis Smith presents some considerations in reference to the nature of the disease denominated *infantile remitting fever*, and to the proper mode of treatment.

The most eminent European writers (Barthez, Rilliet, and West) describe, under this title, a form of disease which they deem identical with the continued fever of adults. Drs. Stewart and Condie, of this country, authors of works on the diseases of children, which are extensively read, regard the affection as symptomatic of intestinal irritation or inflammation. Dr. Smith has treated many cases both in private and dispensary practice, and has been led to form an opinion of the pathology of the disease differing from the views of the writers just referred to. The cases which he has studied occurred in the upper wards of the city of New York, which, as he states, are in an eminently malarious situation. He regards the disease as in a large proportion of cases miasmatic. He gives the following facts in support of this opinion:—

"1. The disease is very prevalent in spring and autumn, and rare in mid-summer and mid-winter, like malarious affections.

There are certain streets where I have known it to prevail almost like an epidemic in the vernal and autumnal months. If the disease were, as Dr. Condie states, 'in every instance, either a gastro-enteritis, an ileitis, or an entero-colitis,' how can this influence of the seasons be explained?

"2. Often, not always, the remissions are more marked than would be likely to occur in a symptomatic fever. The child may appear almost well in the morning, but in the afternoon and evening exhibit such intensity of symptoms as to cause the greater anxiety on the part of the friends.

"3. The symptoms are not altogether such as we should expect to find in a purely local affection. The patient will, it is true, when asked where he feels the pain, sometimes place his hand on the abdomen, and pressure upon the abdominal parietes not unfrequently produces great distress. Dr. Condie alludes to this tenderness, evidently believing it to be a symptom of inflammation. But I have always been satisfied that it was neuralgic, from the fact that pressure on the lumber vertebræ, and frequently on the chest and limbs, caused as much suffering as when it was made on the abdominal walls. The patient, if old enough, will complain, too, of aching in the head, back, and limbs, which is more the symptom of an independent fever than of inflammation.

"Again, constipation is ordinarily present, unless in the last stages of the disease. Intestinal irritation or inflammation, sufficient to cause so intense and protracted a fever as is often present, would be more likely to cause diarrhœa.

"4. Children, even nursing infants, take intermittent fever; why, then, may they not take remittent fever, from malaria? In my class at the dispensary, children with these diseases are frequently brought in together.

"5. I have found that measures directed to the alimentary canal, beyond simple purgation, do more harm than good. They fail to ameliorate symptoms; they awaken and distress the child. Moreover, when remissions occur, quinine will materially abridge the disease.

"6. Death seldom occurs from this affection. In one or two fatal cases which have fallen under my observation, this result followed convulsions and coma; and Dr. Stewart remarks, 'Dissections have furnished but little light on the morbid condition of the system in remittent fever; for on a fatal termination, the transmission to the brain is the ordinary course of the disease.' The mode of death, then, and the post-mortem appearances, do not comport with the doctrine that the intestines are the seat of the morbid process.

"Dr. Condie does not agree with Dr. Stewart, but attributes death to inflammation of the intestines. I do not think that the

remittent fever which I have treated, if uncomplicated, ever terminates in this way, for I have never seen a case in which abdominal symptoms did not yield to simple measures.

"7. Continued fever of the adult is of rare, and infantile remittent of frequent occurrence in the locality of my practice. The latter is not then identical with the former, as it appears to be in London and Paris, from the descriptions given by Rilliet, Barthez, and West.

"The above facts appear to me conclusive that the form of infantile remittent fever, which it has been my lot to treat, has been generally of a miasmatic character.

"It is very important to understand the nature of this affection, as the treatment will vary according to the theory we adopt. If living in a malarious region, we embrace the Broussian views of the American authors whom I have cited, and treat the fever as a local disease, we shall fail to ameliorate the symptoms, and be mortified and discouraged by the result, if I may judge from my own experience. My reliance at present is mainly on expectant measures, till remissions occur, and then on the exhibition of quinine. In cases thus managed, convalescence has been more speedy and certain than when opium, calomel, and counter-irritation have been employed to remove intestinal irritation or inflammation.

"At the risk of appearing presumptuous, I have thus presented a theory of infantile remittent fever not, indeed, novel,—for Taylor attributes one variety of it to miasm, but different from that contained in any American and most European treatises on diseases of children. I am the more anxious that the true nature of the disease should be understood, because I believe that the accepted doctrine is exceedingly pernicious to practitioners in malarious regions, and especially to the younger members of the profession who rely more on books than experience for guidance. The fact, too, that remittent fever has been in my practice the most frequent affection of early life, in the vernal and autumnal seasons, gives additional interest to the subject."—[*New York Jour. of Medicine*, Jan. 1857, p. 106.

On the Different Methods of Treating Intermittent Fever, with the Results of Treatment in Sixty-nine Cases. By Austin W. Nichols, M. D., of Buffalo.

The object in this paper is to study the effect of treating cases of intermittent fever without resorting to the preparatory treatment by emetics, cathartics, etc., which are still deemed important by many practitioners; and also to institute a comparison as regards relapses and the duration of the disease, between a

section of country where the disease prevails to a great extent every year, and a region not malarious.

Of the 69 cases, 46 were treated in a malarious section, and 23 in a region not malarious.

Of the 46 cases occurring in a malarious section, 17 were treated at once with quinia, in doses sufficient to arrest speedily the paroxysms, and 29 received preparatory treatment—viz. ipecacuanha and calomel, or calomel combined with either rhubarb or jalap. Relapses were observed in 14 of the latter and in 4 of the former cases, the ratio being as 1 to $4\frac{1}{2}$ in the cases which did not receive, and 1 to $2\frac{1}{14}$ in the cases which received the preparatory treatment. The average duration of the disease, dating from the commencement of the use of quinia, was found to be less in the cases which did not receive preparatory treatment, being a fraction over six days; while in the cases which received preparatory treatment, the average duration was a fraction under eight days. Adding the period occupied by the preparatory treatment, the ratio is as $6\frac{1}{3}$ to $8\frac{1}{3}$ days.

Of the 23 cases occurring in a region not malarious, all had no preparatory treatment. Of these cases, in ten, previous attacks had occurred. In the latter, the average duration of the disease, after treatment was commenced, was $3\frac{1}{3}$ days. In ten of the recent cases, the average duration was $2\frac{1}{2}$ days. Of the latter, relapses were observed in two cases; of the former in three cases.

Comparing the results as regards duration and relapses in the cases occurring in the malarious section and not receiving preparatory treatment, and in the cases occurring in the region not malarious, the contrast is striking: the average duration in the former being $6\frac{1}{3}$ days, and the average of relapses 1 in $4\frac{1}{4}$; in the latter, $2\frac{17}{19}$ days, and the average of relapses 1 in $3\frac{3}{5}$ cases. These results are greatly in favor of the region not malarious.

The reporter analyses his collection of cases with reference to the types of the disease; the number of paroxysms in each type; the number of relapses and the duration in each type. He also analyses separately the cases of tertian type.

The following summary embodies the practical conclusions which he deduces from the results of his analytical investigation:—

"From the foregoing analysis it will be seen that in cases of first attack the duration is somewhat less, and the number of cases relapsing about one-half that in cases having had one or more prior attacks. In a section of country where this fever is prevalent to a great degree every year, or in a malarious region, the duration is nearly three times that in a country not malarious, and the relapsing cases occur as frequently even under the same plan of treatment. It will be found that in a malarious

region the treatment of patients by quinia alone not only diminishes the number of paroxysms and abridges the duration of the disease, but that fewer relapsing cases occur than where a preparatory course of treatment has been adopted. Even in the analysis of 40 tertian cases, although the duration of the number of paroxysms is nearly the same under the two different methods of treatment employed, yet the cases of relapse are found to be *nearly twice* as numerous where the preparatory plan was adopted"—(*Buffalo Med. Journal and Monthly Review of Medical and Surgical Science*, January, p. 460.)

Treatment of Remittent Fever. By Jno. Herbert Clairbone, A. M., M. D., Petersburg, Virginia.

The practice of Dr. Clairbone, in cases of remittent fever, is embraced in the following quotations from an article entitled "Periodic *vs* Typhoid Fever."

"It is in the treatment of these cases the 'triple base' of Maillot so accurately expresses the indications to be fulfilled—viz. 'To combat the visceral lesions; to oppose the return of the paroxysms; to prevent the occurrence of relapses.' To carry out the first, it may be only necessary, if the patient be seen in the paroxysm, to administer six or eight grains of the mild chloride of mercury, with as many of Dover's powder, and one or two of ipecac., applying a dozen or two leeches to the head or stomach, according to the force of the reaction and its concentration at either point. The early occurrence of the remission will afford opportunity to exhibit the anti-periodic, which will effectually meet the two latter. Fifteen or twenty grains of the sulphate of quinine given in one dose at this time, or in two doses of a few hours' interval, will usually cut short an attack. Indeed, I have seen it succeed, in summarily effecting this end, after the disease had already continued unabated for more than a week, and when a dry tongue, nervous tremors, and incoherency of language had apparently ushered in the typhoid stage. After two or three days of treatment, if the fever still continue, which is sometimes the case, we have found smaller doses of quinine, five or six grains, exhibited in the remission, to answer a very good effect—gradually neutralizing the poison of the disease, and hastening convalescence, without inducing any of the disagreeable symptoms of cinchonism. We sometimes combine the quinine with calomel, ipecac., and opium, at its first administration; and where there is much visceral engorgement, the antiperiodic is often thus more effectual.

"Cases subjected to this treatment in their early stages have not generally, in our experience, 'run into typhoid fever.' Of

nineteen cases, not selected, but transcribed from our note-book of last September, the average duration of treatment was six days. Six more days would cover the average period of convalescence. * * * * *

"When the fever has persisted for one or two weeks, in spite of the treatment adopted, and the tongue begins to be dry, and brown, and fissured, and the bowels are irritable, we usually recommend, about once in twenty-four hours, four or five grains of Dover's powder, with as much of hyd. c. creta, if there should be a necessity for the latter in the condition of the secretions, and apply at the same time a mild visicatory over the abdomen. We continue the use of the antiperiodic, however, exhibiting three grains of quinine or an ounce of the infusion of cinchona and serpentaria every six hours, alternating sometimes with fifteen or twenty drops of oil of turpentine.

"With regard to the use of purgatives. We have found them generally not only unnecessary, but positively prejudicial at any stage of the disease, and evincing, even the mildest of them, aptness to induce irritation of the bowels."

Treatment of Scarlatina. By JAMES D. HARPER, M. D., Minden, Louisiana.

After describing briefly the characters of an epidemic of scarlatina which prevailed in Minden in May, 1856, Dr. Harper gives the following account of his method of treatment, and the results.

"Of the 40 cases under my care during the epidemic, there were 19 of simplex, 12 of mild anginosa, and 9 aggravated cases of anginosa, some of which threatened to assume the malignant form. In some of the cases, seldom anything was employed beyond a saline laxative, repeated from time to time, as circumstances demanded. When the arterial excitement was very high, *cold water to the head and throat*, cooling drinks, and gargles of flaxseed and vinegar, constituted the treatment in a majority of the simple cases; in others, the chlorate of potash was added to the treatment, as recommended by Dr. Watson, with the happiest effect. The twelve mild cases of anginosa yielded pretty much to the same treatment as those of the simple form,—the more lavish use of *cold water*, and the occasional application of nitrate of silver or sulphate of copper, with the probang, constituting the essential difference in the treatment of these two forms of scarlatina. The troublesome itching of the skin, which is apt to supervene upon the appearance of the eruption, can be relieved to some extent by sponging the surface with cold water, which does away with the intolerable heat; brans of different

kinds may be rubbed upon the body, and thrown into the bed of the patient, which soothes for a time.

"The nine cases, alarming in their character, underwent in the early stages, to a certain extent, the same treatment as those of the mild form; but as they advanced, the more threatening become the symptoms, such as great difficulty of breathing, from glandular enlargement, combined with a viscid and tenacious secretion, choking up the larynx; a more frequent pulse; extreme restlessness and jactitation, doubtless arising from obstruction in the air-passages, with some disposition to diarrhœa, and evident tendency to congestion of the brain; in some, these symptoms were recognized at an early period; in others, were deferred until desquamation had commenced. The head and throat trouble was the distinguishing feature in these cases; pulse ranged from 125 to 180, with more than usual heat about the head, attended at times also by slight incoherency, and nervous twitchings of the fingers and eyelids. There is but little doubt that in most of these cases the excitement of the brain evidently arose from the condition of the throat; these symptoms were, however, promptly met, not by sponging, but by *pouring cold water* out of a pitcher, or some other convenient vessel, upon the head, giving the water a fall of from 4 to 12 inches; this was continued from 15 to 40 minutes at a time, or until the pulse was reduced 20 or 30 beats in a minute, and the head became cool. At this crisis, the patient would more frequently than otherwise go off in a refreshing sleep, lasting half an hour, more or less. Reaction manifested itself by the same restlessness, incoherency, and hurried respiration, but which would always give way to the impression of the water, thereby placing the patient in a condition highly favorable for recovery, other things being equal. In some of the cases *chlorine* was used as a stimulant and antiseptic with good effect.

"There was a condition of the throat which gave rise to much trouble, even after desquamation had in some instances almost subsided, and the patient otherwise convalescing; it was where the ulcer was so low as to be beyond the reach of the probang, and the little patient, not knowing the importance of raising the foul secretions, swallowed them, whereby the system became thoroughly inoculated with the animal poison, generating that condition of system well known as typhoid, and in one instance producing, as I am well convinced, that characteristic feature of the diseased state of the glands of Peyer, similar to that which accompanies genuine enteric fever, with a pulse from 125 to 180, a tympanitic abdomen, and considerable excitement about the brain. Cases of this character were treated pretty much as those of enteric fever, at the stage where similar symptoms were present, with the addition of cauterizing the ulcer of the throat,

if accessible, which is most certainly the source of the mischief. A nourishing diet was given, also brandy or port wine, with a free use of chlorine, to rid, as much as possible, the secretions of their obnoxious properties. When the respiration became embarrassed or hurried, from flatulency, turpentine was administered; if any threatening of brain disease appeared, the patient was subjected to the cold water, and continued until such symptoms were allayed.

"This condition of things lasted from six to ten days. The motions from the bowels consisted mostly of secretions from the throat, occasionally tinged with fæcal matter; but so long as the throat remained in an ulcerated state, diarrhœa was invariably present; it could only be temporarily checked, as the source of the malady had to be reached before any permanent benefit could be realized, proving that the diseased throat and enteric symptoms bore the relation of cause and effect.

"The sequelæ of 'scarlet fever' are generally a source of much interest and uneasiness to the physician. Indeed, there is no one disease which presents a longer catalogue of secondary affections than scarlatina. Of the various diseases which are likely to follow scarlet fever, dropsy in some form is, according to my observation, the most frequent. Of the various forms of dropsy, anasarca is probably the one generally met with; it ordinarily makes its appearance from the last stages of desquamation to the third or fourth week following. Medical opinion is yet unsettled as to the form of scarlatina most apt to be succeeded by dropsy. Of the fifty-six cases enumerated, there were eight cases of anasarca, all of which supervened upon mild cases of scarlet fever, not one severe case of scarlatina resulting in dropsy of any kind. In the dropsies following this eruptive fever there is an almost total inaction of the kidneys, an inertness which seldom attends the disease originating from a different cause; it readily yields to active hydragogue cathartics and diuretics —the one to produce copious watery evacuations from the bowels, while the other incites the kidneys to increased action. An exclusive milk diet should be rigidly adhered to throughout the complaint. When the lower extremities are swollen to any great extent, a bandage applied, beginning at the toes and terminating at the knee, or high up the thigh, if preferred, has been found highly useful in reducing the effusion. After the effusion has been in a great measure removed, if the patient is perceived to be in an anæmic condition, some one of the mineral acids, or ferruginous preparations, should be immediately resorted to. A varied and nutritious diet, in this state of the system, is admissible.

"It is stated that the dropsies which follow scarlatina are sometimes dependent upon, or associated with, that peculiar uræmic

state known as 'Bright's Disease;' if so, then a case thus dependent on, or associated with 'Bright's Disease,' would be found more difficult of cure than those which came under my notice.

"Various speculations have been indulged in regard to the prophylactic virtues of atropa belladonna in scarlatina. There are few who place implicit reliance in its preventive properties; others, again, firmly believe that it has the unmistakable power of *modifying*, if not preventing, an attack; while others, whose statements are equally reliable, denounce its virtue in preventing or modifying the disease, and, in this respect, as worthy only of the source from which it emanated.

"I gave belladonna, during the epidemic of 1856, to 20 children; 19 of them took it as directed, and one irregularly. Of the 20 children, the one only who neglected to take the medicine as directed had the disease; most of the 19 who escaped were not only exposed to the epidemic influence, but to direct contagion.

"With this experience, I have ranked myself with that class of the profession who, without relying implicitly on the preventive powers of belladonna, yet deem it highly useful in modifying and arresting, to some extent, the dreadful ravages of scarlatina."—(*New Orleans Medical and Surgical Journal*, May, 1857, pp. 743—746.)*

Hospital Treatment of Yellow Fever in New Orleans. By R. D. Powell, M. D., Brunswick Co., Va.

Dr. Powell states that, having been a resident of the Charity Hospital in New Orleans in 1855, he had an opportunity of comparing different methods of treating yellow fever, and the plan which appeared to him most successful was the following: A hot mustard foot-bath was promptly employed. Next, the infusion of orange-leaves given freely as a drink, and continued during the attack. As a purgative, castor oil combined with a few drops of laudanum. This was administered soon after the admission of the patient. Ice applied to the head to relieve cerebral symptoms, if the later supervened; also, local blood-letting, by cupping or leeching.—(*Virginia Medical Journal*, June, 1857, p. 470.)

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* An interesting article by Dr. Lutton, of Aurora, Indiana, on the diversity of symptoms in scarlatina maligna having already appeared in the pages of this journal, (North American Medico-Chirurg. Review,) No. for Nov., p. 912, is not here introduced.

Epidemic Fever characterized by mild Erythematic Pharyngitis.

During the months of January, February, and March, 1857, there prevailed, in the city of Buffalo and its vicinity, a form of fever accompanied by mild pharyngitis, having a career of from three to five days, and generally, if not invariably, ending in convalescence. In a report made to the Buffalo Medical Association by the reviewer, the results of an analysis of twenty-three recorded cases coming under his own observation were given, and the question of the identity of the disease with scarlatina discussed. From the results of the analysis, the following deductions were drawn by the reporter:—"The disease was an epidemic fever, characterized by mild erythematic inflammation of the fauces as a constant local complication. Its character as esentially a fever is established by the febrile movement being in so marked a degree out of proportion to the local affection; in other words, evidently not being symptomatic of the latter, and by its running a definite although a brief career. It is a fever of from three to seven days' duration. Its epidemic character is sufficiently apparent. It has prevailed more or less extensively in the city for about two months, reaching its acme gradually, declining gradually, and at length disappearing, affecting both sexes and different ages without notable discrimination. As an epidemic fever its symptomatic features were very uniform. The erythematous affection of the fauces constitutes the only positive character, aside from the brief duration of the febrile career. The other symptoms uniformly present were only those incident to febrile movement; and the symptoms observed in a few cases—viz. the convulsions in one case, the retraction of the head in one case, etc., were only incidental events, not intrinsic elements of the disease. The small patches of white exudation observed in some of the cases do not suffice to establish any relation of the local affection to that called *diphtheritic* by Brettonneau and others. The occurrence of several cases repeatedly in the same family does not suffice to prove that the disease was propagated by contagion, since this fact is explicable on the supposition of the patients being equally exposed to an epidemic influence, and there being a marked discrepancy in the intervals separating the cases necessarily occurring in the same family.

The disease was considered as a species of fever distinct from scarlatina, on the following grounds: 1. The uniform absence of the scarlatinous eruption on the exterior surface. 2. The uniform absence of any connection with well-marked cases of scarlatina, occurring either previously or subsequently. In no instance was the disease preceded or followed by scarlatina in the same family. 3. Several of the persons affected being adults

and persons beyond middle life. 4. Medicine was in no instance followed by the sequels of scarlatina—viz. rheumatism, serous inflammation, and especially dropsy. 5. In several instances the persons affected had had scarlatina.

Professor Rochester at the same time made a report on the same subject. Between January 6th and April 4th he had noted thirty-seven cases. In many instances he had been led to observe irregular intimacy in the febrile movement. The subjects in ten cases were of all ages and conditions. He regards the communicability of the disease as probable. If communicable, the period of incubation is short, the disease manifesting itself in some instances within twenty-four hours after exposure. In many of his cases the patients had had scarlatina. Two children who were very ill with scarlatina had this form of fever a month after their recovery.—(*Buffalo Med. Journal*, May, p. 718.)

Liability of Negroes to the Epidemic Diseases of the South.

The fact is so glaring, and so universally admitted, that I am really at a loss to select evidence to show that there is no acclimation against the endemic fevers of our rural districts. Is it not the constant theme of the population of the South, how they can preserve health? and do not all prudent persons, who can afford to do so, remove in the summer to some salubrious locality, in the pine-lands or the mountains? Those of the tenth generation are just as solicitous on the subject as those of the first. Books written at the North talk much about acclimation at the South; but we here never hear it alluded to out of the yellow-fever cities. On the contrary, we know that those who live from generation to generation in malarious districts become thoroughly poisoned, and exhibit the thousand Protean forms of disease which spring from this insidious poison.

I have been the examining physician to several life-insurance companies for many years, and one of the questions now asked in many of the policies is, "Is the party acclimated?" If the subject lives in one of our southern seaports, where yellow fever prevails, and has been born and reared there, or has had an attack of yellow fever, I answer, "Yes." If, on the other hand, he lives in the country, I answer, "No;" because there is no acclimation against intermittent and bilious fevers, and other marsh diseases. Now, I ask if there is an experienced and observing physician at the South who will answer differently? An attack of yellow fever does not protect against marsh fevers, nor *vice versa*.

The acclimation of negroes, even, according to my observa-

tion, has been put in too strong a light. Being originally natives of hot climates, they require no acclimation to temperature, are less liable to the more inflammatory forms of malarial fevers, and suffer infinitely less than whites from yellow fever: they never, however, as far as my observation extends, become proof against intermittents and their sequelæ. The cotton planters throughout the South will bear witness, that, wherever the whites are attacked with intermittents, the blacks are also susceptible, though not in so great a degree. My observations apply to the region of country removed from the rice country. We shall see, further on, that the negroes of the rice-field region do undergo a higher degree of acclimation than those of the hilly lands of the interior. I know many plantations in the interior of Alabama, South Carolina, Georgia, Mississippi, and Louisiana, on which negroes of the second and third generation continue to suffer from these malarial diseases, and where gangs of negroes do not increase. (P. 376.)

And again: Certainly, negroes do suffer greatly on many cotton plantations in the middle belt of the Southern States; and I have seen no evidence to prove that negroes can, in this region, become accustomed to the marsh poison; and my observation has been extensive in four States. A question here arises: Is there any difference in types of those malarial fevers which originate in the flat tide-water rice-ilands, and those of the clay-hills, or marsh fevers of the interior? I am inclined to think there is.—*Indigenous Races*, p. 376; Art. "Acclimation," etc. By J. C. Nott, M. D., of Mobile, Ala.—[*North American Medico-Chir. Review.*

On a Substitute for Human Milk. By William H. Cumming, M. D.

[The following, on a most important department of Hygiene, is from the pen of one, in whom we are gratified to recognize one of the alumni of the Medical College of Georgia. Dr. C. has devoted much attention to the subject of which he treats, and his views are reliable, for they are the result of the most intelligent personal observation and diligent experiment.]

Artificial lactation is the subject of this paper. In order to prepare our minds for its proper consideration, it will be well to examine the natural function in its normal state.

Lactation exists as a function only among the Mammalia. These derive their title as a class from the existence of the organs

of this function. Whether they spend their lives in the water or on the land, whether they swim or creep, or walk or climb, or fly, they all have milk-producing organs; they all suckle their young.

And yet there are foreshadowings of lactation far down the scale of being. The bees and wasps and ants prepare a supply of food for their young, and the larva on his emergence from the egg, finds this provision near at hand and amply sufficient for his wants.

Many birds bring insects and worms to their yet unfledged young. The swallow and the wren are familiar examples of this. Nothing can exceed the diligence and assiduity with which they devote themselves to this important work of artificial lactation. The pigeon comes still nearer to the mammalia in this matter, for it supplies to its young an abundance of partly digested food. The fact has not escaped notice, and "*pigeon-milk*" is the name of this article of diet.

The truth is, that most animals leave the egg or the womb in a state of development in which they are unable to obtain and use the ordinary food of their kind. In most cases their organs of locomotion do not enable them to obtain this food. The larva of the bee cannot fly, the puppy cannot walk, the monkey cannot climb, the beaver cannot swim. Nor can they in most cases masticate and digest such food as their parents use. The teeth are ordinarily still within the gum, and do not appear for some time after birth. Most of these animals therefore absolutely require for their sustenance and growth a peculiar food suited to their actual condition.

What then is lactation? It is the secreting from their own blood, in organs then, and then only active, and the furnishing to their newborn young, a liquid food suited to the various degees of their development at birth, and the continuing to furnish the supply, until the young animal has become able to use the ordinary food of his race.

This secretion is continued much longer in some animals than in others. The young are not born in the same state of development. The young of the Marsupials leave the womb while yet in an embryotic state. The ruminants stand at the other extreme. Between these the other orders range themselves. In order to fix this fact in our minds, let us compare those animals with which we are most familiar. Compare the rat, the puppy, the kitten, with the colt, the lamb, the calf. Blindness, weakness and deformity mark the former; while the latter are able to see and hear and walk. How soon do the young ruminants follow their dams, skipping and running as they go. The states of development at birth are thus seen to vary greatly.

The nature of the future food of the young animal has an im-

portant connection with the length of lactation. The digestion of grass and grain and roots requires more gastric energy than that of worms and insects and flesh. In conformity with this, is the fact, that the graminivorous animals furnish milk to their young until the latter are very much more developed than the carnivora are when they are weaned.

We have used the word Milk. What is Milk? It is a general term for the various products of the mammary glands of different animals. It is the name for the food furnished by these mothers to their young. Milk is a white, obaque, oily liquid, its color is not pure white, but verging on yellow. In some animals it is sweet, containing notable quantities of sugar. But in all it contains three great constituents—butter, cheese and water.

We have said that milk is suited to the wants of the young animal. It consists universally of two classes of food; oily materials containing no azote, and caseous substances holding in combination mineral salts, and admirably adapted to the growth of the body.

It is suited to the wants of the young animal. What is the first want of a new-born animal of this class? Warmth. He has been, during the previous stages of his existence, surrounded by tissues of the temperature of 100°. He is now out in the open air, or in still colder water, the heat of his body rapidly radiated or conducted into these cooler media. This loss of heat does not lower his temperature, for there is an internal supply. At the moment of his birth, respiration commenced, and the oxygen of the air combining with the oil of his body, evolves heat sufficient to replace that which is lost. But this consumption of oil cannot be long continued, unless the supply be renewed. The body will be soon reduced to a state of extreme emaciation, and death from cold must follow.

A supply of oil is then the first want of the young animal. The lamp of life must be fed, or it will speedily go out. The milk contains oil in proper proportion for this purpose. This oil is butter.

But not only must the vital heat be maintained, the tissues of the child must grow. The materials for the growth of the tissue are supplied by the casein or albuminous portion of the milk. The name casein is applied to a group of substances having an almost identical chemical composition. Indeed it has until recently been supposed to be identical. But it has been ascertained by Quevenne, that while their organic composition seems the same, they hold in combination different proportions of mineral insoluble salts. Thus, phosphate of lime (the bone earth) exists in different proportions in suspended casein, in dissolved casein, in albumen, and albuminose. These four substances also differ

in the effects produced upon them by different agents. Thus, while suspended casein is coagulated by a small quantity of rennet, the dissolved casein, the albumen, and the albuminose are unaffected by it. Thus, while the albumen is coagulated by ebullition of the milk, the other three constituents of the casein are unaffected. Nitric acid produces the same effect without the agency of heat.

In the present state of our knowledge on this subject, we can only say that these four substances, by the action of the gastric juice, seem to be all converted into albuminose, and to be in this form absorbed into the system.

Thus constituted, having both azotised and unazotised elements the milk is suited to supply the wants of the animal, and to promote his growth and development.

These general statements concerning lactation are applicable to the function as existing in the woman. An element which is not universally but very generally found in milk, exists in human milk in the proportion of 0.075, we refer to the sugar. Of the uses of the sugar we are not so well informed. There is reason to believe that it contributes principally to the maintenance of the heat of the body.

We come now to the subject of artificial lactation. Sometimes by the death of the mother, more frequently by her failure to secrete enough milk, the child is deprived of the needed supply. Something must be done for the famishing infant. In a few cases, we may have recourse to another woman for the needed food. Few good nurses, however, can be found. In the cities, there are by no means enough to supply the demand for human milk; in the country, they can scarcely ever be obtained. In this country we can find no permanent, reliable supply of milk, except that furnished by the cow. The question is,—Can artificial lactation be successfully performed by means of the milk of the cow? This is a question of great interest to medical practitioners, as well as to parents.

In using cow's milk as a substitute for the natural food of infants, great difficulties are found. These arise from the difference of composition of the two kinds of milk—thus:

Cow's Milk is composed of			*While Human Milk is composed of*		
	Butter,	38.59		Butter,	20.76
	Casein,	40.75		Casein,	14.34
	Sugar,	53.97		Sugar,	75.02
	Water,	866.69		Water,	889.88

If we so dilute cow's milk as to reduce the butter to 20.76, we shall have 21.92 of casein, or 50 per cent. more than in human milk. This excess of casein leads to serious indigestion, with consequent gastric and intestinal disorders.

If, on the other hand, we reduce by still farther dilution the casein to 14.34, we shall have only 13.58 of butter, or less than

two-thirds of the proper proportion. This deficiency of butter does not produce such immediate disturbance as we have stated to follow the excess of casein, but its permanent influence is most injurious.

First, because there is a deficiency of the material needed for the production of heat. If the temperature of the body be lowered, all the functions languish, and the child is unable to resist the hurtful influence of atmospheric changes.

Secondly, this deficiency of butter implies a corresponding deficiency of the phosphureted oil (lecithine) of the milk, the proper and peculiar nutriment of the nervous system, which exists in butter in the proportion of 8 per cent. or one-twelfth. If there be a deficiency of one-third of the butter, there will be of necessity, a corresponding deficiency of one-third of this phosphureted oil. As the child, during the first year of his life, should take from 1,000 to 1,400 lbs. of milk containing from 20.76 to 29.06 lbs. of butter, the annual deficiency of this phosphureted oil would be from 0.5536 to 0.7749 lb.; that is, from nine to twelve ounces. The natural consequence of this deficiency of *nerve food* is failure of *nervous energy*, and imperfect performance of *nerve functions*. The various processes languish, and calorification, circulation, absorption, digestion and secretion all feel the depression.

The proper remedy for these evils, is to provide a milk much richer in butter than the ordinary milk of the cow. If we leave a quantity of cow's milk at rest for four or five hours, and then carefully remove and examine the upper third, we find that it contains about 50 per cent. more butter than at first. In round numbers, the butter is to the casein as 57 to 40, or as 100 to 70. Now this is the relation between these two substances in human milk. If we then so dilute this new milk as to reduce the casein to 14.34 thousandths, we shall have 20.76 thousandths of butter. This is just what we need (with the addition of sugar) as an accurate imitation of human milk, and, therefore, a good substitute for it.

Take, then, ordinary cow's milk and let it stand for four or five hours. For a child three months old, $2\frac{1}{4}$ quarts will be needed. Take the upper third, ($1\frac{1}{2}$ pints,) and add to it $2\frac{1}{4}$ pints of water; sweeten it with the best sugar, of which $2\frac{2}{3}$ ounces will be required. It should be made somewhat sweeter to the taste than ordinary cow's milk.

A child three month old will take from 48 to 60 fluid ounces, daily, in six or seven doses of a half pint each.

It should be given from a bottle—*suction being the only proper mode of feeding for a young child.*

Its temperature should be from 100° to 104°. It should be warmed again if it becomes cool while the child is taking it.

The child should be early trained to pass 6 or 8 hours at night without feeding.

The kind of bottle, which for cheapness and convenience is most advantageous, is a plain 8 ounce vial, of an elliptical form. The artificial nipple is best made by rolling a quill in soft muslin and forcing this into the neck of the vial, leaving about three fourths of an inch projecting from the neck. The ease with which the muslin may be unrolled and thoroughly washed, gives this arrangement a superiority over every other, especially in warm weather. The quill also may be readily cleaned.

The child should be fed at intervals of three or three and a half hours. Regularity in this respect is very advantageous.

During the first month, the child needs food of different composition. There should be more butter in proportion to the casein. In order to obtain this increased proportion of butter, let the upper *eighth* of the milk be taken instead of the upper *third*. This milk contains from 70 to 80 thousandths of butter. It should be diluted with 2.6 parts of water.

For a child from 3 to 10 days old.	Milk 1000	Water 2643	Sugar 243
" " 10 to 30 "	"	" 2500	" 225
" " 1 month old.	"	" 2250	" 204
" " 2 "	"	" 1850	" 172
" " 3 "	"	" 1500	" 144
" " 4 "	"	" 1250	" 124
" " 5 "	"	" 1000	" 104
" " 6 "	"	" 875	" 94
" " 7 "	"	" 750	" 84
" " 9 "	"	" 675	" 78
" " 11 "	"	" 625	" 73
" " 14 "	"	" 550	" 67
" " 18 "	"	" 500	" 63

By thus gradually diminishing the proportion of water, we furnish the child a milk containing an ever-increasing proportion of nutritive matter.

How long should artificial lactation be continued? The only answer to this is, "until the child has become able to use ordinary human food." The child should be fed with milk until his organs of mastication and his powers of digestion render it best for him to have other food. And at what age does this condition exist? Children vary so much in the rate of their developement, that no answer can be given applicable to all cases. In a vigorous child the first dentition is usually completed at two years of age. Sometimes this appearance of the full complement of teeth takes place six months earlier, and sometimes six months later. Whenever this first dentition is completed, the child has the full masticating apparatus of childhood, and may receive other food than milk. In many cases, lactation must be continued until the age of three years. And it may be safely presumed, that no food will be found so suitable for the

tardily-developed child as that which divine wisdom has prepared for the purpose of promoting this development. As an article of food for adults, milk is of great value. Entire races of men rely upon it, and it seems, when thus largely and permanently used, to promote strength and vigor. For the formation of teeth and bones, its phosphate of lime is indispensable, and no other food suited to a feeble child contains so much in intimate union with organic elements.

Nothing has been said of any other mode of artificial lactation. This omission is not accidental. The truth is, that milk is *the only material* that inspires or even warrants any hope of real success. But this is not meant to say that all children reared otherwise die, but that good, physiologically good results do not follow the use of any other food. Children may *survive* months of arrow-root or other farinaceous food, but a normal, healthy, happy, vigorous, steady, ever-advancing development was never yet attained in this way. The human stomach has no creative power. The materials must be furnished, or the building cannot rise. Lecithine must be given, or the nervous energy declines. Without phosphate of lime, how shall the teeth and bones be made?

If we examine the constitution of the blood, we shall find what materials go to make the human body. What are these? Oxygen, hydrogen, carbon, azote, chlorine, fluorine, iodine, sulphur, phosphorus, silicon, potassium, sodium, calcium, magnesium, iron and manganes. Of these sixteen substances, all are found in milk. And not only so, but they exist in the milk in the same combinations as in the blood. Not only have we chlorine and sodium, but we have chloride of sodium; not merely phosphorus and calcium, but phosphate of lime already prepared for use. Not only have we oxygen and hydrogen and carbon, but we have ten different oils already existing in the milk. We have four different protein compounds, each holding in combination a definite proportion of phosphate of lime. Thus, and in all probability thus only, can this invaluable, but insoluble salt be introduced into the tissues, and give strength and firmness to the frame. Why, then, with this evident adaptation of milk to the development of the body, should we look for other articles of food? Among all the substances now used, none can make any such claim. Indeed, it may be safely said, that milk is an article standing alone, prepared expressly for this one purpose, and challenging all competition.

If the attempt made in this paper to show that the milk of the cow may be so modified as to suit the peculiar wants and condition of the infant, has been at all successful, there is ground for hope that much suffering may be relieved, and many lives saved. The subject is one of great importance, and demands the earnest

consideration of the medical profession. To them the eyes of anxious and sorrowful parents are turned for help; if aid can be given, let it not be withheld.—[*American Med. Monthly.*

Empyema Treated by Injections. By DAVID PRINCE, M. D., of Jacksonville, Ill.

[The following case presents some analogy to the one reported in our last number, by Dr. Sternes De Witt, of Baker county, Georgia. Dr. De Witt reports a definite and very large quantity of pus. In this case the amount is not designated.

Dr. De Witt treated his case successfully, by large injections of cold water into the cavity of the pleura, which we would much prefer to the use of Iodine injections, recommended in the following report:—EDTS.]

The perusal of Dr. Brainard's case of cure of empyema of the pleural cavity by injections of iodine (*N. W. M. and S. Jour.* for November), has induced me to record a case of my own in your valuable Journal.

Little Henry Lurton, aged four years, the third child of healthy parents, and of healthy constitution himself, had an attack of pleuritis of the right side, and was left entirely to the aid of the *vis medicatrix naturæ*, under the guise of infinitesimal doses for about six weeks, when, on the 28th of January, 1856, I was called upon for surgical interference.

At this time the enlargement of the right side was very obvious to the eye, and the sound was dull on percussion.

Frequent and quick pulse and daily fever and nightly sweats were present, while the little patient could breathe only in the sitting posture, and his sleep was in the rocking chair.

A considerable quantity of pus was discharged through the canula left in the orifice made by the trochar, giving immediate and inexpressible relief.

Feb. 9th.—The puncture had not been kept open, and the demand for a second puncture became urgent. The amount discharged was somewhat smaller than before. The opening was from this time prevented from closing by the daily introduction of a tent, upon the withdrawing of which, a considerable quantity of ill-conditioned pus would be discharged.

As nature seemed not to be making good progress with the case, it was resolved to see if the behaviour of iodine would be as good here as in other cavities. On the 25th of March, two drachms (℥ij) of strong tincture of iodine were thrown in by a

small glass syringe. This was done after the tent had been withdrawn, and the pus collected during the preceding twenty-four hours had pretty well escaped; the tent was again introduced as usual, to be daily withdrawn as before.

The injection was repeated at intervals of about a week, for five times, when the discharge had pretty much ceased. The respiratory murmur could be heard throughout the whole extent of the lung; all sign of disease has disappeared, and by the middle of May the boy was at play with his top.—[*Chicago Med. Journal.*

On the Escharotic Treatment of Cancer. By Professor Syme.

After some sour comments upon Dr. Fell's mode of treating cancer, and upon the conduct of the surgeons of the Middlesex Hospital, in allowing so irregular an experiment to take place under their auspices, Mr. Syme proceeds to state his own opinion upon the escharotic treatment of cancer and to offer certain practical rules upon the treatment of cancer generally.

"If," he says, "caustic is ever used for destroying malignant textures, it should, therefore, be of such power and so employed as to strike at once to the root of the evil, and I am able to suggest efficient means for this purpose.

"Mons. Velpeau, in speaking of the caustic made by mixing sulphuric acid with saffron, expresses his persuasion that it would be the best of all escharotics except for its expense and the difficulty of confining its action within certain limits. It occurred to me that sawdust would supply the place of saffron, and my assistants at the hospital ingeniously devised the following effectual means of restraining the extent of action. A solution of gutta percha in chloroform is applied to the skin for some distance around the part to be attacked; then a thick piece of the same material, with an aperture cut in it of the requisite size, and softened by exposure to heat, is pressed firmly so as to adhere everywhere to the surface thus prepared; a thin piece is next glued round the edge of the opening, so that, when supported by a stuffing of lint, it may form a wall enclosing the diseased part. Concentrated sulphuric acid, with about an equal weight of sawdust stirred into it, until the admixture assumes a homogeneoes consistence equal to that of thin porridge, is lastly applied, in quantity proportioned to the extent of thickness concerned. In the first instance, as the pain is acute, opiates or chloroform may be used; but after a short while, so little uneasiness is felt that the patient can easily allow the caustic to remain for ten or twelve hours, when it will be found that the whole diseased mass, though covered with skin and several inches in

depth, has been reduced to a cinder, presenting the appearance of strongly compressed tow. Under poultices, the slough separates in the course of days or weeks, according to its depth, and the sore then heals without any trouble. If, therefore, patients, from an unconquerable dread of cutting, should prefer the escharotic treatment, or if the circumstances, on any other account, should seem to render this method eligible, the procedure just described may be found useful.

"In conclusion, I beg to offer the following principles or practical rules for the treatment of cancer:—

"1. The treatment of cancer may be divided into curative and palliative.

"2. The curative treatment should not be undertaken when the local disease is so seated or connected as to prevent its complete removal; when the lymphatic glands are affected; and when the patient's general health is deranged.

"3. Removal may be accomplished by means of the knife, escharotics, and ligatures.

"4. Of these means, in general, the knife is best, and ligatures the worst.

"4. Escharotics may be used with most advantage when the disease is superficial.

"6. Escharotics, employed with a curative view, should always destroy the whole morbid part by one application.

"7. The palliative treatment is generally best accomplished by means of soothing applications and attention to the general health.

"8. When the local disease is very troublesome, it may sometimes be relieved for a time by destruction of the morbid growth.

"9. The best agent for this purpose, and also with a curative view, is concentrated sulphuric acid properly applied."—[*Edinburgh Med. Jour.*, and *Ranking's Abstract.*

Syrup of the Superphosphate of Iron. By ALEXANDER CUSHMAN.

The very favorably mention made in the European Medical Journals, of this new remedy induced some of our physicians to send out during the past year, and obtain a supply for the purpose of testing its effects.

The result was so far satisfactory that many others wished to introduce it in their practice, and the English supply being exhausted, I found it necessary to prepare it myself, which I did according to the formula of Mr. Greenish, of London, as specified in the U. S. Dispensatory, under the article on Ferri Phosphati. A paper in the American Medical Gazette for January, also

brought it more generally before the profession here, and it appears to be attracting much attention wherever it is heard of. Hitherto the precipitated phosphate of iron has been but little employed owing to its repulsive color, but when as at present it is dissolved in an excess of phosphoric acid, and formed with sugar into a clear white syrup, as inviting to the eye as agreeable to the taste, there is reason to anticipate that its use will become very popular.

A careful and somewhat troublesome manipulation is requisite in the preparation of this syrup, in order to produce a perfect result. There is a strong tendency to reaction between the sugar and the acid, which will sometimes cause a precipitation of the iron, sometimes a granulation of the sugar, and sometimes a partial decomposition of the latter, resulting in a reddish or brown color, more or less dark. Experience and care in regulating the heat only will prevent these accidents. When however, once perfectly formed, there is no tendency to decomposition, as it is not affected by the atmosphere or by light, nor does it show any disposition to ferment. The variable quality of the phosphoric acid of the shops, is also a fact to be guarded against. Out of twenty-three parcels which I have examined, only four have proved to be of standard strength. That this is no unusual case, may be seen by comparing the following analyses, showing the proportions of Anhydrous acid and water in the specimens examined by four different authors.

	Rose.	Peligat.	Dulong.	Berthol.
$P.O^5$.	92·7—90·52	87·45	82·92	75
H.O.	7·3 — 9·48	12·55	17·08	25

If the acid used is not of sufficient strength to dissolve the phosphate of iron immediately, it forms an insoluble white compound, probably the tribasic phosphate which cannot be made use of. On the other hand, an over excess of acid renders the resulting syrup disagreeably sour, and of course gives an uncertainty to the preparation which should not exist, besides increasing the likelihood of decomposition in the sugar. Each new parcel of acid should therefore be tested before use, to determine the exact amount required to neutralize a given quantity of the precipitate phosphate, before proceeding to make up any large amount.

It may not be amiss in this connection, to quote a few of the cases given under the authority of Greenish as showing the peculiar class of diseases in which the superphosphate of iron has been successfully administered in England.

"Case 1.—A University Student, very weak, emaciated with loss of appetite, diarrhœa followed by obstinate constipation of frequent occurrence, palpitation of the heart, loss of memory,

countenance sallow, frequent headache, which would continue for hours, and quite incapacitate him from mental exertion. The syrup of the superphosphate of iron was prescribed three times a day. In about ten days he expressed himself to be an altered man; the headache had not recurred, his apetite improved, his strength was greatly increased—indeed, in about a month he was perfectly well, and was enabled to compete, and successfully so, for several prizes which in his former state would have been quite impossible. He has continued well ever since.

"Case 2.—A young lady had for some time suffered greatly from painful and defective menstruation; her general aspect was palid, with a marked green tinge. There was great pain and a sensation of sinking in the back with copious leucorrheal discharge, great headache, especially in the erect position or walking. For these reasons, she was unwilling to exert herself; she complained much of languor, and it was said by those acquainted with her, that of late she had become very dull of apprehension; she had no appetite, could not take animal food, and what she did take always laid heavy on her stomach; constipation was always more or less present, except when she took powerful purgatives, which very much weakened her. The syrup was prescribed in doses of a teaspoonful three times a day. In about a week she was much improved, and by the end of a month the menses recurred without pain, and in larger quantity than she had seen for weeks. From that time all her disagreeable symptoms had disappeared, and she has continued well ever since.

"Case 3.—A young man, suffering from carious softening of one of the bones of the wrist, and who had been long under medical treatment, as a last resource was recommended to take the syrup of superphosphate of iron. He did so with the greatest success. The wrist was subsequently injured a second time in playing cricket, and the disease recurred; he was again ordered to take the syrup of the superphosphate of iron, and the disease was again arrested, and the use of the wrist completely restored in a short time.

"Case 4.—A child two years of age, was affected with weak ankles, and to such an extent, that his walking powers were materially interfered with; his feet turned in and upon themselves continually. The syrup was suggested and tried, and in the course of a very short time, the ancles appeared to have acquired much power, the child being enabled to walk perfectly, uprightly, and firmly, upon them; the case indeed progressed to a perfect cure in about a month."

These cases tend to establish the truth of the theory, that the waste of *nervous energy* and *mental power* occurring in many diseased states of the system, arises from a deficiency of phosphorus and iron in the tissues of the brain and nerves, which this preparation is calculated to supply most promptly and adequately, presenting those substances, as it does, in a state of chemical combination most easily assimilated by the blood.

It is certainly known that iron and phosphorus are among the most important constituents of the body.

"The brain consists essentially of phosphoric acid and oil, and a due proportion of the first is necessary to the integrity of the mental functions. Iron exists in the blood as a phosphate, but *the digestive powers are sometimes so weakened that they cannot assimilate other preparations of iron, and convert them into the phosphate required.*" "In some cases of weakness the amount of the phosphates excreted, is so much greater than that contained in the food taken, that *the phosphates of the living tissues are preyed upon for a supply*, especially the brain, the richest in phosphorus of all the organs. Hence madness, *loss of memory*, and various other disorders of the mental organization."

"As in tubercular disease the fatty tissues are preyed upon, and cod-liver oil, and other highly carbonized substances, have proved useful in supplying the waste, so there are cases where the superphosphate of iron may act in a similar manner, by giving directly to the system the amount of phosphorus and iron necessary to prevent any injurious overdrain, and allowing time for recuperation by the natural forces."

The proportions of the syrup used in the above case, as of that prepared by myself, are *forty grains* of the phosphate of iron to each fluid ounce of syrup. This gives the full dose of five grains of phosphate to the teaspoonful, or fluid drachm. Its effects, as I have been informed by several of the physicians who have already tried it, are remarkably prompt in this dose. For children it is sometimes diluted with two or three times its bulk of simple syrup flavored with orange flower water, or with ginger or some agreeable fruit syrup. All the bitter and astringent tinctures and infusions unite with it without decomposition, so far as I have tried them, so that tincture of cinchona, rhatany, &c., may be prescribed with it in any desired proportion. Add to these facts that it does not injure the teeth or blacken the stools, and it presents advantages simply as an eligible mode so administering iron, apart from the theoretical claims adduced above, which must give it a high place.—[*Am. Druggists' Circular.*

[We feel much inclined to say here to our readers—"Read this again." It certainly presents matters of weighty importance for our consideration.—EDTS.]

On the Abdominal Typhus of Children. By Dr. EDMUND FRIEDRICH, of Dresden.

The following analysis of Dr. Freidrich's work on "Der Abdominal Typhus der Kinder," is from the pen of Dr. E. Noeggerath.

"The author," writes the reviewer, "having been for some years house-physician in the hospital for sick children of Dresden, Saxony, has made a collection of observations relating to typhus fever in children, which were taken partly from personal experience, partly from notes recorded in the day-books of the hospital. It comprises an analysis of 275 cases of typhus fever, occurring during twenty-one years, in a number of 14,868 children, which makes 1 out of 54, and speaks sufficiently for the importance of the disease in this age of life.

"In the historical portion of the work, the author points out the fact, that an accurate knowledge of this affection was first derived from German and French physicians, while there existed, even now, pretty incorrect notions of this disease among English authors, with the exception of Dr. Underwood.

"The following sections comprise very interesting and thoroughly elaborated articles, in regard to statistics, etiology, symptomatology, course, complications, diagnosis, prognosis, and treatment of the disease. In all these particulars, we find the author has fulfilled everything that could be expected of a man of his diligence and skill. In order to give the reader a correct idea of the work, we will endeavor to present a condensed statement of its contents, and the conclusions to which it leads.

"1. Abdominal typhus is by no means a rare disease among children, and is observed among them in a sporadic, as well as in an epidemical form.

"2. It more often attacks male than female children.

"3. The number of fatally ending cases is smaller among children than among grown people; and, again, greater among female than male patients.

"4. In the very first years of life the disease is rare; becomes more frequent from the second year, and reaches its greatest extent from the sixth to the eleventh year. From that it decreases again up to the time of puberty; mortality is greatest from the first to the fourth year.

"5. Boys generally die sooner from the disease than girls, because the fever commonly has a more rapid development among the first.

"6. Abdominal typhus and scarlet fever exclude one another, so that while one of these epidemics is raging, the other disappears, or is seen only in isolated cases.

"7. Typhus epidemics have been observed in small circuits, which seized exclusively upon children, while grown persons were not taken at all, or only in some isolated instances.

"8. The pathological lesions among children are about the same as in grown persons, especially in regard to enlargement of the spleen. But in children there is very rarely found a deposite of material in the intestinal tube, or genuine typhus ulcers. There are generally found only a few single infiltrated follicles in the glandular placques, which return to the normal condition, without even leaving a cicatrix, by a resorption of the infiltrated matter, or, more often, by rupture of the follicle opening into the intestinal tube. The rupture and discharge into the intestinal canal is generally observed only to a small extent. Moreover, the formation of ulcers in the mucous membrane of the pharynx, œsophagus, trachea, &c., is of rare occurrence among children.

"9. As decided causes of the disease, we have to consider poverty, uncleanliness, improper food, and, above all, impure air, and a damp, dark abode. Moreover, acclimatization, sudden change of the former mode of living, entrance into new conditions of life, have their influence upon the origin of the disease. Still, the most important point is the character of the epidemical constitution. Scrofula seems to be not favorable for the development of typhus fever among children.

"10. The most reliable symptoms are the tumor of the spleen, diarrhœa, meteorismus, and the abdominal gurgle. Fever, accelerated respiration, and catarrh of the bronchial tubes are equally constant symptoms. The scarce and trifling intestinal hemorrhages at the beginning of the disease establish the fact, that the local disease is unaccompanied by a severe congestion. Seldom does the typhus fever of children invade with chills, as is the case with grown people. Delirium and drowsiness are generally present, but not very intense. Roseola is often observed, not so much a papulous eruption, and at a later period, sometimes miliaria are seen. The extent of the exanthema does not seem to depend upon the intensity of the disease.

"11. Abdominal typhus generally appears in a milder form among children, its duration being from sixteen days to several months.

"12. Its complications with parotitis, phlebitis, and hemorrhages, are far more seldom odserved in children than in grown persons. During recovery, measles, smallpox, and other eruptions may be developed,

"13. The most common termination is recovery, which generally proceeds very fast, while tuberculous, gangrene, intestinal ulceration, abscess, or atrophy of the mesenteric glands are of rare occurrence among children. Tubercles, if present in

small quantities, seem to be liable to calcination during typhus fever.

"14. The most important points in diagnosis are the enlargement of the spleen, the roseola, the increased temperature of the skin, the diarrhœa, the meteorismus, the painfulness about the abdomen, the cœcal gurgle, the bronchial catarrh, the symptoms of cerebral disturbance, and the prevailing epidemic.

"15. The following symptoms are of the greatest importance in prognosis, which is generally favorable: the character of the epidemic, the external conditions of life, age, and sex. Complications and remaining diseases prove often more dangerous than the fever itself in its greatest intensity.

"16. Experience has taught that the expectant treatment is the best that can be pursued. It is impossible to cut short typhus fever; still, medium-sized doses of calomel, given from the fifth to the eighth day of the disease, have a decidedly good effect upon its course. Under all circumstances, we must spare the strength of the children, and let them have nutritious food in good season."—[*N. Y. Jour. of Med.*, and *Ranking's Abstract.*

Remarks upon the Treatment of Acute Internal Inflammations. By R. B. Todd, M. D., F. R. S., Physician to the King's College Hospital.

The case of Jane Cook, aged twenty-two, affords a good illustration of the phenomena of disease in its most acute form. She has had pericarditis in connection with rheumatic fever, some degree of endocarditis, and pneumonia with consolidation of about a fourth of the posterior part of each lung.

This patient is rapidly recovering, and, indeed, in an illness of unusual severity, she has had no serious drawback. On the 2nd of July rheumatic symptoms first showed themselves in pains and swelling of the lower joints. On the 6th of July a pericardial friction sound was first heard over the base of the heart, which soon became distinctly audible over its whole anterior surface. On the 7th bronchial breathing was heard at the posterior part of the lower third of the left lung, and on the 10th the right lung was similarly affected and to an equal extent. On the 12th vesicular breathing began to be audible in both lungs, and the bronchial breathing to disappear.

Now this patient was treated in the manner in which (with but slight modification) I have been for some years in the habit of dealing with similar internal inflammations, especially those of the lungs and heart. Although my practice in such cases is now pretty well known, and I am proud to think is practised by

very many of my pupils in various parts of this city and of the country, it may be useful if I take this opportunity of explaining to you the principles upon which it is based.

On admission, while yet it was uncertain how far the rheumatic symptoms would extend, she was treated with alkalies and mild saline purgatives. Bicarbonate of potass in doses of from twenty to thirty grains were given every four or six hours, and very soon opium was freely given, when the cardiac affection manifested itself. As much as one grain of opium was given every fourth hour. Care was taken to keep the bowels open by giving an aperient draught daily of sulphate and carbonate of magnesia. Counter irritation was employd over the situation of the inflamed lungs by means of stupes of flannel soaked in turpentine; these were applied twice or thrice a day, and the region of the heart was freely blistered.

A principal and very important part of the treatment to which, as most of you know, I pay very special attention, is that which I may call the dietetic portion. The object of this is to support the vital powers of the patient and to promote general nutrition, during the time when those changes are taking place in the frame which tend to check or to alter the morbid process, and to convert it into a healing process.

When a patient suffers from pneumonia, the tendency is for the lung to become solid, then for pus to be generated, and at last for the pus-infiltrated lung-structure to be broken down and dissolved. Such are the changes when matters take an unfavorable course. On the other hand, recovery takes place, either through the non-completion of the solidifying process, or by the rapid removal, either through absorption, or a process of solution and discharge of the new material, which has made the lung solid.

It will scarcely be affirmed, even by the most ardent believer in the powers of the Therapeutic art, that any of the measures which are ordinarily within our reach, such as the administration of certain drugs, or the abstraction of blood, or the application of blisters, exercise a *direct* influence in effecting these changes. Save in the case of antidotes, which directly antagonise the proximate cause of the morbid state, medicines promote the cure of acute disease by assisting and quickening some natural curative process. And he is the wisest practitioner, and will be the most successful therapeutist, who watches carefully the natural processes of cure—in other words, who studies the phenomena, both anatomical and physiological, which accompany them, and of which, indeed, they consist.

Let me therefore, exhort you to look very carefully to this as a part of your clinical study. If you will be on the look-out, you may often meet with cases of acute disease which recover with

little or no medical treatment, and you may observe and note the clinical phenomena which they exhibit.

Allow me to anticipate your observation on this point, and to point out what you may look for in cases of pneumonia, and what you will certainly find in almost every instance.

First, the hot, often burning skin, which is so generally present in the first stages of pneumonia, will be exchanged for one bedewed with moisture, generally to the extent of free sweating.

Secondly, along with this sweating process there will be one of increased flow of urine, and very often a free precipitate of brick-dust sediment, lithate of soda, more or less deeply colored.

Thirdly, not unfrequently expectoration becomes freer, the sputa are more easily discharged, they lose their characteristic reddish, rusty color, and often they become very profuse and even purulent. Now and then the purulent sputa are so abundant that it is difficult to imagine that they can have come from any other source than an abscess.

Fourthly, the chemical characters of the pneumonic sputa exhibit an interesting contrast with those of the urine. In the heights of the inflammatory state, the sputa contain common salt (chloride of sodium) in abundance, and the urine is entirely devoid of it. As the inflammation becomes resolved the salt returns to the urine and leaves the sputa.

Lastly, while all these changes are going on, the physiological functions which have been disturbed by the local malady, gradually approach their normal state. The quickened breathing, the accelerated pulse, the unnatural general generation of heat gradually subside. As all these admit of being measured by numbers, you should tabulate them in your records of cases, and you will find on each succeeding day (under such circumstances as I am now referring to) the figure assignable to each function gradually become lower until you arrive at the normal.

Now is it not plain from all this that the process of resolution of pneumonia is a distinct natural process, affected by the various physical agencies which are concerned in the nutrition of the lung? A material with clogs the air cells and minute tubes is removed, chemical changes of the most marked and obvious kind accompany the deposition and the removal of this material, and certain functions of excretion become strikingly augmented, as if for the purpose of getting rid of some noxious matter out of the circulation. A more exact and minute analytic chemistry than we have at present will, at some future time, beyond doubt, detect more minute changes in the blood, and determine the exact nature of the discharged matters.

One other remark I must make in connection with this subject. These acute internal inflammations are very often—I suspect always—connected with the undue prominence of some

peculiar diathesis—the gouty or the rheumatic, for instance—sometimes the scrofulous. Of these diatheses the main characteristic is the generation of some peculiar morbid matter which, when accumulated in undue quantity in this or that organ, gives rise to inflammation in it. And the determination of the morbid matter to the lung, or the pleura, to a joint or a muscle, will often depend on the direct influence of cold, or of an unwanted amount of exercise, or of some mechanical injury. The evil is to be remedied by the diminution of the intensity of the diathesis. This is done naturally, and is to be imitated artificially, by the elimination of the morbid element through the channels of augmented excretions, such as the sweat, the urine, and the secretions of the alimentary canal.

You will perceive, then, that my argument may be thus summed up. Internal inflammations are cured, not by the ingesta administered, nor by the egesta promoted by the drugs of the physician, but by a natural process as distinct and definite as that process itself of abnormal nutrition to which we give the name of inflammation. What we may do by our interference may either aid, promote, and even accelerate this natural tendency to get well; or it may very seriously impair and retard, and even altogether stop, that salutary process.

If, then, this view of the nature of the means by which inflammation is resolved in internal organs be correct, it is not unreasonable to assume that a very depressed state of vital power is unfavorable to the healing process. Indeed, if you watch those cases in which nothing at all has been done, or in which nothing has been done to lower the vital powers, you will find that the mere inflammatory process itself, especially in an organ so important as the lung, depresses the strength of the patient each day more and more.—[*Archives of Med.*, and *Amer. Med. Monthly.*

On the Treatment of Phagedœnic Ulcers by Irrigation. By Dr. J. Sutherland, Surgeon to the 8th Regiment of Native Infantry.

When Dr. Sutherland was putting this mode of treatment in practice in the regimental hospital at Dinapore, he was not aware that a similar mode of treatment had been adopted by Mr. Cock at Guy's Hospital (*v.* "Abstract," XXIV. p. 120). Dr. Sutherland was led to adopt this plan of treatment by an observation of the case first in order.

Cases.—A young soldier, a Seikh, had been under treatment for intermittent fever with enlarged spleen, and was taking iodide of iron and quinine; at this time a slight sore situated over the spleen took on a phagedænic character, spread rapidly,

and threatened to involve a large portion of the abdominal parietes; the usual treatment, constitutional and local, was adopted, with little effect in arresting the spread of the ulceration; there was considerable fever and great pain in the dark and inflamed ring around the sore, nitric acid had been applied without effect, and the patient was very importunate for relief; morphia was given at bed-time to allay pain and procure sleep; under these circumstances it occurred to me that benefit might be derived from a continuous washing away of the morbid discharge as it was formed, and that water, made slightly warm, would be a bland application to the extremely irritable sore; accordingly I decided on having a continued dripping of tepid water over the foul ulcerated surface; this was effected by allowing the water to flow along a skein of thread, one end being placed in a vessel of water above the level of the bed, another end of the thread (or, what answers the purpose nearly as well, a strip of calico) being placed over the sore.

The result of this treatment surprised me; an almost immediate arrest of the phagedænic ulceration took place, and pain and irritative fever quickly abated; from this time the cure was rapid, the sore granulated kindly, and in about ten days a large ulcerated space was filled up with healthy granulations.

The second case in which the remedy was used was equally satisfactory; the patient, a weak young man of a strumous diathesis and a constitution tainted with syphilis, had a bubo in the left groin, extensive sinuses (in the groin), had been laid open and the sore was healing favorably when it suddenly took on a phagedænic character and spread in all directions, forming an extensive sore, which, extending upwards, threatened to penetrate the abdomen; having observed the satisfactory result of a continuous dripping of water over an ulcerated surface in the case above detailed, I was led to subject this patient to the same treatment; the result was equally gratifying, an immediate arrest to the spread of the ulceration took place and the sore healed rapidly; quinine, ammonia, with tinctura opii, which had been given some days previous, were continued for a short time, but no other local remedy was used to complete the cure.

The third case was that of a sepoy of the ——N. I.; this man was admitted into the station hospital with an extensive ulcer on the right hip of eighteen months' standing; according to the statement of the patient, he had been fourteen months under treatment in his regimental hospital, and, all applications having failed to heal the sore, he got leave to visit his home that change of air might do him good; the sore becoming worse, he applied for admission into the station hospital in this place; the ulcer was superficial, with jagged edges and unhealthy flabby granulations; there were several small, deep, foul ulcers around

the large ulcer, at distances varying from one to five inches; the patient was, at first, very unwilling to submit to the treatment (as it required him to lie in a constrained position), asserting, with much appearance of truth, that he had not benefited by all that had been done for him before; he has been under treatment since the third instant, and the large sore has completely healed under the irrigating system, all the smaller ulcers have also healed, with the exception of two that could not be subjected to the treatment, owing to their position.

I think it probable, from the nature of the ulcers, that the addition of sulphas zinci or nitras argenti to the water would have expedited the cure, but I was unwilling to make the addition, as I wished to try the action of pure water alone on the sores.

[*Indian An. of Med. Science*, and *Ranking's Abstract.*

On the Treatment of Cicatrices from Burns. By Mr. SKEY, Surgeon to St. Bartholomew's Hospital.

On a recent occasion, we had an opportunity of seeing the plan adopted by Mr. Skey, at St. Bartholomew's Hospital, for removing the contraction of tissues consequent upon a burn. The patient was a little girl (Emma B——, æt. 6 years), the front of whose neck had been burnt some years before, and had so contracted as to produce a number of distinct bands, running from above downwards, without very great deformity. The contraction resulting from the burn was treated, whilst the girl was under the influence of chloroform, by making a number of short transverse incisions in various parts of the cicatrized tissues, which gaped as they were made. This plan Mr. Skey has found very efficacious in some eight cases, all of which have done very well. It has certainly the advantage over dissecting up portions of cicatrized skin, in that there is no danger nor risk of sloughing—an accident which not unfrequently makes a case worse than if nothing whatever had been attempted.

On a subsequent visit, we found these transverse healing well, without any appearance of contraction of the cicatrix. She lay upon a flat bed, with her head considerably lower than the shoulders, and the wounds are dressed with narrow pieces of strapping, so as to approximate the ends of a cut to each other—not the sides—and lengthen out the old cicatrix as much as possible.—[*Lancet*, and *Ibid.*

Diphtheritic, or Malignant Sore Throat.

Benjamin Godfrey reports four cases of this disease, and believes the order, in which its symptoms generally occur, to be this: Shivering; intense depression; dryness and tingling of

the throat, nares and ears; external swelling of the glands; a whitish spot on the mucous membrane of the tonsil, gradual deepening in color as the disease progresses; dysphagia and dyspnœa; dilated pupil; impending asphyxia, and death. The disease appears to Dr. Godfrey to be confined to the mucous membrane, neither touching the muscular nor glandular structure. The glandular enlargement is due to sympathetic irritation. Its diagnostic difference from scarlet fever consists in—1. The absence of all fever, 2. Absence of all rash, 3. Papillæ of the tongue not enlarged, 4. No desquamation of the cuticle after the disease passes off. In cynanche tonsillaris the abscess forms within the tonsil, and bursts its way out, but in diphtherite, the morbid change commences on the surface of the mucous membrane, and is confined solely to that covering. The extreme and rapid depression is only equalled by the depression of malignant scarlet fever, or the collapse of Asiatic Cholera. Each patient that died appeared to sink from exhaustion and partial asphyxia. The main point in the treatment is to support the patient's powers, by stimulants and tonics; and to check the inroad of the disease by the application of the strong mineral acids. Tracheotomy is unsafe, because the depression of the patient's powers is far greater than the dyspnœa, and the depression, while appearing before the dyspnœa, cannot result from the blood being improperly aërated. Dilatation of the pupils existed as a marked symptom in every case. Dr. Godfrey believes the tincture of sesquichloride of iron the best remedy.

[*London Lancet.*

On the Prevention of the Ill-consequences of Operations. By Prof. Deboubaix.

Professor Deroubaix, Surgeon to the St. Jean, Brussels, terminates a series of papers upon this subject with the following summary:

1. It is the duty of a surgeon to seek, by the improvement of his operative procedures, to obviate the immediate accidents of operations, the endeavor to discover the means of prevention of the secondary accidents, which are far more dangerous, is still more imperiously demanded at his hands.

2. Could the great surgical operations be rendered less dangerous in themselves, the intervention of surgery would be much more clearly and more frequently indicated in cases where the practitioner now often is obliged to remain a passive spectator of disorders which infallibly prove fatal.

3. The danger of great operations is not due to the size of the surfaces concerned, but to the number and volume of the veins divided.

4. When the division of veins proves mischievous, it does so by giving rise, through a mechanism the nature of which it is not always easy to appreciate, to the production of purulent infection, one of the most fearful consequences of traumatic lesions. The great danger and extreme frequency of this complication justify the efforts made for its prevention or removal.

5. There are two directions, both perhaps equally good, by following which we may succeed in rendering pyæmia of much less frequent occurrence. The first of these consist in improving and rendering less uncertain the process of healing by the first intention; and the second in so modifying the divided surfaces as to convert them into a lesion of continuity of far less dangerous character.

6. Metallic caustics, at least in the immense majority of cases, do not give rise to purulent infection; but they are not applicable to certain operations—as, *e.g.*, amputations.

7. It is rational, then, when seeking for substitutive or modificatory means for the prevention of pyæmia, to resort to such as most resemble caustics in their mode of action, and yet are exempt from the disadvantages of these therapeutical agents.

8. The tincture of iodine would seem to possess properties enabling it to fulfil these indications, seeing the deep-seated modification it impresses on the tissues, and the plastic effects it gives rise to. It does not act upon the ligatures, and therefore does not give rise to the danger of secondary hemorrhage. When it is applied to bleeding surfaces after an operation, it induces a general hyposthenic effect of short duration, and a local hyposthenic effect, which imparts peculiar characteristics to the granulations and cicatrization.

9. The most remarkable results of this hyposthenization are, the much less indolence of the wound, the slight amount of suppuration, the notable diminution of the general reaction, and the maintenance of a condition approaching that of health. These phenomena offer no impediment to rapid cicatrization.

10. The discharge from the surface of the wound is considerably diminished as a consequence of the application of the tincture; but this does not prevent artificial hemorrhage, or the loss of blood from the large veins.

11. The putridity of the wound becomes evidently diminished; and when the tincture is applied to the divided extremities of the veins, these become corrugated and narrowed, and then agglutinated. If phlebitis arises, it is obliterative and adhesive, not suppurating.

12. The application of the tincture to the sawn surface of the bones does not lead to necrosis.

13. The tincture imparts no preservative power against pyæmia when an open venous orifice, through which pus may be

easily, so to say, mechanically introduced, exists at any point of the surface.

14. In ordinary cases, even the tincture is no certain preventive of purulent infection. When, after it has been applied, we find the vicinity of the wound remaining very painful, we should suspect a commencement of phlebitis, and the course of the pain should be carefully inquired into.

15. It should be remarked, that as the general hyposthenization which results from the application of the tincture exhibits itself in symptoms, comparable to a certain point to those produced by chloroform, prudence is required in the simultaneous or successive employment of the two substances. Perhaps this is the principal defect of the iodine.

16. The injection of the tincture into the veins is immediately fatal. It induces an entirely peculiar coagulation of the blood, incapable of being confounded with any other pathological or spontaneous coagulation.

17. Nevertheless, this medical substance cannot, when applied to a bleeding surface, be carried in substance into the current of the circulation, unless, indeed, venous orifices be maintained open by adhesions. It is absorbed in the state of an alkaline iodide, and may be found in such a state of combination in the blood and urine. The amount ordinarily absorbed exerts no ill-effect upon the economy.—[*Presse Med. Belge*, *Med. Chir. Rev.* and *Ranking's Abstract.*

On the Treatment of Ununited Fracture. By Mr. Syme, Professor of Clinical Surgery in the University of Edinburgh.

"When there is merely a slight degree of mobility at the seat of injury, so that, although quite sufficient to prevent any useful exercise of the limb, it may require some care for its detection, there will be a favorable prospect of success, even after the expiry of several months, through the employment of means for the complete prevention of motion; and I have put upon record cases in which even the thigh-bone was rendered perfectly rigid by this simple expedient, in circumstances of apparently a very hopeless character, from the long duration of flexibility. But when the extremities of the bone remain quite separate, or even overlap each other, and are surrounded by a sort of fibrous capsule with cellular interstices, so that they admit of hardly less free motion than if there really were a joint between them, it is evident that merely preventing motion could not possibly prove sufficient for the production of an osseous union. It has been supposed, that the difficulty thus presented might be overcome by rubbing the ends of the bones together; by stirring up the texture connecting them through the agency of needles or teno-

tomy knives; by passing setons through the flexible medium of union; and by inserting pegs of ivory into the respective osseous surfaces. But, so far as I am able to form an opinion on the subject, all of these means are absolutely useless, and owe any share of credit that they may have acquired to the prevention of mobility which is conjoined with their employment. In short, I believe that the procedures in question cannot accomplish recovery in any case not remediable by the enforcement of rest, and that they consequently, must always be useless, if not injurious. There is still another mode of treatment, which consists in cutting off the ends of the bone, so as to obtain two fresh osseous surfaces, and place the limb in a condition similar to that of a compound fracture recently inflected; and this, I feel persuaded, affords the only reasonable ground for expecting success in cases not amenable to the influence of immobility. It is true that the experience of this method has not hitherto been at all satisfactory, through want of due attention to some circumstances in the mode of procedure, which must in a great measure determine the result. Of these may be specially mentioned an imperfect removal of the ends of the bone, and a want of complete immobility after the operation. The following case will, I hope, tend to illustrate the importance of attending to these points.

Case.—"J. H....., æt. 34, a private of the —— Foot, while discharging some duty in the Redan, on the 8th of December, 1855, after the occupation of Sebastopol, was blown up by a Russian mine, which had escaped detection, and, in addition to some slighter injuries, sustained a fracture of the left arm between two and three inches above the elbow. He walked up to his regimental hospital, where splints were applied, and retained for a month, when, there being no signs of union, the ends of the bone were rubbed together, and supported by a starched bandage. He left the Crimea on the 3d of February, and was sent to the hospital at Renkioi, where a seton was passed through the seat of fracture, and retained for five weeks without any benefit. On the 20th of May he proceeded homewards, and, after a long voyage of nearly two months, arrived at Portsmouth, whence he was transferred to Chatham on the 17th of July. No attempt to restore rigidity was made there, and at the end of two months he was dismissed the service, with a pension of one shilling per day, in consideration of his disability, which was regarded as equal to the loss of a limb.

"In the hope that relief might still be afforded, he applied to me on the 22nd of January last, nearly fourteen months from the date of the injury; and finding that the arm was entirely useless through the extreme mobility of the ends of the bone, which overlapped each other to the extent of more than an inch,

I resolved to adopt the only procedure that, in my opinion, afforded any reasonable prospect of remedy under such circumstances, which was to remove the ends of the bone, and afterwards maintain the most perfect rest. In preventing the motion of a joint, it is a most important principle, never to be forgotten, that as most of the muscles pass over two articulations, it is impossible to keep any one perfectly quiet without placing the whole limb under restraint. Proceeding under this impression, my first step was to have the arm put in an easy position, with the elbow bent at a right angle, and then covered from beyond the shoulder to the tips of the fingers with pasteboard and starched bandages, so as to form a case, which, when it became dry, effectually prevented the slightest movement in any of the joints. This case was next cut up on one side from end to end, so as to allow the arm to be taken out of it, and undergo the requisite operation, which was performed under chloroform. An incision having been made along the outer edge of the triceps, I exposed the upper end of the bone, and sawed off a portion of it sufficient for obtaining a complete osseous surface. The lower end, lying anterior to the shaft in a sort of capsule, could not be subjected to the saw, but was removed, to the extent of more than an inch, by cutting pliers. The arm was then supported by a couple of splints, and the patient lay quietly in bed for a fortnight, when the limb was placed in its pasteboard case, in which an aperture had been made over the wound then nearly healed, and discharging a very little matter, that soon ceased entirely. The patient, feeling that the slightest motion was impossible, even if he had wished it, was relieved from any further restraint, and no longer remained in bed. At the end of a month, or altogether six weeks from the date of the operation, which was performed on the 30th Jannary, the limb was examined, and found to be quite straight, with a firm osseous union; so that the patient was able to leave the hospital, not only with his comfortable pension, but also with a perfectly useful arm."—[*Edinburgh Med. Jour.*, and *Ibid.*

Reproduction of Bones and Joints after their Removal in cases of Whitlow.

Some time ago Dr. Toland, of California, claimed the discovery of this important fact in surgery. In the February number, 1858, of the Buffalo Medical Journal, we find, however, that to Professor Dudley, of Lexington, Kentncky, is due the credit of having made the discovery, and to Professor Hamilton, of Buffalo, N. Y., is due the credit of having first promulgated the idea through the medium of the medical journals. Doubtless we shall soon have some more discoverers in the field. But this is all right. We say, "honor to whom honor is due."

During five years practice in the country, it was our lot to encounter a great number of these cases of paronychia among the plantation negroes. Indeed, strange as the idea may seem to some, we are sure of having witnessed the disease once in an *epidemic* form. Throughout an entire neighborhood the disease was strictly prevalent, and we can now call to mind several negroes who lost the first phalanx of two or more fingers in one season. Of course the vast majority of the cases lost the first phalanx, as every overseer and old woman in the country imagine themselves fully competent to treat, or rather *cure* whitlow or bone felon. When the doctor is called in, the bone is loosened from its attachments, and he has no alternative but to remove it. When we first encountered the cases, such was the degree of the disease of the surrounding tissues, we amputated the end of the finger; but observation soon taught us that this procedure materially diminished the value of the cotton-picker, as the finger was not only considerably shortened, but the stump, unprotected by the nail, was continually subject to injury. We then resorted to the plan of picking out the dead bone, and the only deterioration the hand suffered was comparatively slight shortening of the finger. In no instance have we ever seen any thing approaching reproduction of the bone—and this notwithstanding we have carefully supported the finger by means of splints and bandages.—[*N. Orleans Med. News and Hosp. Gaz.*

On a Case of Transfusion, By John Wheatcroft, Esq., M. R. C. S., L .S. A., Cannock.

In the *Lancet* of October, there appeared a case of transfusion of blood, which operation I again performed successfully on the 25th inst. The following are the particulars:—

I was summoned to see Mrs.——, aged thirty-two, on the 24th instant. I found her in an almost exsanguined condition. A terrible gush of blood per vaginam had suddenly occurred, followed by coagula two or three pounds in weight. Her neighbors with difficulty got her up stairs, and again hæmorrhage set in frightfully. I found her lying on the bed in a state of great exhaustion; face white and anxious; lips blanched; skin and extremities cold; pulse small, very feeble, and rapid, 120 per minute.

I immediately plugged the vagina, administered the yolk of egg with a little brandy, enjoining upon the attendant strict attention to the ordinary methods adopted in uterine hæmorrhage. On visiting the case four hours afterwards, I found the plug right, and the bleeding had been arrested; a little more colour in the lips; the pulse 100, but small and thready; complained much of giddiness and severe uterine pain: she was three months advan-

ced in pregnancy. I then gave her small doses of tincture of opium, but vomiting having supervened, every dose, together with the egg, was rejected. Small doses of sulphuric ether arrested the sickness. I left her, apparently going on favorably, but in four hours was again hastily summoned. She had complained of severe expulsive pain, violent retching accompanied it, and expelled the plug, together with a large coagulum; the flooding recommenced, and I found her lying in a large pool of blood. I could detect no fœtus either in the bed or the vigina; the os uteri was too high to be reached; the skin and extremities had again become cold, the surface of the body as white as snow; pulse almost imperceptible; the breathing gasping; face very anxious; great restlessness; loss of vision; eyes sunk and leaden.

Ably assisted by J. Blackford, Esq., and Mr. Samuel Wheatcroft, I transmitted about two pounds of blood from the husband. The change was immediate (I had previously replugged the vagina;) the colour returned to her lips, the eye became brilliant, the pulse distinct and firm, the restlessness vanished, the breathing became normal, and she now looks, with the exception of her whitened skin, as well as I ever saw her. Although complaining of giddiness and tightness across the brow, she is quite cheerful. The fœtus has not been expelled. I have removed the plug, and there is not a drop of blood to be seen. The plug here was as valuable as the transfusion.

Permit me to suggest the trial of this operation in the last stage of low typhus and the colapse of Asiatic cholera when every other means have failed.—[*London Lancet.*

Pulmonary and Bronchial Tuberculosis.

Every physician acquainted with the methods of physical exploration—and we readily believe every one is now-a-days—ought to know, that tuberculosis is not at all uncommon in children. The symptoms are generally known; the prognosis not so unfavorable as in adults. This statement is affirmed by Dr. J. Schwartz, of Berlin, who reports to have repeatedly succeeded, by careful regulations as to their diet, and some well-adapted pharmaceutical remedies, in restoring to health children of from two to five years, who were already considerably emaciated, and subject to hectic fever. Against the attack of hectic fever he warmly recommended, as Skoda did before him, the sulphate of quinine, with small doses of Dover's powder. Besides, he gives cod-liver oil and armara, which he says are too little thought of in our time, and have been too readily forgotten.—[*Journal für Kinderkrankheiten*, and *N. Y. Jour. of Med.*

EDITORIAL AND MISCELLANEOUS.

Medical College of Georgia—Appointment of Professor Joseph Jones.—The Chair of Chemistry and Pharmacy in the Medical College of Georgia, recently vacated by the resignation of Professor Means, has been promptly filled by the unanimous election of Dr. Joseph Jones, Professor of Chemistry and Physics in the University of Georgia, and formerly, Professor of Medical Chemistry in Savannah Medical College.

Dr. Jones has for years, most ardently devoted himself to original Chemical and Physiological Investigations. His labors have been crowned with such brilliant success, that to praise them, on the present occasion, could not certainly add to their universally acknowledged merit. His contributions to Chemical and Physiological Science have been presented to the Profession in papers bearing the following titles:

1st. Abstract of Experiments upon the Physical Influences exerted by Living, organic and inorganic, Membranes upon Chemical Substances passing through them by Endosmose. Read before the Academy of Natural Sciences, Philadelphia, October 25th, 1854. [Accompanied by lithographic illustrations from original drawings by the author, from appearances under the microscope.]

2nd. Observations upon the Kidney and its Excretions in different animals. Published April, 1855, in the American Journal of Medical Sciences. [With twenty wood cut illustrations.] Pp. 42, 8vo.

3rd. The Digestion of Albumen and Flesh, and the Comparative Anatomy and Physiology of the Pancreas. Published in the Medical Examiner, Philadelphia, May, 1856. Pp. 20, 8vo.

4th. Physical, Chemical, and Physiological Investigations upon the Vital Phenomena, Structure and Offices of the Solids and Fluids of Animals. Published in the American Journal of Medical Sciences, Philadelphia, July, 1856. Pp. 64, 8vo.

5th. Investigations Chemical and Physiological, relative to certain American Vertebrata. Referred by the Smithsonian Institute to Professor Samuel Jackson, Professor Joseph Leidy, and Professor Jeffries Wyman, with Professor Joseph Henry, Secretary of the Institute, as Commissioners; accepted by them March, 1856, and subsequently published by the Smithsonian Institute. 4to., pp. 137. [This work is embellished with 27 wood cut illustrations. It was published and distributed at the expense of the Institute.]

Prof. Jones is a native of Liberty county, Georgia. He relinquishes his chair in Athens, where his relations have been of the most agreeable

and encouraging character, for the sole purposes, as he states, of devoting himself more entirely, than he can at present, to Medical Science in its Chemical and Physiological departments, and with the view of assisting in elevating the standard of Medical attainment at the South. He will make Augusta his place of residence, and his course will be eminently *practical* and *instructive*, especially in the important departments of Medical, Physiological and Pathological Chemistry.

In the next number of this Journal, we shall present to our readers an elaborate and most valuable contribution from his pen, on the subject of the Chemical and Physiological Relations of the Blood to Diabetes. As Editors, we congratulate our readers and ourselves, on so valuable an accession to our corps of contributors.

American Medical Association.—The eleventh Annual Meeting of the American Medical Association, will be held in Washington City, on Tuesday, the 4th day of May, 1858.

The American Medical Association has, for years, ceased to be an experiment; its wise deliberations, its judicious suggestions for the advancement of medical science, and for the improvement of medical education and medical ethics, have fully vindicated its right to be considered, the highest and most authoritative tribunal, in the medical sciences, in the land. The time is *past*, when it may be doubted that its efforts have wrought an improvement in the status of the profession; there are too many evidences of the diligent investigation and research, of independent experimentation, directly growing out of the spirit which this body has infused, for it to be longer doubted, that it has done *much* good. No one will hesitate to admit, that since its establishment, American medicine has assumed a form, and presents a character of its own and a spirit of its own, highly progressive, energetic—indeed, American. Not only is this change witnessed at home, but is observed elsewhere. The valuable Transactions of this Association are distributed everywhere, and may be now found in the Libraries of the Scientific Institutions, throughout Europe. It is important then, that this body should, in its present dignified position, use great care and judgment in its deliberations. There are many important questions to come up before them at Washington—some of these are vitally connected with the interests of the Profession. We have not time nor space at present, however, to present any of these subjects properly, and therefore close our remarks with the confident hope that all questions will be discussed and determined in the best and wisest manner for the general good of the Profession.

Medical College of Georgia—Annual Commencement.—The undiminished prosperity of the Medical College of Georgia, even under the multiplication of institutions throughout the country, we are sure, must be a subject of great satisfaction to its many friends and alumni, and also to those engaged in a liberal competition in the same field. At the last Commencement, the degree of Doctor of Medicine was conferred on sixty-one candidates, whose names we take pleasure in here recording:

Toliver Dillard,	of	Georgia.	J. H. Ruddell,	of	Georgia.
Henry Kinnebrew,	"	"	L. C. Wisdom,	"	"
J. J. Denson,	"	"	Wm. Hadden,	"	"
A. G. V. Doney,	"	"	R. B. McRee,	"	"
A. H. Mathers,	"	Florida.	W. A. Childress,	"	"
R. J. Healey,	"	Alabama.	J. Y. Bradfield,	"	"
S. M. Simmons,	"	Georgia.	P. L. Blakely,	"	S.Carolina.
Wm. J. Colley,	"	"	G. W. Chisholm,	"	Georgia.
J. W. Lowman,	"	S. Carolina.	G. W. Pitts,	"	"
A. H. Read,	"	Alabama.	H. W. Culver,	"	Alabama.
R. C. Johnson,	"	Georgia.	E. G. Scruggs,	"	Georgia.
A. J. Speer,	"	S. Carolina.	R. M. Hitch,	"	"
J. L. Rucker,	"	Georgia.	J. B. Harvley,	"	S.Carolina.
A. J. Flowers,	"	"	J. R. McAfee,	"	Georgia.
W. R. Armor,	"	"	J. F. Donehoo,	"	"
T. A. Raines,	"	"	H. C. Edmunds,	"	S.Carolina.
J. T. Sego,	"	"	J. H. Gibson,	"	Florida.
A. A. Delaigle,	"	"	E. G. Kirkland,	"	Georgia.
S. B. Mills,	"	"	B. S. Hudson,	"	"
J. W. Rhodes,	"	"	J. F. Martin,	"	"
A. T. Jenkins,	"	"	John Herren,	"	Alabama.
B. F. Stanley,	"	"	J. M. Howell,	"	Georgia.
S. W. Gardner.	"	Mississippi.	J. S. Smith,	"	S.Carolina.
Wensley Hobby,	"	Georgia.	J. W. Traylor,	"	"
J. S. W. Johnson,	"	"	Solomon Newson,	"	Georgia.
J. R. Cox,	"	"	M. R. Cassaday,	"	Alabama.
T. A. Power,	"	S. Carolina.	T. O. Powell,	"	Georgia.
G. W. Coxwell,	"	Alabama.	S. A. Tomkins,	"	S.Carolina.
Patrick Todd,	"	S. Carolina.	F. A. Driver,	"	Alabama.
W. B. Reynolds,	"	Georgia.	J. D. Patten,	"	S.Carolina.
J. S. Johnson,	"	Alabama.			

R. M. Tindall, M.D., of Mississippi, a graduate of Memphis Medical College, was also admitted adeundem gradum by the Board of Trustees.

Savannah Journal of Medicine.—We have just received the Prospectus of the above new Journal. It will be published bi-monthly, in Savannah, and Edited by Juriah Harriss, M. D., Professor of Physiology in Savannah Medical College, and J. S. Sullivan, M. D.—with R. D. Arnold, M. D., Professor of Principles and Practice of Medicine in Savannah

Medical College, as associate Editor. We wish for this Journal *in prospectu*, a safe and speedy birth, and from the character and ability of its Editorial corps we may hope for it a successful career. We will present our readers with a more extended notice when we have seen the first number, and we will be happy to place it upon our exchange list.

A Syllabus of Lectures on Materia Medica: delivered at Atlanta Medical College, by J. G. Westmoreland, M. D., Professor of Materia Medica, &c., in that Institution.

We have received, through the courtesy of the author, the above volume. It is creditably gotten up, and presents a compendious resumé of the author's Lectures, and will doubtless be found of much assistance to those attending Lectures in the Atlanta Medical College.

Medical Society of the State of Georgia.—The next annual meeting of our State Medical Society will be held at Madison, on the second Wednesday in April.

We quote the following from the minutes of the last meeting, held in this place, in order to remind the several Essayists of their respective appointments:—

"The Committee on Essays, made the following report of Subjects and Essayists for the next meeting—which was received and adopted.

Dr. J. G. Howard, of Savannah—On Uterine Disease.
Dr. E. J. Roach, of Pulaski—On the Propriety of Surgical Operations about the Joints.
Dr. H. F. Campbell, of Augusta—On the Rectal Administration of Medicine.
Dr. J. M. Green—On the Value of Escharotics in the Treatment of Cancer.
Dr. R. D. Arnold, of Savannah—On the Pathology and Treatment of Yellow Fever.
Dr. Ira E. Dupree, of Twiggs—On the Treatment of Prolapsus.
Dr. Eben. Hillyer, of Atlanta—On the Physiology of Menstruation.
Dr. V. H. Taliaferro, of Atlanta—On Obstetrical Surgery.
Dr. N. F. Powers, of Thomson—On Diseases of the Skin.
Dr. W. S. Meire, of Madison—On the Use of Alcohol in Typhoid Fever.
Dr. R. Campbell, of Augusta—On Wounds of the Abdomen.
Dr. I. P. Garvin, of Augusta—On Nervous Irritation of the Stomach.

Voluntary Communications from any member of the Society are earnestly requested, and will be gratefully received."

We sincerely hope there will be a full attendance, and that the contributions, both by appointment and voluntary, will exceed those of any previous meeting.

Our Exchanges.—Editorial Changes, Fusions, Enlargements, &c., &c.—We are much gratified to see that there has been great improvement in the character, style and spirit of our exchanges generally. American Medical journalizing, we may indeed feel proud of. There is manifested on the part of contributors, much improvement in the way of research and independent investigation; and also on the part of Editors, great industry, discrimination and courtesy; each to a degree, we think we may safely say, with few exceptions, unsurpassed by any period during the last ten years. We sincerely regret, that the suggestion made some years ago by our able predecessor, Prof. L. A. Dugas, of some periodical work annually or semi-annually, embodying the contributions of American Physicians, has not been more fully carried out. A work entirely and strictly devoted to this object would be of great value to the readers and writers of this country, and would greatly enhance the credit and reputation of American writers among their brethren in Europe. The *American Journal of the Medical Sciences* (of which we present no distinct notice at this time), has for years, with great fairness, presented a careful abstract of all American contributions which the editors deemed worthy of record; but we conceive that the republication of *entire articles*, which could only be done in a work devoted to the purpose, would better compass the above object, than any other plan which could be adopted.

The North American Medico-Chirurgical Review.—This excellent Bi-monthly comes to us in an improved dress. The January number, which contains over two hundred pages, presents many valuable Reviews, Criticisms and Analyses of works, besides much valuable original matter. In the Report of their able collaborator, Prof. S. Weir Mitchell, on the Progress of Physiology and Anatomy, we find that a new feature is introduced, which will enhance the value of the journal. "It is proposed," says the reporter, "in future, to present once a year, a complete analytical Review of the general progress of Physiology and Anatomy. At the same time, and as an essential part of this task, we shall endeavor to point out with care whatever advances in these sciences are due to the annually increasing labors of our own countrymen." We have been not a little surprised, that so discriminating a reporter as Dr. Mitchell should have been content with only a frequent reference, to the articles of Professor Joseph Jones, of Georgia, and that he did not embody a full abstract of his views and results; for his, have certainly been the most elaborate, thorough and creditable experimental investigations into the chemical changes of the blood and other fluids of animals, which have ever been presented, so far as we are aware of, by any American Physiologist. It may be said, however, that it is probable that their

great bulk and the permanent form in which these have been published by the Smithsonian Institute, rendered their presentation in the present report, a matter both of great labor and at the same time a work of supererrogation.

We are much gratified at the favorable notice taken of Dr. W. A. Hammond's laborious and almost self-immolating investigations on the "Nutritive Value and Physiological Effects of Starch, Gum and Albumen," as presented in his Prize Essay before the last meeting of the American Medical Association. And lastly, we may be here allowed also to express our gratification at the manner in which he has been pleased to allude to our own humble labors.

We take great pleasure in commending the above Bi-monthly Review to the favorable consideration of our readers, for its able review articles, for its analyses, and for other valuable matter, more particularly suited to this more permanent form of periodical medical literature.

The Charleston Medical Journal and Review.—This valued exchange, has recently passed from the hands of its former able Editor, Dr. C. Hapholdt, and will hereafter be edited by J. Dickson Bruns, M. D. Dr. Bruns is most favorably known to the Profession as the author of a most interesting and able pamphlet, entitled, "Life; its Relations, Animal and Mental." We congratulate the readers of this Journal upon his accession to the chair Editorial. It is published by-monthly.

The Nashville Journal of Medicine and Surgery.—Professor Paul F. Eve has retired, and Professor W. K. Bowling has associated with him in the Editorial conduct of this valuable work, Drs. R. C. Foster and George S. Blackie, as assistants. We heartily wish our friend, Dr. Eve, all the *otium cum dignitate* of retirement, and welcome the other distinguished gentlemen most cordially into the *body Editorial.* We congratulate Dr. Bowling that he still finds pleasure and satisfaction in his literary labors, and ourselves, that we still find *him* among our confreres.

The American Medical Monthly, published in New York, and The American Medical Gazette, also published in New York, have, like our own Journal, been benefitted by an addition to the number of their pages, without any change of Editors.

The Cincinnati Medical Observer and The Western Lancet have united under the title of "Cincinnati Lancet and Observer." The present work will be edited by Prof. George Mendenhall, John A. Murphy, M. D., and Edward B. Stephens, M. D. Drs. Blackman and Lawson, both able journalists, have withdrawn, but there can be no doubt, that the present work will be ably sustained by their successors.

The Peninsular Journal of Medicine and The Medical Independent, both published at Detroit, Michigan, have effected a happy union. The Independent was sustained for one year by our friends, Prof. Moses Gunn and L. G. Robinson, M. D., and now becomes amicably incorporated with its competitor, under the comprehensive title of "*The Peninsular and Independent Medical Journal.*" May this friendly adjustment of their mutual difficulties serve to inspire the *Peninsular*, with a spirit of amiability and liberality towards its more distant *confreres*, and may the *ink* "spilt" in the former contests of these two journals, serve, like the blood of Patriots, to cement more firmly their present union. This is but "the expression of a pious wish." We regret that Professor Zina Pitcher, the late distinguished President of the American Medical Association, is no longer in this corps of editors; we hope that his retirement may be as happy, as his editorial life has been courteous, dignified and useful.

The New Orleans Medical News and Hospital Gazette, one of our most valuable exchanges, has undergone a change of Editors, and is now under the management of Profs. D. Warren Brickell and E. D. Fenner. This journal, from its commencement, has been most ably conducted, and the recent association of our excellent friend, the veteran Fenner, in its Editorial conduct, augurs well for its future success. Dr. Fenner has the credit of having been the first to establish a Medical Periodical in New Orleans. The several volumes of his "Southern Medical Reports," are most useful contributions to Medical Science, as well as enduring monuments of the persevering industry and great ability of their author.

The New Orleans Medical and Surgical Journal.—This excellent Bi-monthly Journal and Review still maintains its high position in the comparative estimation of our exchanges. The work has passed into the hands of Drs. W. Stone, J. Jones, and S. Chaillé, who have also become assistant Editors, while Dr. Bennett Dowler still retains the position of Editor-in-chief.

The Memphis Medical Recorder.—We have on a former occasion noticed the resignation of Prof. A. P. Merrill from the Editorship of this journal, and also at that time signified our great satisfaction with the appointment of our friend, Professor Daniel F. Wright, to that position. Whatever may be the future changes and improvements in this highly useful and creditable work, we here earnestly express the wish that he may still wield a pen for its pages, and long remain as now, our valued and courteous confrère.

The Southern Journal of the Medical and Physical Sciences.—The Editor of this Journal, Professor R. O. Curry, of Knoxville, Tenn., who has ably sustained the work for several years, suggests certain changes in its arrangement and management, which will be doubtless beneficial to himself and to the journal. As the work has as yet undergone no change, we defer, till some other number, a more extended notice of it.

The Medical and Surgical Reporter.—We have just seen, in the Boston Medical and Surgical Journal of March 25th, that "the *Reporter* is about to be removed from Burlington, N. J., to Philadelphia, and that Dr. William B. Atkinson, of the latter city, who has for some time past been a regular contributor to its pages, will be associated with Dr. Butler in its editorial management." We think, too, that Philadelphia presents a good opening for a monthly journal. The Reporter has ever been an agreeable visitor with us, and whether it comes from Burlington or from Philadelphia, we shall greet it with the same welcome.

There have occurred doubtless other changes in our exchanges, which we at present omit from their having escaped our notice—as they occur to us, we will take great pleasure in recording them.

Forensic Medicine.—M. Collongues, in a note presented to the *Académie des Sciences* (*Comptes Rendus*, 21st Dec., 1857, p. 1048), points out the usefulness of knowing whether there is a peculiar sound or not to be found if death exists. He has already announced that during life there is in all the parts of the body a peculiar sound, which may be heard easily by the application of the ear, or with the help of a very small stethoscope. This sound disappears after death, but not immediately. It may last five, ten, and even fifteen hours after the last beating of the heart. It disappears gradually, and according to the author, its complete absence from all the superficial parts of the body, is a positive sign of death. In an amputated limb it persists a few minutes.—[*New York Journal of Medicine.*

Fistula in Ano in Relation to Pulmonary Tuberculosis. By P. H. Strong, M. D.—Dr. Strong embodies in the following formula the doctrine generally held with regard to this subject:

"The relations of fistula in ano to pulmonary tuberculosis are such, that its presence, either as antecedent to or coexistent with the latter, is a desideratum, and to be sedulously cherished, having reference to its (pulmonary tuberculosis) prevention in the one case, and to its cure or favorable modification in the other."

Dr. Strong argues against the correctness of this doctrine, *first*, that it is based mainly on the belief of a revellant influence being exerted by the fistula, while an enlightened pathology and clinical observation teach

that such an influence is of little or no value in preventing or retarding the progress of pulmonary tuberculosis; *second*, other and kindred affections, scirrhus and melanosis, depending alike on a blood dyscracy, are not affected generally by revellent or derivant discharges; *third*, the doctrine originated when erroneous views prevailed respecting the causes, nature, and management of tubercular affections.

Conceding that tubercular matter is discharged, as it were vicariously, by means of the fistula, he contends that the proper object for therapeutics in this affection is not to eliminate the material, but to remedy the dyscrasy, by removing the condition on which it depends.—[*Buffalo Med. Journal.*

Discovery of the Tomb of Hippocrates.—The *Esperance* of Athens states, that near the village of Arnaoutli, not far from Pharsalia, a tomb has just been discovered, which has been ascertained to be that of Hippocrates, the great Physician, an inscription clearly enunciating the fact. In the tomb a gold ring was found, representing a serpent—the symbol of medical art in antiquity—as well as a small gold chain attached to a thin piece of gold, having the appearance of a band for the head. There was also lying with these articles a bronze bust, supposed to be that of Hippocrates himself. These objects, as well as the stone which bears the inscription, were delivered up to Housin Pasha, governor of Thessaly, who at once forwarded them to Constantinople.—[*Late Foreign paper.*

A Compliment to the Doctors.—Dr. Jackson, the elder, of Boston, meeting his old friend Josiah Quincy, (both past eighty years of age,) on the side-walk, accosted him with, "Well, Mr. Quincy, how much longer do you intend to live?" "Till I send for a doctor," was the quick reply. "And when did you send for one, last?" inquired Dr. J. "Just eighty-six years ago!" answered Mr. Quincy, adding the precise date of his birth.

A young man in Georgetown, D. C., who last week took four grains of Strychnine for the purpose of committing suicide, was saved by the inhalation of an ounce and a half of Chloroform. Either of the doses would have killed him separately—between them both, he lived.—[*Druggist's Circular.*

Glycerine.—Dr. Cotton, of Brompton Hospital, has employed this article exclusively, and testifies against its efficiency in phthisis, pronouncing it greatly inferior to cod-liver oil.—[*American Med. Gazette.*

Supra-renal Capsules.—The cogenital absence of these organs has been found in a man, who always had a *white* skin, lived up to 40 years, and died of a malady of the chest. He worked as a joiner, was married, and had three sons. (See *Glasgow Med. Journal* for July last.)—*Ibid.*

Value of a Young Lady's Teeth.—The Paris courts value a young lady's teeth at 8,000 francs. An English governess was recently knocked down by a carriage, and lost by the accident all her teeth. She brought on an action of damages, and the tribunal awarded that amount.

SOUTHERN

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ORIGINAL AND ECLECTIC.

ARTICLE XII.

Case of Diabetes Mellitus. Treated by JOSEPH JONES, A.M., M.D., Professor of Physics and Natural Theology in the University of Georgia, Athens; Professor of Chemistry and Pharmacy in the Medical College of Georgia, Augusta; formerly Professor of Medical Chemistry in the Medical College of Savannah.

Irish laborer, entered the Savannah Marine Hospital and Poor House, July 17th, 1857: age 24; height 5 feet 7 inches; light hair, blue eyes, scanty reddish yellow whiskers; greatly emaciated—arms and legs resemble those of a skeleton; ankles œdematous. Weight, in health, 140 lbs.; now, it cannot be more than 90 lbs.

Complained of continued pain in his head and bones, loss of strength, a voracious appetite, insatiable thirst, disordered digestion and a continued and exhausting diarrhœa.

Had no fever and no enlargement of liver or spleen. Upon physical exploration the action of the heart and lungs appeared to be normal.

The attempt was made to arrest the diarrhœa. Hope's mixture produced a temporary effect, but did not arrest the waste of tissue. Opium, chalk mixture, and the usual remedies for diarrhœa were administered. They checked the diarrhœa temporarily, but did not arrest the waste of tissue and loss of muscular and nervous force.

His diet was strictly guarded. It was found that the greater, portion of the meat which he ate, passed entirely through the ali-

mentary canal, and was voided in the form of fetid undigested masses.

The patient was placed upon farinaceous diet—arrow-root, rice, and boiled milk and rice. Under this regimen, the stools became less numerous, and improved in appearance, but the destruction of tissue and loss of power was not arrested.

External applications had no effect whatever upon the pain in his head and limbs. Strychnia, in small doses, failed to strengthen his digestive apparatus and nervous system.

This treatment was continued for three weeks, and during this time his progress was steadily downwards. His tissues continued to waste away, and his strength every day grew less.

August 7th. Pulse 70.	Temperature of Atmosphere,	81°F.
	" " Hand,	96½°
Respiration 19.	" under Tongue,	100°
August 8th. Pulse 64.	Temperature of Atmosphere,	81°F.
	" " Hand,	97¼°
Respiration 18.	" under Tongue,	100°

Examination of Urine.—Reaction slightly acid.
Specific gravity 1040.

Of a light straw color, clear limpid, resembling the urine of a female suffering with hysteria. The resemblance extended only to the color and amount passed. The high specific gravity of the urine of this patient, at once distinguished it from the abundant light colored urine often passed by hysterical females. The amount of urine passed by this patient during the 24 hours varied from one to one and a half gallons—an enormous quantity, considering his reduced state, and the large amount of solid matters held in solution in the urine.

Trommer's, Moore's, and the fermentation tests and the rapid formation of the Torula Cerevisiæ, gave unequivocal evidence of the presence of grape sugar in large amount.

Chemical analysis showed that the specific gravity of the urine was due, in great measure, to the large amount of grape sugar which it held in solution.

Examination of Blood.—Specific gravity of Blood, . . 1043·2
Specific gravity of Serum, . . 1022·2

Coagulation of the blood commenced in a few minutes after it was drawn, and the clot was firm.

Under the microscope, the colored corpuscles were normal in color and form. They had a great tendency to stick together and form rolls, as in the blood of inflammation, and in the blood of the horse.

This phenomenon resembled, in all respects, that which occurs in well marked cases of inflammation.

The colorless corpuscles appeared to be deficient in numbers.

Serum of a light straw color. When the serum was mixed with an equal quantity of water, and treated with a few drops of hydrochloric acid, sufficient to neutralize its alkaline reaction, no coagulation took place, even after prolonged boiling.

Nitric acid produced prompt coagulation of the albumen of the serum.

WATER		SOLID MATTERS	
In 1000 parts of Blood,	838·510	In 1000 parts of Blood,	161·490
" " " " Serum,	922·341	" " " " Serum,	77·659
(1) " " " " Liquor Sanguinis,	919·039	(1) " " " " Liquor Sanguinis,	80·961
(2) " 1000 parts of Liquor Sanguinis,	887·339	(2) " 1000 parts of Liquor Sanguinis,	112·661

FIXED SALINE CONSTITUENTS

In 1000 parts of Blood,	9·061
" " " " Serum,	5·319
(1) " " " " Liquor Sanguinis,	5·325
(2) " " " " Liquor Sanguinis,	7·181
" Blood Corpuscles of 1000 parts of Blood,	4·443
" 1000 parts of Dried Blood Corpuscles,	47·916
" " " " Moist Blood Corpuscles,	11·981
" " " " Dried Residue of Blood,	56·108
" " " " " " Serum,	68·488
(1) " " " " " " Liquor Sanguinis,	68·493
(2) " " " " " " Liquor Sanguinis,	63·739
" Solid Matters of Serum of 1000 parts of Blood,	4·519

1000 PARTS OF BLOOD CONTAINED

Water,			838·510
Dried Blood Corpuscles,	92·702	Dried Organic Matters,	88·259
		Fixed Saline Constituents,	4·443
Fibrin,			2·806
Albumen,	49.539	Dried Organic Matters,	48·157
		Fixed Saline Constituents,	1·382
Extractive Matters,	16·003	Dried Organic Matters,	12·866
		Fixed Saline Constituents,	3·137

1000 PARTS OF BLOOD CONTAINED

Moist Blood Corpuscles, 370·808		Water - - - - - - - -	278·106
		Dried Organic Residue, -	88·259
		Fixed Saline Constituents, -	4·443
Liquor Sanguinis, 629·192	Water, - - - - - - - - - - - -		560·404
	Albumen,	Dried Organic Residue, - -	48·157
		Fixed Saline Constituents, -	1·382
	Extractive and Coloring Matt'rs,	Dried Organic Matters,	12·866
		Fixed Saline Constituents	3·137
	Fibrin, - - - - - - - - - - - -		2·606

1000 PARTS OF MOIST BLOOD CORPUSCLES CONTAINED

Water, -	750·001
Dried Organic Matters, - - - - - - - - - - - - -	238·018
Fixed Saline Constituents, - - - - - - - - - - -	11·981

(1) 1000 PARTS OF LIQUOR SANGUINIS CONTAINED

Water, -			919·039
Albumen, - - - -	59·737	Organic Residue, - - -	58·110
		Fixed Saline Constituents, -	1·620
Extractive and Coloring Matters, - - - -	17·345	Organic Residue, - - -	13·670
		Fixed Saline Constituents, -	3·682
Fibrin, -			3·302

(2) 1000 PARTS OF LIQUOR SANGUINIS CONTAINED

Water, -			886·740
Albumen, - - - -	78·733	Organic Residue, - - -	76·537
		Fixed Saline Constituents, -	2·196
Extractive and Coloring Matters, - - - -	29·469	Organic Residue, - - -	24·484
		Fixed Saline Constituents, -	4·985
Fibrin, -			4·459

The method of analysis employed in these investigations has been described by the author (1) in his Inaugural Dissertation for the degree of M.D. in the University of Pennsylvania, and in his Chemical (2) and Physiological Investigations, published by the Smithsonian Institution, and is similar in many respects to that employed by MM. Becquerel (3) and Rodier, Bowman, (4) and others. (5)

(1) Physical, Chemical and Physiological Investigations, upon the Vital Phenomena, Structure, and Offices of the Solids and Fluids of Animals. By Joseph Jones. (American Journal of Medical Sciences, July, 1856, p. 46.

(2) Investigations, Chemical and Physiological, relative to certain American Vertebrata. By Jos. Jones. Smithsonian Contributions to Knowledge. 1856.

(3) Pathological Chemistry, by MM. Becquerel and Rodier. Translated by S. T. Speer, M. D. London: 1857, p. 19, et. sq.

(4) Bowman's Medical Chemistry, pp. 145–194. Philadelphia: 1850.

(5) Simons Chemistry of Man, p. 142. Philadelphia: 1846. Lehmann's Physiological Chemistry. Translated by G. E. Day. Cavendish Society pub. vol. ii., pp. 153–280. London. 1851–1854. See also American ed., edited by Prof. Rogers. vol. 1, pp. 541–648. Manuals of Blood and Urine. By Griffith Reese and Marwick. Philadelphia: 1848.

All physiological chemists have failed to ascertain with absolute accuracy the amount of solid matter in the serum of 1000 parts of blood.

The proportion by which this is determined, although the closest approximation to the truth that can be made in the present state of science, is founded upon the erroneous assumption that all the water of the blood exists in the liquor sanguinis. C. Schmidt has shown that three-fourths of the colored blood corpuscles are composed of water. Hence, to obtain the relation of the moist blood corpuscles to the liquor sanguinis, we must multiply the dried residue of the corpuscles by 4.

Physiological chemists possess no method by which the blood corpuscles can be determined with absolute accuracy.

It is evident, from these facts, that when we attempt to calculate the moist blood corpuscles and liquor sanguinis of 1000 parts of blood, whatever error entered into the calculation of the solid matters of the blood corpuscles, will be increased four fold, whilst the error in the calculation of the constituents of the liquor sanguinis will increase, not only in a direct ratio to the errors in the calculation of the blood corpuscles and solid matters of the serum of 1000 parts of blood, but also in a definite ratio to the actual increase or decrease in the 1000 parts of moist blood corpuscles. That error exists in this method of analysis is rendered evident when we calculate the constituents of 1000 parts of liquor sanguinis, from the data obtained by subtracting the moist blood corpuscles from 1000 parts of blood, and considering the remainder liquor sanguinis.

The results thus obtained do not correspond with those obtained from the actual analysis of 1000 parts of liquor sanguinis.

To render this error evident in the present method of analysis, I have in this and subsequeut analyses, stated the actual analysis of 1000 parts of liquor sanguinis, and that calculated from the constitution of the liquor sanguinis determined in 1000 parts of blood, by the subtraction of the moist blood corpuscles.

The former, by actual experiment, is always marked (1); the latter, by calculation, is always marked (2).

We will now compare this analysis of the blood of our diabetic

patient with—1st, analyses of normal blood, and 2nd, with analyses of abnormal blood.

The following is given by Lehmann, (6) as the standard constitution of healthy human blood.

1000 PARTS OF MOIST BLOOD CORPUSCLES CONTAIN		1000 PARTS OF LIQUOR SANGUINIS CONTAIN	
Water,	688·000	Water,	902·900
Solid Constituents,	312·000	Solid Constituents,	97·100
Specific Gravity,	1088·5	Specific Gravity,	1028·
Hæmatin,	16·750	Fibrin,	4·050
Globulin & Cell Membrane,	282·220	Albumen,	78·840
Fat,	2·310	Fat,	1·720
Extractive Matters,	2·600	Extractive Matters,	3·940
Mineral Substances without Iron,	8·120	Mineral Substances,	8·550

The following are the physiological limits of the variations of the constituents of the blood, as established by the researches of MM. Becquerel (7) and Rodier.

IN 1000 PARTS OF BLOOD,

The	Water may vary					from	760·000	to	800·000
"	Specific Gravity of the Blood may vary					"	1055·	"	1063·
"	Globules					"	120·000	"	150·000
"	Fibrin					"	2·000	"	3·500
"	Solid Matters of the Serum					"	90·000	"	105·000
"	Cholesterine					"	0·075	"	0·150
"	Animal Soap,					"	1·000	"	2·000
"	Serolin					"	0·010	"	0·030
"	Chloride of Sodium					"	2·000	"	5·000
"	Soluble Salts					"	1·500	"	4·000
"	Phosphates					"	0·500	"	1·000

IN 1000 PARTS OF SERUM,

The	Specific Gravity of the Serum may vary					from	1027·	to	1032·
"	Water of the Serum					"	880·000	"	900·000
"	Solid Matters					"	100·000	"	120·000
"	Albumen					"	70·000	"	90·000

The following is the typical formula of the constitution of the blood in health, adopted by MM. Becquerel (8) and Rodier:

(6) Lehmann's Physiological Chemistry, English ed., p. 160, vol. ii. American ed., p. 546, vol. i.
(7) Pathological Chemistry of MM. Becquerel and Rodier, English ed., p. 90.
(8) Pathological Chemistry, by MM. Becquerel aud Rodier. Eng. ed., p. 81.

ANALYSIS OF 1000 PARTS OF BLOOD.	
Specific Gravity of the Blood,	1060·000
Water,	781·600
Globules,	135·000
Albumen,	70·000
Fibrin,	2·500
Fatty Matters, Extractive Matters & Free Salts,	10·000
Phosphates,	0·550
Iron,	0·350

ANALYSIS OF 1000 PARTS OF SERUM.	
Specific Gravity of Serum,	1028·000
Water,	908·000
Albumen,	80·000
Extractive Matters and Free Salts,	12·000

If we carefully compare the analysis of the blood of our patient with these analyses of normal blood,,we will find—

1. The specific gravities of the blood and serum are much lower than the normal standard.

2. The colored corpuscles are diminished in numbers, the dried corpuscles being only 92·702, and the moist blood corpuscles 370·808, whilst in health the dried corpuscles generally average 135·000 and the moist corpuscles 540·000.

3. The albumen of the liquor sanguinis is much less than normal, being only 49·539 in the 1000 parts of blood, whilst in health, it ranges from 70 to 90.

4. The extractive and coloring matters are 12·866, and are greater in amount than normal. When we compare the extractive matters with the diminished albumen and blood corpuscles, it is evident that they are far more abundant than normal.

5. The fixed saline constituents are normal in amount as compared with normal blood, but increased when compared with the diminished albumen and blood corpuscles.

It is important that we should, in the next place, compare the blood of this patient, reduced in flesh and strength to the last degree, with the blood of individuals whose blood has been depraved, and forces exhausted by other diseases.

The following examples, are selected from numerous analyses of the blood of patients suffering with malarial fever, which I conducted in the Savannah Marine Hospital and Poor House, during the last summer and fall:—

CASE I. *Intermittent Fever, neglected.*—Irish laborer, entered the Savannah Poor House Sept. 23rd: age 22; height 5 feet 8 inches. Had been working in the marshes along the Savannah

river, and suffered with chill and fever for two months, during which time he had no medical attendance. Complexion sallow; tongue, lips and gums pale; digestion impaired. Complains of great weakness. Flesh not much reduced, but feels soft and unnatural.

Examination of Blood.—Blood watery in appearance—coagulated slowly in 30 minutes. Reaction decidedly alkaline. In the specific-gravity-bottle filled with blood, the colored corpuscles gravitated towards the bottom and left above a light yellow transparent clot. After standing 20 hours, the clot had contracted but little, and its consistency was very weak. Serum, of a light yellow color.

Specific Gravity of Blood, - - - - -	1030·5
Specific Gravity of Serum, - - - - -	1021·3

WATER		SOLID MATTERS	
In 1000 parts of Blood,	877·553	In 1000 parts of Blood,	122·447
" " " " Serum,	927·757	" " " " Serum,	72·243
(1) " " " " Liquor Sanguinis, - -	925·725	(1) " " " " Liquor Sanguinis, - -	74·275
(2) " 1000 parts of Liquor Sanguinis, - -	911·124	(2) " 1000 parts of Liquor Sanguinis, - -	88·876
		" in Serum of 1000 parts of Blood -	68·435

FIXED SALINE CONSTITUENTS

	In 1000 parts of Blood, - - - - - -	3·316
	" " " " Serum, - - - - -	3·326
(1)	" " " " Liquor Sanguinis, - - - -	3·328
(2)	" " " " Liquor Sanguinis, - - - -	3·965
	" Serum of 1000 parts of Blood, - - - -	3·141
	" 1000 parts of the Solid Matters of Blood, - -	27·083
	" " " " " " " " Serum, - -	45·901
	" " " " " " " " Blood Corpuscles,	3·240
(1)	" " " " " " " " Liquor Sanguinis,	44·779
(2)	" " " " " " " " Liquor Sauguinis,	44·612
	" Blood Corpuscles of 1000 parts of Blood, - -	0·175
	" 1000 parts of Moist Blood Corpuscles, . -	0·841

1000 PARTS OF BLOOD CONTAINED

Water, - - - - - - - - - - -			877·553
Dried Blood Corpuscles,	51 987	Dried Organic Residue,	51·812
		Fixed Saline Constituents,	0·175
Fibrin, - - - - - - - - - -			1·925
Albumen and Extractive and Coloring Matters, -	68·335	Dried Organic Residue,	65·194
		Fixed Saline Constituents,	3·141

1000 PARTS OF BLOOD CONTAINED

Moist Blood Corpuscles,	207 948	Water,	155 861
		Organic Residue,	51·812
		Fixed Saline Constituents,	0·175
Liquor Sanguinis,	792·052	Water,	721·692
		Albumen and Extractive and Coloring Matters,	65·194
		Fixed Saline Constituents,	3·141
		Fibrin,	1·925

1000 PARTS OF MOIST BLOOD CORPUSCLES CONTAINED

Water,	749·519
Dried Organic Matters,	249·154
Fixed Saline Constituents,	0·841

(1) 1000 PARTS OF LIQUOR SANGUINIS CONTAINED

Water,	925·725
Albumen, Extractive and Coloring Matters,	68·817
Fibrin,	2·032
Fixed Saline Constituents,	3·326

(2) 1000 PARTS OF LIQUOR SANGUINIS CONTAINED.

Water,	911·167
Albumen, Extractive and Coloring Matters,	82·312
Fibrin,	3·965
Fixed Saline Constituents,	2·430

The urine of the patient was of low specific gravity, diminished in amount, and contained no grape sugar.

CASE II. *Intermittent Fever, neglected—terminating in Bilious Remittent Fever, and complete alteration of the Chemical Constitution of the Blood and Tissues.*

German Butcher, entered the Savannah Poor House Sept. 25th: age 23; height 5 feet 10 inches; weight, in health, 180 lbs.

His present weight cannot be more than 110 lbs. Has been suffering with chill and fever for two months, and has had no medical attendance. Sallow, anæmic complexion; flesh and strength greatly reduced; nervous and muscular forces very feeble. Was brought into the Hospital in a comatose state.

Stimulants, sinapisms, cut cups to the temples and back of neck, and blisters to the epigastrium and back of neck, aroused him from this comatose condition.

A few days after his entrance into the hospital, a large abscess

formed upon the side of his head, in the region of the ear, and joint and angle of the inferior maxillary bone.

Notwithstanding that this abscess was lanced, the pus formed an entrance into the external meatus auditorius.

Large masses of the cellular tissue and muscles sloughed away, and the angle and superior portion of the inferior maxillary bone were almost completely stripped of flesh. The abscess compelled him to lie upon the opposite side of his body, and the arm upon which the weight of the body rested swelled enormously, until it appeared to be ready to burst, and finally the skin over the biceps muscle changed to a black color, and sloughed off in a single night, leaving the red quivering muscles entirely exposed.

The biceps muscle sloughed entirely off from its lower attachment. Large ulcers appeared in various parts of his body.

The patient lingered, supported by tonics, nutritive diet and stimulants, for three weeks.

After death, his liver presented a color a shade lighter than the slate color of the malarial fever liver, and in many parts it was regaining its normal hue. The spleen was enlarged and in many parts completely degenerated in structure, being converted into pus and a substance resembling cheese. The surface of the spleen was covered with effused coagulable lymph, and bound to the liver by bands of coagulable lymph. The border next to the liver contained an abscess about the size of a wall-nut, filled with pus. The whole substance of the spleen was consolidated, and those portions which were not degenerated, resembled, when cut, the liver of malarial fever. The stomach showed the marks of chronic inflammation.

The glands of Peyer, in the lower portion of the intestinal canal, were enlarged, but pale, and not more congested with blood than usual.

Examination of the Blood of this patient four days after his entrance into the Hospital.—Blood coagulated slowly. In one specimen, the coagulation was remarkably slow, and the blood corpuscles gravitated towards the bottom of the vessel and left above a clear, golden colored clot. This transparent portion of the clot was about $\frac{1}{4}$ of an inch in thickness.

Serum, of a deep golden color. Reaction of serum, alkaline.

Specific Gravity of Blood, - - - - 1036·6
Specific Gravity of Serum, - - - - 1023·6

WATER	SOLID MATTERS
In 1000 parts of Blood, 840·511	In 1000 parts of Blood, 159·489
" " " " Serum, 913·950	" " " " Serum, 86·050
(1) " " " " Liquor Sanguinis, - - 912·665	(1) " " " " Liquor Sanguinis, - - 86·978
(2) " 1000 parts of Liquor Sanguinis, - . 882·723	(2) " 1000 parts of Liquor Sanguinis, - - 117·277
	Solid Matters of Serum of 1000 parts of Blood, 79·135

FIXED SALINE CONSTITUENTS

	In 1000 parts of Blood, - - - - - - -	5·796
	" " " " Serum, - - - - - - -	2·647
(1)	" " " " Liquor Sanguinis, - - - -	2·658
(2)	" " " " Liquor Sanguinis, - - - -	3·498
	" " " " Solid Matters of Blood, - - -	36·341
	" " " " " " " Serum, - - -	30·178
(1)	" " " " " " " Liquor Sanguinis, -	30·205
(2)	" " " " " " " Liquor Sanguinis, -	29·850
	" " " " " " " Blood Corpuscles, -	42·914
	" " " " Moist Blood Corpuscles, - - -	10·728
	" Blood Corpuscles of 1000 parts of Blood, - -	3·409
	" Serum of 1000 parts of Blood, - - - -	2·387

1000 PARTS OF BLOOD CONTAINED

Water, - - - - - - - - - - -		840·511
Dried Blood Corpuscles, 79·437	Dried Organic Residue, -	76·028
	Fixed Saline Constituents,	3·409
Fibrin - - - - - - - - - - -		0·877
Albumen, Extractive and Coloring Matters, - 79·096	Dried Organic Residue, -	76·708
	Fixed Saline Constituents,	2·387

1000 PARTS OF BLOOD CONTAINED

Moist Blood Corpuscles, 317·748	Water, - - - -	238·271
	Dried Organic Residue, -	76·028
	Fixed Saline Constituents,	3.409
Liquor Sanguinis, - 682·252	Water, - . - -	602·240
	Dried Organic Residue, -	76·708
	Fixed Saline Constituents,	2·387
	Fibrin, - - . -	0·877

1000 PARTS OF MOIST BLOOD CORPUSCLES CONTAINED

Water, - - - - - - - - - -	749·873
Dried Organic Residue, - - - - - - -	239·284
Fixed Saline Constituents, - - - - - -	10·728

(1) 1000 PARTS OF LIQUOR SANGUINIS CONTAINED

Water,	913·022
Albumen, Extractive and Coloring Matters,	83·303
Fixed Saline Constituents,	2·647
Fibrin,	0·928

(2) 1000 PARTS OF LIQUOR SANGUINIS CONTAINED

Water,	882·723
Albumen, Extractive and Coloring Matters,	112·433
Fixed Saline Constituents,	3·498
Fibrin,	1·285

CASE III. *Bilious Remittent Fever.*—American Seaman, native of Boston, entered the Savannah Marine Hospital Sept. 26th: age 21; weight 150 lbs.; height 5 feet 10 inches. Muscular system moderately well developed.

This is his first trip to Savannah. Has been sleeping at night, on the deck of the ship in the open air. The captain compelled all his men to sleep on board the ship, which was lying along the low marshy shore below the city.

This patient was brought in comatose, and has been passing his urine and feces in bed.

Sept. 29th. Lies in a stupor; complexion sallow; teeth coated with sordes; tongue perfectly dry and as rough to the feeling as the surface of a newly sawed board. Pulse 120; Respiration 22.

Examination of Blood.—Blood coagulated slowly. Serum, of a deep golden color.

Nitric acid showed that this color was due to the presence of bile.

Reaction of serum, alkaline.

Specific Gravity of Blood,	1040
Specific Gravity of Serum,	1022

WATER		SOLID MATTERS	
In 1000 parts of Blood,	833·449	In 1000 parts of Blood,	166·551
" " " " Serum,	912·386	" " " " Serum,	87·614
(1) " " " " Liquor Sanguinis,	910·798	(1) " " " " Liquor Sanguinis,	89·203
(2) " 1000 parts of Liquor Sanguinis,	875·813	(2) " 1000 parts of Liquor Sanguinis,	124·187
		" Serum of 1000 parts of Blood,	80·033

FIXED SALINE CONSTITUENTS

In 1000 parts of Blood,	6·314
" " " " Serum,	6·620
(1) " " " " Liquor Sanguinis,	6·630
(2) " " " " Liquor Sanguinis,	8·759
" " " " Dried Blood Corpuscles,	6·595
" " " " Moist Blood Corpuscles,	1·648
" " " " Dried Residue of Blood,	37·909
" " " " " " " Serum,	75·558
" Serum of 1000 parts of Blood,	5·747

1000 PARTS OF BLOOD CONTAINED

Water,		833·449
Dried Blood Corpuscles, 85·968	Dried Organic Residue,	84·400
	Fixed Saline Constituents,	0·567
Fibrin,		1·450
Albumen, Extractive and Coloring Matters, 80·033	Dried Organic Residue,	74·186
	Fixed Saline Constituents,	5·747

1000 PARTS OF BLOOD CONTAINED

Moist Blood Corpuscles, 343·872	Water,	258·804
	Dried Organic Residue,	84·400
	Fixed Saline Constituents,	0·567
Liquor Sanguinis, 656·128	Water,	574·646
	Albumen, Extractive and Coloring Matters,	74·185
	Fixed Saline Constituents,	5·747
	Fibrin,	1·450

1000 PARTS OF MOIST BLOOD CORPUSCLES CONTAINED

Water,	752·646
Dried Organic Residue,	245·239
Fixed Saline Constituents,	1·648

(1) 1000 PARTS OF LIQUOR SANGUINIS CONTAINED

Water,	910·797
Albumen, Extractive and Coloring Matters,	80·996
Fixed Saline Constituents,	1·587
Fibrin,	6·620

(2) 1000 PARTS OF LIQUOR SANGUINIS CONTAINED

Water,	875·813
Albumen, Extractive and Coloring Matters,	113·064
Fixed Saline Constituents,	8·758
Fibrin,	2·209

Under the use of stimulants, sulphate of quinia, and nutritious diet, this patient recovered, slowly. He was confined to his bed three weeks, and at the end of this time, exhibited

the effects of the bilious remittent fever, in his pale, sallow, anæmic countenance, pale lips and gums, and tottering gate.

The violent nature of the malarial fever, contracted by sleeping in the open air in the low marshy land bordering our fresh water rivers, is forcibly illustrated by the subsequent history of the crew to which this patient belonged.

A few days after his admission into the hospital, the captain weighed anchor and sailed for New York. Before getting well out to sea, himself and the whole of his crew were taken sick. There was not a man with strength to work a pump or furl a sail. Fortunately a small vessel perceived their signals of distress, and towed them into Darien. Before reaching this port the captain and five out of seven of the crew had died. There were but two remaining out of eight, and these were extremely ill.

If we compare the blood of these cases with that of health, and with the blood of the patient suffering with diabetes mellitus, we will observe the following points of agreement and disagreement:

1. The colored blood corpuscles are diminished greatly and rapidly in malarial fever. This destruction of the colored blood corpuscles is far more rapid in malarial fever than in diabetes mellitus.

2. The salts of the colored blood corpuscles are diminished to a remarkable extent in malarial fever—whilst they are normal in amount in the blood of diabetes mellitus.

3. The blood coagulates slowly, and the clot is soft, in malarial fever—whilst the reverse was the case in this specimen of diabetic blood.

4. The fibrin is often diminished in malarial fever, and the serum presents a golden color—whilst in this case of diabetes mellitus the fibrin was slightly increased and the color of the the serum was normal.

That the poison of malarial fever induces profound changes in the colored blood corpuscles, and other constituents of the blood, I have demonstrated by the following facts:

(*a*). The urine of patients suffering with malarial fever contains an increased quantity of iron. The increase of the iron in the urine is subsequent to the destruction of the colored corpuscles in the blood.

(*b*). In examinations of the organs after death, from all the forms of malarial fever—intermittent, remittent and congestive—I have observed that the dark blood of the spleen and liver do not change to the arterial hue when exposed to the action of the oxygen of the atmosphere.

After death from phthisis, cirrhosis of the liver, organic disease of the circulatory apparatus, and apoplexy, and mechanical injuries, as far as my observations extend, the blood of the spleen and liver always change to the arterial hue when exposed to the action of the oxygen of the atmosphere.

(*c*). Animal starch accumulates in the malarial-fever liver—whilst grape sugar, as far as my observations extend, is absent. I have tested the livers of malarial fever for grape sugar and starch. An abundance of starch(9) was obtained, without a trace of grape sugar.

The livers were set aside, and examined after intervals of twelve hours. The last examination was made thirty-six hours hours after the first. At every examination the result was the same—an abundance of animal starch, and no grape sugar.

These facts are important, not only in their bearing upon malarial fever, but also in their bearing upon diabetes mellitus. M. Cl. Bernard(10) has demonstrated that the transformation glycogenic hepatic matter (animal starch) formed by the liver, into glucose, is the result of the action of a special ferment, which is formed and exists in the blood, independent of the liver.

From the facts which we have previously stated, it is evident that in malarial fever, this ferment is destroyed, whilst the liver still possesses the power of transforming the nitrogenized and non-nitrogenized elements into animal starch.

We have now facts sufficient, to draw important distinctions between malarial fever and diabetes mellitus.

(9) So abundant is this animal starch in the malarial fever liver, that if a small particle of the substance of the liver be mashed upon a glass slide, treated with a saturated solution of iodine in alcohol, and viewed under the microscope, numerous beautiful blue masses of this animal starch, colored by the iodine, will be seen. If the fibrous capsule be torn off from the surface of the liver, spread upon a glass slide, and treated with tincture of iodine, these blue masses will be seen scattered amongst the meshes of the fibrous tissue. With reference to the discovery of animal starch, see American Journal of Medical Sciences, Oct. 1857, p. 549.

(10) Moniteur de Hôpitaux, April 14, 1857; also, American Journal of Medical Sciences, July, 1857, p. 203

In both diseases, the blood corpuscles may be greatly diminished.

In both diseases the nervous and muscular forces may be correspondingly diminished.

Here the analogy ceases.

The destruction of the colored corpuscles is rapid in severe types of malarial fever, and slow in all the forms of diabetes mellitus. The salts of the blood corpuscles are normal, if not increased in this case of diabetes mellitus, whilst they are greatly diminished in malarial fever. In malarial fever, the blood loses its power of changing its color in the spleen and liver. In malarial fever, the color of the liver and the character of the bile is altered, and the spleen is enlarged, softened and filled with a purplish brown mud.

In diabetes mellitus, all the organs are normal in appearance.

In malarial fever, the blood has lost its power of converting animal starch into glucose. In diabetes mellitus this power is greatly increased.

The following table affords a comparison of Normal, Diabetic and Malarial Blood:

	Normal Blood.	Normal Blood.	Diabetic Blood.	Malarial Blood.	Malarial Blood.	Malarial Blood.
Solid Matters in 1000 parts of Blood	200.000	240.000	161.490	122.447	159.489	166.551
" " " " " " Liquor Sanguinis	100.000	120.000	80.961	74.275	86.978	89.203
Dried Blood Corpuscles in 1000 parts of Blood	120.000	150.000	92.702	51.987	79.437	85.968
Moist " " " " " "	480.000	600.000	370.808	207.948	317.748	343.872
Liquor Sanguinis " " " " " "	400.000	520.000	629.192	792.052	682.252	656.128
Fibrin in 1000 parts of Blood	2.000	3.500	2.806	1.925	0.877	1.450
Fixed Saline Constituents in 1000 parts of Moist Blood Corpuscles	8.120	10.500	11 981	0.841	10.728	1.648
" " " " " " " " Dried Blood Corpuscles	65.000	70.000	49.916	3.240	42.914	6.595
" " " " " " " " Dried Blood	70.000	80.000	56.108	27.083	36.341	37.909
" " " " " " " " Solid Matters of Liquor Sanguinis,	88.053	95.000	68.488	44.779	30.205	75.553
" " " " " " " " Liquor Sanguinis	8.550	10.100	5.320	3.326	2.647	6.630

We have now all the necessary facts for the intelligent treatment of this case.

The indications in the treatment of this case of diabetes mellitus are—

(1). To strengthen digestion.

His stomach fails to digest the nitrogenized elements—the very substances which he needs, to supply the rapid waste of his tissues.

(2). To afford the organic and inorganic materials of structure.

(3). To quiet and strengthen the nervous system.

(4). To arrest the destruction and transformation of the elements of the blood, tissues and food, into animal starch and grape sugar.

(1). *To strengthen Digestion.*—Meat passed entirely through the alimentary canal, without being digested. This is clear evidence that the gastric and pancreatic juices do not perform their offices. The active and essential principle of the gastric juice being pepsine, this must first be supplied. If pepsine and an acid be supplied, digestion will take place in a weak, diseased stomach, as well as in the healthy stomach. The truth of this assertion has been established by the experiments of Dr. L. Corvisart of Paris, (11) to whom the profession is indebted for the introduction of pepsine into the practice of medicine.

Andral, Longet, (12) Rillet, Barthez, (13) Grisole, Hérard, Vogel, Schiff, Josi, Lecointe, (14) Ballard, (15) Bertholet, (16)

(11) "Dyspepsie et Consomption—usage de la Pepsine," by Dr. L. Corvisart. Paris, 1854.

"Recherches ayant pour but, d'administrer aux malades qui ne digérent point des aliments tours digirés par le suc gastrique des animaux." Comptes Rendus, Aug. 16th, 1852—Sept. 6th, 1852.

Etudes sur les Aliments et Nutriments—Nouvelle Methode pour le traitement des malades dont l'estomac ne digere point."—L'Union Médicale, 1854, p. 17.

(12) In typhoid fever.—Bulletin Gen. de Therap. t. xlvii. p. 320.

(13) Sur l'apepsie (on absence de digestion) chez lez enfans, et sur le traitement de cette maladie par la pepsine.—L'Union Médicale, Jan. 12th, 1856.

(14) Observation d'un cas de consomption ultime, traitee par la Poudre Nutrimentive.—Bulletin Gen de Therap. t. xlix. p. 268.

(15) Artificial Digestion as a Remedy in Dyspepsia, Apepsia, and their results. By Edward Ballard, M.D., London, 1857. This valuable work contains the method of preparing the pepsine, and also the report of numerous cases of disordered digestion, successfully treated with pepsine, by Dr. Ballard and other practitioners of medicine.

(16) In Dyspepsia of a year's duration.

Cahagnet, (17) Parise, (18) Huet, (19) Chambers,(20) Nelson (21) and others, (22) have testified to the efficacy and value of pepsine in various diseases.

The fourth stomach of ruminants (rennet bag) is generally recommended as a source of pepsine. In hospital practice, however, I preferred to employ the stomach of the pig, for two reasons:

The pig is an omniverous animal. Its food and digestive process resembles more nearly that of man, and consequently its gastric juice must be better adapted to his wants.

For hospital purposes, the stomach of the pig can be much more readily obtained and prepared, than that of the cow or sheep.

When pepsine can be obtained pure from the apothecaries, or when the physician has time to prepare it himself, the Poudres Nutrimentives (23) of Corvisart is by far the most elegant and portable preparation.

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(17) In Dyspepsia and Vomitings of several years' duration.

(18) In Dyspepsia of early Pregnancy.

(19) Gastralgia after food of several years' duration.

(20) Practical Lectures on the Management of Digestion in Disease, by T. K. Chambers, M.D.—London Lancet, Aug., 1857, p. 101—Sept. 1857, p. 180, Am. Ed.

(21) On Mellitic Diabetes in reference to its Treatment by Rennet or Liquor Pepticus Præp., by David Nelson, M.D.—London Lancet, Aug. 1857, p. 118, Am. Edition.

(22) Rennet in Diabetes Mellitus, by Dr. James Gray.—Glasgow Med. Journal, Oct. 1856. See also American Journal of Medical Sciences, Jan. 1857, p. 2 5.

(23) The following are the directions, given by M. Boudalt, for the preparation of the medicine:—"Take a sufficient number of rennet bags (the fourth stomach of the ruminants), open and reverse them, and wash them under a thin stream of cold water; scrape off the mucous membrane, reduce it to a pulp, and macerate it in distilled water for twelve hours; filter; add to the liquor a sufficient quantity of acetate of lead, and after separating the precipitate, pass through it a current of sulphuretted hydrogen; filter again; evaporate at a low temperature to the consistence of a syrup, which is mixed intimately with starch pulverized, and dried at a temperature of 100° centig. In this state the gentle application of heat will reduce it to a dry mass readily reducible to a powder of uniform efficacy."

The power of the pepsine thus obtained, varies, and before the use of a specimen, we should first test its transforming power. The standard dose is that quantity of the powder, which when acidulated with three drops of lactic acid and added to 15 grammes (225 grains) of water, would transfer 6 grammes (90 grs.) of fresh fibrin finely cut up, and kept in a bottle, at a temperature of 40° centig., for twelve hours, with occasional shaking. The average dose of the "Poudre Nutrimentive" is 15 grains. It may be taken dry or in solution, in unfermented bread, or in a spoonful of soup, or in sweetened water. It should always be taken with, or at the commencement of the meal on which it is to act.—Ballard on Artificial Digestion, p. 10. See also, Mémoire sur le principe digestif, les preparations nutrimentives, et les moyens propres á reconnaitre et a mesurer leur action.—Acad. Imp. de Med., Séance du 14 Fevrier, 1854, et Moniteur des Hôpitaux, 16 Fevrier, 1854.

℞. Cut a pig's stomach into thin slices, and pour upon it one pint of vinegar, and preserve from decomposition (if the weather be warm), by surrounding with ice.

The pepsine and vinegar will reduce the tissues of the stomach to a uniform mass, or rather, fluid. Dose, f ℥j. three times a day, mixed with cold mutton or beef soup.

This preparation is useful for hospital purposes, because it is easily prepared, and at the same time is more efficacious than the pepsine ordinarily sold in the shops.

Chambers (24) and other (25) have shown that much of the pepsine now sold, possesses but feeble transforming powers.

Pepsine is not the only substance concerned in the digestion of albumenoid substances.

The connective tissues and muscular fibres are disintegrated and softened, but never completely dissolved by the gastric juice.

The ultimate fibrillæ of muscles which have escaped the action of the gastric juice pass into the small intestines, and are there digested by the pancreatic juice.

M. L. Corvisant (26) communicated to the Imperial Academy of Sciences, April 6th, 1857, a Memoir on the Power of the Pancreas to Digest Azotized Food, in which he confirmed the assertion of Purkinge and Pappenheim, that the secretion of the pancreas is endowed, like the gastric juice, with the property of

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The following is the mode adopted and recommended by Dr. James Gray of preparing the rennet:

"The stomach of a calf (and the younger it is the better,) is gently washed with water, taking care not to injure the mucous membrane; it is then salted, tied up and allowed to dry. After this, it is cut into small pieces, macerated in a pint and a half, or two pints of water, according to the size of the stomach, for four days or longer in winter, shaking it at intervals; the fluid is then poured off and bottled, and to test its power, a spoonful may be added to a pint of warm milk, which, if it curdles, it is now fit for use. A little spirits, or decoction of sparrow-grass, may be added to make it keep. The dose of rennet thus prepared is a tablespoonful, three, four, or six times a day, about half an hour after each meal, and during the process of digestion, followed shortly after by an alkali, to neutralize the lactic acid formed. That which I recommend is the alkaline tribasic phosphate of soda; but the carbonate of potash will answer very well, either alone or combined with the tincture of nux vomica, in five or ten drop doses."—Glasgow Medical Journal, Oct. 1856. See abstract of paper in Amer. Jour. of Medical Sciences, Jan. 1857, p. 215.

(24) Experiments upon Artificial Digestion, by T. K. Chambers, M. D. London Lancet, Aug. 1857, p. 133, Am. ed.

(25) Experiments upon the Action of Pepsine, by Edward H. Sieveking. Med. Times and Gazette, April 4, 1857. See, also, American Journal of Med. Sciences, 26 July, 1857, p. 212.

Moniteur des Hôpitaux, April 21st, 1857. See, also, American Journal of Med. Sciences, July, 1857, p. 206.

dissolving azotized food, and demonstrated that the pancreatic juice in disintegrating albumenoid elements, effects in them a transformation identical or analogous to that which the stomach produces.

The pancreatic juice acts only on those portions of the food which have escaped the action of the gastric juice, and at the same time it has no effect upon the digested products of the stomach.

When separated, the pancreatic and gastric fluids exercise their functions in full, and when mingled in their pure state, the two digestions are arrested. The two ferments, pepsine and pancreatine, destroy each other.

In the alimentary canal, this is prevented. 1st, by the pylorous which separates the two ferments. 2nd, by the gastric digestion during which the pepsine is destroyed. 3rd, by the bile which destroys in its course the activity of the pancreatine.

It is evident, therefore, that the pancreatine, or the pancreatic juice, so far from assisting digestion, would retard it. M. S. Corvisart states that he had failed to receive any benefit from the administration of pancreatine for the relief of derangement of the digestion in the intestinal canal.

In this case of diabetes mellitus, I employed a preparation of the pancreas of the pig, prepared in the same manner with the stomach. No beneficial results were produced, and it was abandoned and the pepsine retained.

(2.) To afford the organic and inorganic materials of structure.

As usual in the treatment of diabetes mellitus, the patient was furnished principally with animal food—eggs, mutton, beef, &c.

Bread and rice were allowed more frequently, however, than in the practice laid down in the books.

℞ Phospate of Iron, . . . grs. ij.
" " Lime, . . . " iv.
" " Soda, . . . " vi.
" " Potassa, . " iv.

Mix and administer three times during the day, in the soup containing the pepsine. These salts were given because they form important constituents of the blood corpuscles, muscles and brain, and nervous system.

℞ Cod-liver oil, tablespoonful three times a day.

Cod-liver oil is indicated in the treatment of diabetes mellitus for two reasons:

To supply the fatty matters which have been consumed.

There is a close connection between phthisis and diabetes.

Writers upon this disease state that, in the majority of cases, phthisis makes its appearance before death.

(3.) To strengthen and quiet the nervous system.

The depressed spirits, fretful, peevish temper, impaired memory and intelligence, loss of sexual propensity, and complete exhaustion of nervous power, call for those remedies which will act both as tonics and sedatives to the nervous system.

To accomplish these objects, opium and strychnia should be given simultaneously.

℞ Strychnia, ... grs. ij.
Extract of Gentian, . . . " ʒij.

Mix and divide into 100 pills; one pill three times a day, to be gradually increased, according to the strength of the patient and effects upon the nervous system.

Strychnia not only exerts a tonic influence upon the digestive organs, and muscular and nervous systems, but also exerts a direct influence in diminishing the amount of sugar formed.

℞ One grain of opium at bed-time, and one grain in the morning, at 9 o'clock.

Opium quiets the nervous irritability of the patient, and controls the diuretic influence of the sugar in the blood. It checks the excessive discharge, but does not prevent the production of sugar. Nevertheless, its action upon the nervous system renders it one of the most valuable of the secondary means.

As a stimulant and tonic to the digestive organs, f ʒ ij. of brandy were administered, three times a day, in a cup of the officinal infusion of quassia and soda.

Aug. 10th.—Pulse, 74. Temperature of Atmosphere, 88° F.
" under Tongue, 98°

Aug. 11th.—Pulse, 78. Temperature of Atmosphere, 81° F.
Respiration, 16, " under Tougue, 99⅘°

August 12th.—Slight improvement of digestion. Bowels are not moved so frequently. He is exceedingly weak, and complains of pain in his head and bones.

August 19th.—Complains of great weakness and thirst; is in a profuse perspiration; says that his digestion improves, but his strength does not increase. The brandy causes him to sleep and perspire too freely, and is probably the cause of the increased flow of urine and loss of strength.

The experiments of George Harley, M.D., (26) and M. Bernard, (27) have demonstrated that alcohol, ether, chloroform, methylated spirit, and ammonia, introduced into the duodenum, or injected directly into the portal vein, will excite an increased secretion of sugar. Healthy animals thus operated on were rendered for a time diabetic. This fact is important, not only in the treatment, but also in its bearing upon the causes of diabetes mellitus.

Drunkards are said to be peculiarly liable to this disease.

Pulse 84, Respiration 17, Temperature of Atmosphere, 90° F.
" under Tongue, 104°

The acceleration of the pulse may be due to the action of the alcoholic stimulants. We will discontinue the brandy and substitute 10 grains of carbonate of ammonia, three times a day, in a cup of the infusion of quassia and soda.

The carbonate of ammonia is administered, first, as a stimulant, and second, as a means of diminishing the amount of grape sugar.

Some chemists (28) have supposed that the occurrence of alkaline carbonates is necessary for the decomposition of sugar in the animal economy, and that in diabetes the passage of glucose into the urine is due to a want of alkalinity in the blood.

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(26) "Contributions to the Physiology of Saccharine Urine. On the Origin and Destruction of Sugar in the Animal Economy, by George Harley, M.D."—British and Foreign Medico-Chir. Review, July, 1857, p. 144.

(27) Gazette Medicale de Paris, Mai 10, No. 19, 1856, and Schmidt's Jahrb., vol. xciii. p. 24, 1857.

(28) Chimie applique a'la Physiologie et a la Therapeutique, Par M. le Docteur Mialhe, Pharmacien d' l'Empereur.—Paris, 1856.

In this work, Mialhe, after examining the various hypotheses which have been proposed to explain the nature of diabetes mellitus, comes to the conclusion that its true cause is a deficiency of alkali in the blood. To the objection that the blood of diabetic patients is never either neutral or acid, but always alkaline in its reaction, Mialhe answers that it is difficult to determine the amount of the alkalinity of the blood; and again, that part of the alkaline reaction of this fluid is derived from the presence of alkaline phosphates which possess no power of decomposing glucose. He is inclined to consider that the alkaline carbonates are deficient or absent, the phosphates remaining intact, thus preventing the fluid from exhibiting anything but an alkaline reaction.

In the treatment of diabetes he acts strictly upon these indications, and pre-

Direct experiment does not support this theory, for the researches of C. G. Lehmann, (29) Bouchardat and Bernard, (30) have proved on the contrary, that the blood of diabetic persons preserves its alkalinity, and that the alkalies of the blood do not promote the oxidization of sugar to the extent asserted.

Direct experiment and clinical facts, on the other hand, have shown that, in certain derangements of the nervous and circulatory systems and of the constituents of the blood, the production of grape sugar is increased and it passes into the urine; and farther, that the alkaline carbonates diminish the proportion of sugar in the urine of diabetic patients.

We may then employ the alkaline carbonates in the treatment of diabetes mellitus, although their action upon glucose in the animal economy is not well understood, and probably differs both in degree and kind from that asserted by Mialhe.

August 20th.—Feels very weak, and complains of a pain in the region of his liver. Bowels are still irregular, but improving.

Pulse, . . . 72.	Temperature of Atmosphere,	83° F.
Respiration, 14.	" " Hand, ...	97°
	" under Tongue,	100¼°

August 26th.—Improving in strength and spirits. Digestive function restored. Slowly gains flesh. Digests large quantities of meat with ease.

℞. Cane sugar ℥xij. during the 24 hours.

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scribes lime water, magnesia, vichey water, bicarbonate of soda, alkaline and vapor baths, flannel, friction, exercise, animal diet, and sometimes sudorifics. M. Mialhe relates the case of an Italian professor of music, afflicted with diabetes mellitus. Under the alkaline treatment the sugar rapidly diminished and the patient recovered.

(29) Prof. C. G. Lehmann injected a solution of grape sugar, prepared from starch, into the veins of 37 dogs and rabbits, and in every instance grape sugar appeared in the urine; and the reaction of the urine was acid. The sugar passed so rapidly into the urine, that it was frequently detected five minutes after its injection, and then when only 0·1 of a gramme was injected.

Caustic, alkalies, and their carbonates, associated with grape sugar, were also injected into the veins of rabbits.

Notwithstanding the caustic, alkalies and the carbonates, the urine not only contained grape sugar, but also exhibited an acid reaction.

Prof. Lehmann also injected dilute solutions of tartaric and citric acids into the stomachs of rabbits and dogs, fed on food poor in alkalies. Although the blood was thus rendered poor in alkalies, while at the same time vegetable acids were introduced, still not a trace of sugar appeared in the urine.—Physiological Chemistry, by Prof. C. G. Lehmann. English Ed., vol. iii., p. 233. American Ed., vol. ii., p. 357.

These experiments have been repeated by Uhle, with similar results.—Dis. Inaug. Med. Lips., 1852. p. 19.

(30) Moniteur des Hôpitaux, May 14, 1857.

Hoppe's(31) Investigations upon the action of cane sugar upon the animal economy have established the following facts:

1. No trace of grape sugar was found in the urine or feces during continued feeding with cane sugar.

2. When sugar and meat were given together, the weight of the animal increased much more rapidly than when meat alone was given.

3. When sugar and meat were consumed, urea was excreted in smaller quantity than when meat alone was taken.

4. By exclusive sugar diet, the excretion of urea was depressed to its lowest amount.

5. By the presence of much sugar in the blood, the albuminous substances are preserved from oxidization.

The albumen thus stored up appears to be decomposed during the development of fat. In this manner sugar produces fattening, only when, at the same time, albuminous substances are liberally supplied.

6. The temperature of the body was not increased, by the addition of sugar to the allowance of meat.

7. The health of the animals experimented on, was in no way injured by feeding on large quantities of cane sugar, in addition to a liberal supply of meat.

September 23rd. Has continued steadily to improve in health and strength, and is now able to walk about the hospital grounds and assist in nursing the patients.

The amount of urine voided daily has diminished.

October 20th. His muscular and nervous forces have increased greatly. His face and limbs have filled out. His spirits are excellent; and he says that he is now as fleshy as in health.

He is able to act as assistant nurse, and often sits up all night with those patients who require his services.

The amount of urine excreted daily has greatly diminished, and ranges from seventy to ninety fluid ounces.

The grape sugar has diminished greatly in amount, but has not entirely disappeared.

At this date I resigned the charge of the Savannah Marine Hospital and Poor House.

(31) F. Hoppe, on the Influence of Cane Sugar in Digestion and Nutrition.—Virchow's Archiv., vol. x., pp. 144, S. S., 1856.

It is evident, that sufficient time had not elapsed to warrant the assertion that this case was cured; nevertheless, the remedies used produced decided beneficial effects, and were the means, in Providence, of arresting the disease, when the patient appeared to be in the last stages of diabetes mellitus, and upon the borders of the grave.

I have endeavored to give a simple statement of the facts observed in this case, the plan of treatment pursued, and the reasons which led me to the adoption of this mode of treatment.

Although this is but a single case, the treatment of which was not even conducted to its termination in complete health, or death, still, I am persuaded that, in the present state of Medical Science, every successful effort to arrest so formidable a disease as Diabetes, even for a few months, will be considered worthy of an examination by Practitioners of Medicine.

ARTICLE XIII.

A New Principle of Diagnosis in Dislocations of the Shoulder-joint.

By L. A. DUGAS, M. D., Professor of Surgery, in the Medical College of Georgia.*

Having for a number of years inculcated in my lectures the principles contained in this paper, I was requested to reduce my views to writing, for the benefit of our classes, and accordingly published an article on the subject in the March number, for 1856, of the *Southern Medical and Surgical Journal*, p. 131. The object of this communication is to present the American Medical Association with a brief exposé of this interesting subject, and to accompany my remarks with pictorial illustrations, calculated to impress the eye as well as the understanding of the reader.

The principle of diagnosis to which I refer may be enunciated in the following language: If the fingers of the injured limb can be placed by the patient or by the surgeon upon the sound shoulder, while the elbow touches the thorax, *there can be no dislocation*; and if this cannot be done, there *must be* a dislocation. In other words, it is *physically impossible* to bring the elbow in

* The above Report was read before the American Medical Association, and printed in the 10th Volume of the Transactions.

contact with the sternum or front of the thorax if there be a dislocation; and the inability to do this is *proof positive* of the existence of dislocation, inasmuch as no other injury of the shoulder-joint can induce this inability.

In order to make these propositions apparent, I beg leave to present drawings taken from the skeleton, showing the relative position of the bones in the natural state, and in the several dislocations of the shoulder. The evidence thus obtained in support of my principle, would be still stronger if the bones were invested with their normal coverings and attachments.

Let us then look at Fig. 1, and we may observe, that while the head of the humerus occupies the glenoid cavity, and the fingers rest upon the other shoulder, the elbow and lower end of the humerus lie upon the thorax without difficulty, because of the circumstance that the head of the humerus, when in its natural position, is removed several inches from the ribs. In consequence of the rotundity of the thoracic walls it is physically impossible that both ends of the humerus should at the same time come in contact with the chest. We see, therefore, in Fig.

Fig. 1.

1, that in the absence of any dislocation, the *upper half* of the bone does not touch the thorax, and that the *lower half* does so without the least difficulty.

Fig. 2.

By now referring to Fig. 2, which represents a dislocation into the axilla, we find that, the fingers being placed upon the opposite shoulder, the elbow is forced so far forwards that it *cannot* touch the thorax. In this state of things, the upper end of the humerus alone touches the ribs, while the lower end is proportionately removed from the chest. Any attempt to force the elbow against the thorax must be fruitless, unless at the expense of a disruption of all the soft parts by which the head of the humerus is held down; for, as I have already stated, it is *physically impossible* for both ends of the humerus to touch the thoracic walls at the same time.

We have represented, in Fig. 3, a dislocation forwards or below the clavicle; and here again we find the *upper end* of the humerus resting upon the ribs—the elbow being consequently removed from the chest. The *upper* half of the humerus touches the thorax, and so long as this is the case, it is physically impossible for the *lower* portion of the humerus also to do it. In dislocations of this kind, it is very difficult to carry the fingers upon the opposite shoulder, even though the elbow be allowed to project forward, because of the resistance offered by the strong muscles which pull back the humerus. I have, however, represented the bones of the skeleton in this position, for the purpose of

showing the effect, in case it could be assumed, in the living subject.

Fig. 3.

Dislocations of the humerus upon the dorsum of the scapula, although very rare, should still be carefully studied. I have, therefore, represented this accident in Fig. 4, by which it may

Fig. 4.

be seen that the same principles are applicable also to it. Here,

as well as in the other instances, it is only the *upper end* of the humerus that touches the thorax, and the elbow projects strongly forwards. In this dislocation, it might be possible to bring the elbow against the side of the trunk, by carrying the humerus down parallel with the axis of the body; but any contact of the elbow with the chest is impossible, if the fingers be directed towards, or placed upon the sound shoulder, for then the form of the thorax would offer an insuperable obstacle.

Having now, I trust, sufficiently demonstrated the truth of the proposition that it is *physically impossible* to bring the elbow against the front of the thorax in dislocation of the shoulder, I would simply add, that it is equally true, that no other injury of the shoulder-joint than a dislocation can induce this physical impossibility. It is obvious, that a mere contusion of the soft parts may render motion of the joints so painful as to deter the patient from the effort necessary to carry the fingers upon the other shoulder. But there can be no difficulty on the part of the surgeon in placing the limb in this position, and an anæsthetic might be used, if desirable, so as to render manipulation painless. The same may be said of fractures of the upper end of the humerus, of the acromion, of the coracoid process, and of the neck of the scapula. In neither of these accidents can there be any physical impediment in the way of bringing the elbow in contact with the front of the chest, for in neither of them can the *upper end* of the humerus be so fixed against the ribs as to make it impossible for the *lower end* to touch the chest. Nothing, therefore, but a dislocation can prevent the limb from being placed in the position indicated.

If it be justly esteemed a matter of great importance to be in possession of correct principles of diagnosis in occult diseases, it is certainly not the less so with regard to surgical accidents, especially when these demand prompt interference. Our professional records unfortunately establish too conclusively the imperfection of our diagnostic resources in injuries of the joints, to permit any indifference on the subject. If, therefore, the views here presented may facilitate, in the least degree, the detection of injuries confessedly more or less obscure, my object will have been attained.

Supra-renal Capsules and Bronzed Skin. By George Harley, M. D., F. R. C. S. London.

[The following condensed analysis of the above paper published in the British and Foreign Med. Chir. Review, presents a comprehensive resumé of the various opinions and experimental results upon the subject. It is by Dr. Austin Flint, Jr., and is transferred from the Buffalo Journal.—Edts.]

The Supra-Renal Capsules. By Austin Flint, Jr.—Medical practitioners have always occasionally met with a disease affecting the color of the skin and accompanied by extreme emaciation, of the pathology of which they were utterly ignorant. We ourselves had an opportunity of seeing such a case in the wards of Prof. Flint, at the Buffalo Hospital of the Sisters of Charity. In this case, as far as our memory serves us, the patient was exceedingly emaciated ; had cough and extensive pulmonary disease, and was affected with a brown discoloration of the skin, which was general, with the exception of spots over the body of dazzling whiteness, which were of irregular shape, and varied in size from that of a sixpence to a dollar, or in a few places were even larger. The patient died a few days after his admission into the wards, but no autopsy was made.

A short time after this, we saw a notice of a monograph by Dr. Addison, on "*The supra-renal capsules and their connection with Bronzed Skin.*" Dr. Addison has made a number of post-mortem examinations of patients who where affected with this peculiar discoloration of the integument, which he denominated "*Bronzed Skin,*" and invariably found associated with it a disease or disorganization of the supra-renal capsules, by which their function was entirely abolished. As Addison was the first to point out any connection between bronzed skin and disease of these organs, it has been proposed that the disease shall be called "Addison's Disease," as albuminuria connected with organic diseases of the kidneys was named after its distinguished discoverer, Dr. Bright. Physiologists, as is well known, have never been able to determine definitely the function of the ductless glands or the blood glands, as they are sometimes called; which are the spleen, thynoid and thymus glands, mesenteric glands and the supra-renal capsules. These organs have all the anatomical characteristics of ordinary glands, with the exception of ducts; and, as owing to this, their secretion, if they have any, cannot be subjected to analysis, their *rôle* in the economy has remained almost unknown. In none of these, however, has the obscurity been so great as in the case of the supra-renal capsules. The brilliant experiments of Bernard in regard to the Glucogenic function of the liver,

which so surprised and delighted the scientific world, and which made such an advance into the pathology of that hitherto unaccountable disease, diabetes mellitus; gave a new impulse to the study of the ductless or blood glands; as by these experiments Bernard has shown that the liver, in addition to its office as a bile secreting organ, formed sugar within its substance, which was given up immediately to the mass of blood without the intervention of an excretory duct: since this was discovered, it has been shown that the liver also produces fat *de novo*, though as much is not known about this function as about the production of sugar. Thus the liver, in addition to being an ordinary gland, possessed of an excretory duct, is in reality a blood gland like the spleen, or supra-renal capsules.

A great proportion of the energy of the investigations into the functions of the ductless glands has been directed towards the spleen, and it is now supposed, and on pretty good foundation, that the spleen and mesenteric glands have an important office in the formation of blood globules. The physiology of the supra-renal capsules, however, had still remained buried in its original obscurity.

Upon the appearance of the excellent monograph by Dr. Addison, observers in all parts of the world set themselves to work upon the physiology of the supra-renal capsules; the paper of Addison having thrown some light on the subject, and seeming indeed to establish some connexion between these organs and the formation of pigment, or the regulation of its deposition. The Physiologists who have made known to the world the results of their experiments, are Gratiolet, Brown Séquard, Philipeaux, and Dr. Harley, of University College, London. The experiments of these gentlemen, whose names our readers will recognise as belonging to men eminent in this department, have led them to somewhat different results: we had the pleasure of listening to lectures by Dr. Brown Séquard on this subject a year ago, when he seemed to prove that the supra-renal capsules were essential in the highest degree to life, even more so than the kidneys themselves; as an animal survived for two or three days after the extirpation of the kidneys, but it lived for a few hours only after the removal of the supra-renal capsules. Brown Séquard also showed that animals from whom these organs had been removed, were convulsed and affected with that peculiar nervous phenomenon which is known as "turning," this turning always being in the same direction. He also asserts that death supervenes too rapidly to be due to inflammation of the peritoneum, and indeed, on examining this membrane after death, no evidences of inflammation are observed. Brown Séquard performed experiments in the presence of his audience, and we had an opportunity of witnessing the phenomena which he described.

The most elaborate and satisfactory paper on this subject which

we have yet seen, is from the pen of Dr. Harley, and appeared in the last number of the British and Foreign Medico-Chirurgical Review. This article we have carefully perused, and it was this which led us to make the preceding observations. Thinking this subject to be of great importance to us as Physiologists and Pathologists, we have been thus extended in our remarks, and will give a brief recapitulation of the more important results at which Dr. Harley has arrived; this we deem the more appropriate, as it is probable that many of our readers do not have an opportunity of seeing the above mentioned periodical.

In anatomical structure, these organs present no very striking points of difference from some of the ordinary secreting glands of the economy; they are formed of a medullary and cortical substance like the kidneys. There is a peculiarity however in their chemical constitution. "In the beginning of the last year, M. Vulpian communicated to the *Societié de Biologie* the discovery a very peculiar reaction possessed by the super-renal capsules of vertebrated animals. He found that an aqueous solution of iodine brought in contact with the medullary substance gave rise to a beautiful rose color. And further, that the greater portion of oxidizing agents acted like the iodine solution, although in a minor degree. Even the oxygen of the air, under the influence of light, produced the same effect. I have repeated M. Vulpian's experiment on the medullary substance of the supra-renal capsules of sheep with success; but am equally at a loss with the author to form an opinion as to the nature of the substance which possesses the strange property alluded to. We as yet know so little regarding the nature of color and coloring matter, that it would be futile to attempt to draw any conclusions with regard to the import of the rose colored reaction above spoken of."

"Not being able to separate the coloring matter, M. Vulpian, in concert with M. Cloez, proceeded to extract the "immediate principles" of the supra-renal bodies; and these gentlemen have recently communicated to the *Institute de France* as the result of their united labors, the discovery of hip-puric and tanrocholic acids in the supra-renal capsules of herbiverous animals. But as these substances have been abundantly found in different parts of the animal body, their discovery in the latter organs, although interesting, unfortunately throws no light upon the nature of their functions."

Dr. Harley has since seen a communication from Prof. Virchow, in which he confirms the observation of M. Vulpian with regard to the rose colored reaction, and also mentions that he has found senecine in the medullary substance.

The question arises whether the supra-renal capsules are organs peculiarly essential to fœtal existence and developement. It was formerly supposed that this was the case, and the argu-

ments in favor of this idea, were the great relative size of these bodies in the fœtus, and their small size in adults. Meckel states that at the third month, the supra-renal capsules and kidneys are of equal size, at the sixth month as 2 to 5. at birth as 1 to 8, and in adult life as 1 to 28. Later observations, however, by the author, Brown Séquard, and others, show a different result in the case of some of the mammalia. Dr. Harley has been confined in his observations to the cat, having examined thirteen fœtal and six adult capsules. Without giving the figures and calculations, we will give the results at which Dr. Harley has arrived and in which he confirms Ecker, Frey, and others: "The weight of the supra-renal capsule in the kitten at birth is to that of the kidney as 1 to 57.3; and in the adult as 1 to 54.8. But as so few adult capsules and kidneys were employed, it may be perhaps better to take the average of the whole six that were examined, which would then give us the relative weight of three organs in the full grown animal as 1 to 46.49.

"We shall find by a very simple calculation that the kidney was after birth increased 12.35 times in weight, while the supra-renal capsule at the same time has increased 14.87 times in weight. What conclusion are we to draw from this fact? We here see that the supra-renal capsules increase in size, as age advances, at a greater rate than the kidneys. I must here speak with caution however. Small statistics are dangerous data to draw conclusions from, and perhaps a larger number of observations might furnish us with different results."

Thus our readers will see that Ecker, Frey, and Brown Séquard, whose observations are here confirmed by Harley, have developed an exceedingly important fact in relation to the probable comparative activity of the function of the supra-renal capsule, whatever it may be, in fœtal and adult life: correcting the doctrines promulgated by Meckel, that these organs in the mammalia diminish after birth, both in relative size and activity of function.

We now come to experiments, bearing directly on the function of the supra-renal capsules. The first experiment was on an adult cat, from which the right capsule was removed. The animal survived nine days after the operation, and on post mortem examination, no cause of death could be discovered.

Another experiment was made on a white cat, from which the capsules were removed. This died in twenty-four hours, and on examination there were found all the indications of peritonitis.

Another experiment was made on a small white coach dog, from which the left capsule was removed. It died on the twelfth day, and on examination, signs of peritonitis were discovered.

An experiment was then made on two Guinea pigs, in one of which the abdomen was opened, and the amount of injury which the parts would suffer by the removal of the supra-renal

capsules, was inflicted, the wound sewed up, and the capsules allowed to remain; the fellow, which was of the same age, sex, and development, was then deprived of the capsule on the corresponding side. Both these animals died within twenty-four hours after the operation. The same experiment was then repeated on two cats. The cat from which the supra-renal capsule (the right,) was removed, lived two days; the other died during the third night. In the abdomens of both, signs of peritonitis were distinctly visible.

The next experiment was made on a bull terrier dog, by removing one of the capsules without applying a ligature to the vessels, the body being enucleated with the fingers. The dog remained in the author's possession for five months, and did not suffer from a day's illness.

The next experiment was of exceeding interest: it was on a large tom cat, in which, on opening the abdomen, the right capsule was rough and hard as a stone: it was enucleated with the greatest facility. The same operation was repeated on the other side with a similar result. On making a section of the capsules, it was found that a considerable portion of the medullary, as well as of the cortical substance, had become replaced by a calcareous deposit, consisting chiefly of carbonate of lime. The remaining portion of the gland contained so much fibrous tissue, that the normal structure might be said to have entirely disappeared. As the operation on this animal had been performed with the utmost facility, and there had been no hæmorrhage, or any apparent injury done to the surrounding parts, except the tearing through the vessels and nerves, the author felt sanguine of success. His astonishment was great therefore when, arriving at the college next morning, he found the cat dead. The post mortem examination revealed nothing, though the blood was searched for signs of phlebitis, examined for crystals, and for the flakes of pigment described by Brown Séquard. As it has been found by Ludwig and Haffer, that section of the splanchnic nerves will kill animals in one or two days, and according to Brown Séquard, mere pricking or cutting of the semi-lunar ganglion proves fatal to rabbits in thirty hours, while division of the sympathetic in the neighborhood of the kidneys causes death in twenty-three hours: in absence of other proof of death, it is probable that it resulted from injury done, in tearing out the capsules, to the ganglionic system of nerves.

The extirpation of the right is more fatal than the removal of the left capsule, as it proved by experiments which the author has cited, but which it is unnecessary for us to state. M. Gratiolet thought that this fact was to be explained by the proximity of the liver, and the occurrence of hepatitis; at first Dr. Harley was of this opinion, but he now very justly concludes that it is due to

another cause. The right semi-lunar ganglion, which is much larger than the left, lies (in the dog and cat) directly beneath the supra-renal capsule; while the smaller left semi-lunar ganglion is placed on the left crus of the diaphragm, and internal to the supra-renal body. Thus it will be immediately seen that a removal of the right capsule will do more mischief to this ganglion, and this injury has been shown by Ludwig, Haffer and Brown Séquard to be sufficient to produce death in a short time.

As it is generally the case in the removal of double organs, that if one be left it becomes hypertrophied from being compelled to perform a double function. Dr. Harley was anxious to observe if this was the case as respects the supra-renal capsules. He accordingly removed the right capsule from a cat, which had made an excellent recovery from the operation of removing the left about a month before. Nothing unusual, however, was observed: on the morning of the third day it died, and on opening the abdomen, two of the lumbar lymphatic glands were observed very much enlarged, and presenting a peculiarly beautiful, semi-transparent, lobular appearance.

Dr. Harley performed another experiment on a piebald rat, with reference to the same point. The right supra-renal capsule was removed, and the animal made a rapid recovery, being in excellent condition at the end of six weeks. The left capsule was then removed, and compared with others taken from animals of the same species and age, in order to ascertain if it had become hypertrophied. But in this, as in the case of the cat, there was no very marked difference in either its size or appearance. From the effects of the latter operation the animal speedily recovered, and ultimately became very fat and healthy looking.

An experiment was made on a white rat, in order to observe if any change would take place in the color of the hair and skin. Both capsules were removed at an interval of nine days. The animal lived sixteen days after the last operation, and during that time the color of the hair and skin was carefully watched, without discovering any alteration, excepting that the neck became denuded of hair, was covered with a luxuriant crop of young hair, about an eighth of an inch long.

The foregoing experiments, which we have presented in as condensed a form as was consistent, cannot fail to strike every one as extremely interesting, and leading to some very important conclusions. Brown Séquard has maintained that it is impossible for an animal to live for more than forty-eight hours at the farthest, after it has been deprived of its supra-renal capsules. The experiment of Dr. Harley fully controvert this statement, and in addition, M. Philipeaux, of Paris, has removed the spleen, supra-renal capsules, and the thyroid body from the same animal,

which afterwards recovered. Dr. Harley brought with him from Paris a young rat, the offspring of a mother which had been deprived of spleen and supra-renal capsules. Brown Séquard is also probably in the wrong in supposing that the convulsions and turning which followed his experiments, were due to the removal of the supra-renal capsules; as Dr. Harley has not observed it in his experiments, and is confirmed by a private letter from Professor Virchow, who has also failed to notice this phenomenon.

We had the pleasure, from the politeness of Dr. Brown Séquard, of examining certain microscopic crystals, which he invariably found in the blood of animals from which he had removed the supra-renal capsules. These crystals were unlike the ordinary blood crystals, being pale and needle shaped. Dr. Harley makes no allusion to this occurrence.

* * * * * * * * * *

Finally we present the conclusions drawn by Dr. Harley from the results of his experiments.

1st. *The supra-renal capsules are not solely fœtal organs.*

2d. *The supra-renal capsules are not absolutely essential to life.*

3d. *The removal of the right is generally more fatal than removal of the left capsule.*

4th. *That convulsions do not necessarily follow the removal of the capsule.*

5th. *That the absence of this function* (*in rats*), *is attended neither by great emaciation nor debility.*

6th. *That when death follows upon the extirpation of the supra-renal bodies, it is in most cases in consequence of the injury done to the neighboring tissues; perhaps most frequently the mutilation of the ganglionic system of nerves.*

7th. *Absence of the function of the supra-renal bodies, is not proved to have any special effect in arresting the transformation of hœmatin, or in increasing the formation of blood crystals.*

8th. *The suppression of the supra-renal capsular function is not attended by any increased deposit of pigment in the skin in its appendages* (*in rats*).

9th. *The problem of the connection of bronzed skin and supra-renal capsular disease is more likely to be solved in the dead house than in the physiological laboratory.*

To what Degree are the Intellectual Faculties affected in cases of Apoplexy and Hemiplegia? By Benjamin W. M'Creedy, M. D., Physician to Bellevue Hospital.

This inquiry, irrespective of its medico-legal relations, is of interest and importance to the medical practitioner. Dr. M'Creedy brings to bear upon it the results of an analysis of

cases collected from different authors, as well as instances falling under his own observation, and communicated to him by medical friends. From an examination of "a collection of cases of apoplexy," by Mr. Copeman, of London, published in 1845, he arrived at the following conclusions: "In all, out of a record of two hundred and fifty cases, fifty cases have been taken in which the patient had recovered from the first effects produced by the apoplectic stroke. They are all the cases contained in the book in which such recovery had taken place, and in which the cases were clearly of an apoplectic character. Yet in no one of the cases is there the slightest indication that the patient was left with a mind, I will not say reduced to a state of imbecility, but impaired in any marked degree. They all as far as the mind is concerned, with the exceptions to be mentioned, recovered; recovered perfectly; were restored to their usual state; returned to their previous occupations. In two instances the faculty of speech was either deranged or lost, and in those instances their physicians assert that the faculty of language, not reason, was deranged. In the third instance the patient is stated to have recovered with an impaired memory, and with some confusion of thought; but a merchant, seventy-three years of age, who after partial recovery from a severe apoplectic seizure, is enabled to labor for his support by writing for the weekly papers, may be esteemed to have still possessed a fair share of intellect and energy. The second attack left him yet more prostrate, very much weakened in body, and unable to do anything for the support of his family. From the third attack he never recovered; still there is nothing like imbecility: he lies for months in a feverish condition, alternating between coma and delirium, and even a few days before his death he partially recovered and talked in a rational manner with his wife."

The foregoing conclusions are corroborated by the results of an examination of a series of cases contained in Andral's *Clinique Médicale*, and in the *Anatomie Pathologique* of Cruveilhier. These cases, like the preceding, are quoted in brief detail by the writer. In expressing the results of this examination, the writer says: "Here then, are sixteen cases in which the condition of the intellect before the attack was obscured, in which the nature of the disease was verified by post-mortem examination—being all that are contained in the *Clinique Médicale* of Andral, and the *Anatomie Pathologique* of Cruveilhier, and reported by men whom every one will allow were competent, careful, and conscientious observers—in which the hemorrhage was situated in almost every part of the brain, presenting every degree of severity compatible with the continuance of life, many of them living for years after the occurrence of the apoplectic seizure, and yet in only two of these was there any decided improvement of the mind noticed."

The writer adds: "Perfectly in accordance with this have been the results of my own observations. At Bellevue, the great pauper hospital of the city, there are always a number of hemiplegiacs; but since my attention has been directed to the subject, I have seen no case in which hemiplegia has been the consequence of a well-marked apoplectic seizure, in which I have found the intellect seriously impaired. In some of these cases the first impression of the observer is wholly unfavorable to the intelligence of the patients; the distorted countenance, the impaired speech, and the motionless tears or laughter, give them an appearance of utter imbecility; yet a patient examination will commonly discover an amount of intelligence entirely unexpected." * * * * "From the facts given above, no other conclusions can be drawn than that any impairment of mind, as a direct consequence of apoplexy, after the patient has recovered from its primary effects, must be an exceptional occurrence. That the apoplectic seizure may hasten the approach of senile atrophy of the brain is, as before stated, probable; when atrophy has already commenced, an apoplectic attack may undoubtedly quicken its progress, and, in such a case, the friends of the patient would naturally attribute the rapid decay of the mind wholly to the apoplectic seizure. This, I think, I have myself seen; and as apoplexy becomes more common as life advances, such cases may not be unfrequent. The confusion of mind, the difficulty in pursuing a train of thought, of which apoplectics are apt to complain, is to a great extent the mere result of diminished nervous energy. They comprehend well, and judge correctly, but, before their general health is confirmed, they can no more think continuously than they can take a long walk, or perform any other act demanding a considerable expenditure of nervous force. It is not the brain specially that is affected—it is the system at large. Of all the faculties, memory, either special or general, is most apt to be impaired, and this impairment patients are always ready to admit and complain of. As the patient recovers, the memory commonly improves; and if no new attack supervene, this improvement is progressive for years." * * * "Whence, then, arises the number of imbeciles who are to be found in every almshouse? Partly, doubtless, from the cases already mentioned, in which senile atrophy is prematurely caused, or its progress hastened by the occurrence of apoplexy. And let us recollect the state of isolation and neglect from which such persons frequently, often necessarily, suffer, is in itself a main cause of a weakened intellect: the mind rusts out for want of exercise."

The writer details a series of cases in which, while the hearing remained unaffected, the patient's consciousness entire and no delirium, the faculty of speech was either lost or perverted.

He remarks on these cases as follows:—"Here, it will be seen, are eleven well-marked cases of hemiplegia, three of them complicated with epileptic convulsions, and all of them with loss or perversion of the faculty of speech. Besides the cases here recorded, three more have come to my knowledge the subjects of which, I believe, are still living. This shows conclusively the loss of speech, as an accompaiment of hemiplegia, to be no *very* rare occurrence. Of the whole fourteen cases, two have perfectly recovered the use of speech; two have recovered it to a partial and limited extent; the others still, I believe, remain speechless. From the cases recorded in the journals to which I have access, I believe that recovery from perversion of the faculty of speech is more common and perfect than when the power of articulation is either wholly lost or confined to a few monosyllables. Direct medication, except in so far as it improves the general health of the patient, seems to have no effect on the lost faculty; more is to be hoped for from careful, long continued, and well-directed exercise of the local organs by the patient himself."

The foregoing conclusions are certainly at variance with the views inculcated by medical writers and commonly held by practitioners. The general belief is, that after an apoplectic seizure, as a rule, the mind is more or less impaired, and in severe cases the patient is apt to fall into a condition of partial or complete imbecility. Epilepsy is also supposed to tend intrinsically to induce deterioration of the mental faculties in proportion to the frequency and severity of the paroxysms. Assuming that the writer's conclusions are correct, it is in a great measure owing to the pervailing error on the subject that the faculties of the mind are in a certain proportion of instances, permanently damaged; and it becomes a very important point in practice to enjoin, under judicious restrictions, that degree of exercise of the mental faculties which shall secure their healthful if not vigorous activity. This practical point is especially applicable to the management in cases of epilepsy. The reviewer has long entertained the opinion that, in this affection, the mental deterioration which is frequently observed is not due so much to an intrinsic tendency of the malady as to the isolation and inactivity incident to it. With reference to epilepsy, the author of the highly interesting paper which we have reviewed, states that he has "repeatedly seen and prescribed for a person who has had epilepsy for *thirty-three years*, occurring several times in every month, and sometimes eight and ten times a day; in whom, though there is obvious enlargement of one side of the head, and much headache, and the tongue bears the marks of countless lacerations, yet it is impossible to discover in this person the least change in her mental condition." He adds, that "both the medical profession and the judicial bench of the city can each furnish at least

one illustration of the distinction and usefulness to which persons who have been, or still are, subject to epilepsy, may attain."—[*New York Jour. of Medicine.*

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*Remarks on the Medicinal Hypophosphites.** By William Proctor, Jr.

[In our last number, we presented to our readers, a striking article from Dr. Churchill, on the use of the Hypophosphites, in the treatment of Tuberculosis. We here transfer to our pages a paper in which these several salts and their mode of preparation are described.—Edts.]

The recent researches of Dr. Churchill into the therapeutic character and value of the hypophosphites in tuberculosis, some account of which will be found at page 143 of this number, have attracted much attention from physicians, and many inquiries have been made after these salts; and it is believed that a notice of the processes for preparing them, and some formulæ for their prescription, will be acceptable to the readers of the Journal, especially, as from their hitherto unimportant position among pharmaceutical chemicals, no mention is made of them in works most accessible. The salts which have been used are those of lime, soda, potassa and ammonia. In the sequel a notice is given of these, of the hypophosphite of sesquioxide of iron, and of hypophosphorus acid.

The hypophosphites, according to Gmelin, are mostly crystallizable. They cannot exist without a certain proportion of water, which is equally true of the acid itself, which in its most concentrated form contains three equivalents of water, one of which is replacable by bases. When heated till decomposed, these salts emit phosphuretted hydrogen. They are permanent in the air as regards oxidation; but when heated in solution, especially if free alkali is present, they are decomposed into phosphates and hydrogen gas. They are nearly all soluble in water, and several of them in alcohol, and readily reduce the soluble salts of silver and gold

Hypophosphite of Lime is the most important of these salts, as it not only, by oxidation in the economy, will afford phosphate of lime in a nascent state, if needed, but its reaction with the carbonates of the alkalies give a ready means of obtaining the alkaline hypophosphites. When phosphorus is boiled with milk of lime it

*The Hypophosphites are manufactured in quantity by Hennell Stevens, of Philadelphia, who is successfully directing his attention to the supply of new chemicals for medicinal use, and fine chemicals in general.

gradually disappears, with evolution of spontaneously inflammable phosphuretted hydrogen, which explodes as it reaches the atmosphere with the formation of water and phosphoric acid. When the strong odor of phosphuretted hydrogen ceases to be given off, the liquid contains, besides the excess of lime, nearly half of the phosphorus as phosphate of lime, and the remainder, deducting the considerable portion which has escaped into the air as phosphuretted hydrogen, as hypophosphite of lime. According to Wurtz, more than one equivalent of water is decomposed, and the phosphuretted hydrogen is accompanied by free hydrogen. If this be true, the source of the super oxidation of so much of the phosphorus is traceable to the resulting oxygen; but Rose is of the opinion that this oxygen is derived from the atmospheric air in contact with the boiling liquid. When the process is conducted in a flask, it requires a constant ebullition of the liquid to prevent the explosion consequent upon the entrance of the atmospheric air. To avoid this result, it has been found safer to employ a deep, open vessel. The constant evolution of gas and vapor, which keeps a froth on the surface, excludes the atmosphere in a great degree, so that the yield is not much diminished, whilst the safety and easiness of the process is greatly increased. The process should be conducted under a hood with a strong draught, or in the open air, to avo id the disagreeable fumes which are evolved.

Take of Lime recently burned - - - - - -	4 lbs. av.
Phosphorus - - - - - - - - - - -	1 lb. "
Water, - - - - - - - - - - - -	5 gals.

Slake the lime with a gallon of water, put the remainder in a deep boiler, and as soon as it boils add the slaked lime, and mix to a uniform milk. The phosphorus is now added, and the boiling is kept up constantly, adding hot water from time to time, so as to preserve the measure as nearly as may be, until it is all oxidized and combined, and the strong odor of the gas has disappeared. The mixture froths much, and but little of the phosphorus reaches the surface. Then filter the solution through close muslin, wash out that portion retained by the calcareous residue with water, and evaporate the filtrate till reduced to six pints. The concentrated liquor should now be re-filtered to remove a portion of carbonate of lime which has resulted from the action of the air on the lime in solution, and again evaporated till a pellicle forms, when it may be crystalized by standing in the drying room, or the heat may be continued with stirring till the salt granulates, when it should be introduced into bottles.

Hypophosphite of lime is a white salt with a pearly margarin-like lustre, and crystalizes in flattened prisms. Its composition, according to Wurtz, is $CaO,-|-2HO,PO$, the water being essential to the salt. It is soluble in six parts of cold water, and in not

much less of boiling water; it is soluble slightly in diluted alcohol, but insoluble in alcohol sp. gr. .835.

Hypophosphate of Soda is prepared by double decomposition between hypophosphite of lime and crystalized carbonate of soda.

Take of Hypophosphite of lime - - - - - - - 6 oz.
Crystalized carbonate of soda - - - - 10 "
Water, a sufficient quantity.

Dissolve the hypophosphite in four pints of water, and the carbonate in a pint and a half, mix the solutions, pour the mixture on a filter, and lixiviate the precipitate of carbonate of lime, after draining, with water, till the filtrate measures six pints. Evaporate this liquid carefully till a pellicle forms, and then stir constantly, continuing the heat till it granulates. In this state the salt is pure enough for medical use; but if desired in crystals, treat the granulated salt with alcohol sp. gr. .835, evaporate the solution till syrupy, and set it by in a warm place to crystalize.

Hypophosphite of soda crystalizes in rectangular tables with a pearly lustre, is quite soluble in water and in ordinary alcohol, and deliquesces when exposed to the air. Its composition is NO –|–2HO,PO.

Hypophosphate of Potassa is prepared by the same process as that given above for the soda salt, substituting $5\frac{3}{4}$ ounces of granulated *carbonate of potassa*, in place of 10 ounces of crystalized carbonate of soda, and using half a pint instead of a pint and a half of water to dissolve it.

Hypophosphite of potassa is a white, opaque, deliquescent salt, very soluble in water and alcohol. Its greater tendency to absorb moisture renders it less eligible for prescription than the soda salt. Its composition is KO–|–2HO,PO.

Hypophosphate of Ammonia is prepared from hypophosphite of lime and sulphate or carbonate of ammonia.

Take of Hypophosphite of lime - - - - - - - 6 oz.
Sesqui-carbonate of ammonia (translucent) 7.23 oz.
Water, a sufficient quantity.

Dissolve the lime salt in four pints of water, and the ammonia salt in two pints of water, mix the solutions, drain the resulting carbonate of lime, and wash out the retained solution with water. The filtrate should then be evaporated carefully to dryness, then dissolved in alcohol, filered, evaporated and crystalized.

This salt is deliquescent in the air, very soluble in alcohol and water, and when carefully heated evolves ammonia, and leaves hydrated hypophosphorus acid. The composition of this salt is NH^3–|–2HO,PO.

Hypophosphite of Sesquioxide of Iron.—This salt may be obtained in the form of a white gelatinous hydrate, by precipitating a solution of hypophosphite of soda or ammonia with one of sesquisulphate of iron. The precipitate should be well washed with

water and dried at a moderate temperature. It is necessary to avoid using a hypophosphite containing any alkaline carbonate or the precipitate will be contaminated with free sesquioxide. Thus prepared, this salt is a white, amorphous, tasteless powder, like the pyrophosphate, soluble in hydrochloric acid, and in free hypophosphorus acid.

Hypophosphorus Acid.—So far as we are aware, this acid has not been employed, in a free state, by Dr. Churchill, but it is highly probable that it may come into use, should the favorable results claimed for its salts be substantiated by new observations. Any claims which phosphoric acid may possess as an agent to supply the waste of phosphorus and phosphates in the human economy, will be more than equalled by this acid. Hypophosphate of baryta is the salt which is most eligible for the preparation of this acid. but it is more convenient to prepare it from the lime salts viz:—

Take of Hypophophite of lime - - - -	480 grains.
Crystalized Oxalic acid - - - -	350 grains.
Distilled water - - - - - -	9 fluid oz.

Dissolve the hypophosphite of lime in six ounces of the water and the acid in the remainder, with the aid of heat, mix the solutions, pour the mixture on a white paper filter, and when the liquid has passed add distilled water carefully, till it measures ten fluid ounces, and evaporate this to $8\frac{1}{2}$ fluid ounces

The solution thus prepared contains about ten per cent. of terhydrated hypophosphorus acid (HO–|–2HO,PO) a teaspoonful representing 6 grains of the acid, which contains $2\frac{1}{4}$ grains of phosphorus. The dose of this acid solution will probably vary from ten minims to a teaspoonful.

It is proposed to give several forms in which the hypophosphites may be conveniently administered, and a few hints to the physician in reference to prescribing them.

The soluble salts of mercury and silver are reduced by contact with the hypophosphites. All soluble sulphates and carbonates are incompatible with the lime salt, and should not be associated with it in prescriptions, if phosphate of lime is indicated in the case. The iron salt when dissolved by excess of acid is colored black by gallotannic acid and drugs containing it, but is not blackened by the tannin of cinchona, catechu and krameria; hence any preparation containing it may be associated with Peruvian bark. The hypophosphites of soda, potassa and ammonia, are more or less deliquescent, and when prescribed in powder it should be with proper precautions to avoid moisture, as by association with a considerable excess of sugar of milk. The lime salt may be mixed with either this sugar or ordinary sugar. None of these salts are soluble in cod-liver oil; and if given with it, they should be dissolved in syrup, and mixed by agitation. Where

lactin and glycerin are indicated in the treatment of phthisis or dyspepsia, any of these salts may be very elegantly associated in the form of syrup.

Syrup of Hypophosphite of Lime.

Take of Hypophosphite of lime, an ounce.
Water, nine and a half fluid ounces.
White sugar, twelve ounces.
Fluid extract of vanilla, half a fluid ounce.

Dissolve the salts in the water, filter, add the sugar, dissolve by aid of heat and add the vanilla. The dose is from a tea-spoonful ($3\frac{1}{2}$ grs.) to a table-spoonful (14.,) according to the circumstances of the case, three times a day.

Compound Syrup of Hypophosphite.—The following formula has been made in view of the double purpose to which these salts are directed by Dr. Churchill, viz: the increase of nerve force, and the elevation of the tone of the several functions concerned in alimentation and nutrition; and will afford an agreeable means of testing practically their merit. The iron salt is presented in a form well adapted for entering the circulation, whilst the acid, besides exerting its solvent power, adds to the agreeable taste of the preparation.

Take of Hypophosphite of lime,	256	grains.
Hypophosphite of soda,	192	"
Hypophospite of potassa,	128	"
Hypophosphite of iron* (recently precipitated)	96	"
Hypophosphorus acid solution, q. s. or	240	"
White sugar,	12	ounces.
Extract of vanilla,	$\frac{1}{2}$	ounce.
Water, a sufficient quantity.		

Dissolve the salts of lime, soda and potassa in six ounces of water; put the iron salt in a mortar, and gradually add solution of hyphosphorus acid till it is dissolved; to this add the solution of the other salts, after it has been rendered slightly acidulous with the same acid, and then water, till the whole measures 9 fluid ounces. Dissolve in this the sugar, with heat, and flavor with the vanilla. Without flavoring, this syrup is not unpleasant, being slightly saline, and not at all furruginous. Any other flavoring may be used, as orange peel, orange flower or ginger. It is also suggested to physicians that glycerine may be used, wholly or partially, in sugar when indicated, six ounces and a half of glycerine being substituted for twelve ounces of sugar. The object of acidulating the saline solution is to decompose any alkaline

*This quantity 96 grains, of hypophosphite of iron is obtained when 128 grains of hypophosphite of soda dissolved in 2 ounces of water is decomposed with a slight excess of solution of persulphate of iron, and the white precipitate will wash on a filter with water.

carbonates which may be present, and which have been noticed by the writer in some of the commercial soda salt. The dose of this preparation is a teaspoonful three or four times a day. A teaspoonful contains 2 grains of the lime salt, $1\frac{1}{2}$ of the soda salt, 1 of the potassa salt, and $\frac{3}{4}$ of a grain of the iron salt, besides a little hypophosphorus acid.—[*American Jour. of Pharmacy.*

Reports of Cases of Diphtherite, or Malignant Sore-throat. By Benjamin Godfrey, M. D., M.R.C.S.L.

Case 1. J. B——, a little boy, aged two years. He had been healthy and strong through life, with the exception of the trivial ailments incident to childhood. Five months ago he suffered from discharge of pus from the ear, with occasional epistaxis. These ailments soon passed away, and he continued pretty well until the present attack.

Oct. 17th.—The child complained of cold in the head; discharge of yellow mucoid matter from the nose, with occasional hæmorrhage, dyspnœa, and dysphagia; great drowsiness and extreme languor. The tongue was slightly coated, but not injected; the skin was moist and comfortable; the pulse quick and feeble, 120; pupils dilated. On examination of the throat, a small, whitish spot was observed on the mucous membrane of the right tonsil, about the size of a pea; bowels constipated. Ordered the sixteenth of a grain of extract of belladona, with one grain of carbonate of ammonia, every three hours; a rhubarb and jalap powder at bedtime.

18th.—The patient is much weaker; dyspnœa greater, but dysphagia less. The spot has become of an ashy hue, extending over the right tonsil, and slowly creeping over the uvula. Pulse 130. Repeat the mixture.

19th and 20th.—The discharge from the nose and mouth has increased—very acrid, and of a highly offensive odor; the throat externally is much swollen; the parotid and sub-maxillary glands are much enlarged; both tonsils are coated with the ulcerative process; pulse 130; tongue coated, white; bowels nicely relieved, but great exhaustion and prostration is apparent. Ordered carbonate of ammonia and tartrate of iron every three hours; port-wine and beef-tea in abundance.

21st.—Still getting weaker; almost pulseless; extremities cold; face palid and anæmic; throat very much swollen externally. Ordered warm fomentations; milk, wine, and beef-tea, and ten minims of the tincture of sesquichloride of iron every three hours.

22nd.—Less swelling of the throat externally. The black gangrenous mass is sloughing away, and a line of demarcation

is visible, of healthy granulations springing up to throw off the dead fœtid mass, and to restore health to the diseased part. Dyspnœa less; dysphagia now but slight. Repeat the medicine and nourishment.

23rd and 24th.—Very much better. Several pieces of highly offensive dead material have passed away. Pulse stronger; tongue nearly clean; bowels relieved; pupils less dilated, but still drowsy and very weak.

Day by day the little sufferer improved, and gathered strength each day. The only drawback to his recovery was an occasional attack of epistaxis, which blanched the restored color of the cheeks and enfeebled the returning powers. Iron and quinine with strong beef-tea and wine, were freely given, but exhaustion soon set in, and he died on the 3rd of November, a fortnight after the attack, anæmiated and exhausted.

Case 2. B. B——, residing in the same house. He was a strong, well-built boy, of excitable temperament, and affectionate disposition. He was taken ill on the 22nd of October. He complained of great languor, chilliness, stiffness of the neck, dysphagia, and headache. The tongue was white, but the papillæ were not more prominent than they are in irritation of the stomach. The throat was much swollen externally, and on the tonsil a small ashy spot was seen. No heat of skin; no dryness, but the palms of the hands were moist and comfortably warm; pulse quick and weak, 130. Ordered the belladonna and ammonia mixture every three hours.

Oct. 23rd.—Bowels freely moved; throat much worse; spot very much extended, and the breath extremely fœtid; discharge from the nose great; pupils much dilated; urine free and normal. Ordered to gargle well with warm water, alternating with the chloride-of-zinc gargle. Wine and beef-tea to be freely taken, and ten drops of the tincture of muriate of iron every three hours.

24th.—Throat more swollen; dysphagia greater, and dpspnœa also increased. Applied nitrate of silver solution, ten grains to the ounce, to the throat with a sponge probang. Small pieces of black disintregrated mucous membrane came away. Complains of the wine and beef-tea burning his throat, and causing his ears to tingle.

25th.—The throat is one black gangrenous mass, the odour of which is very disagreeable. His powers are fast failing. Takes half a pint of port wine a day, with beef-tea, &c. Milk also in abundance.

26th.—Fast sinking. Throat exceedingly swollen; dyspnœa greater than dysphagia; pupils much dilated; extreme drowsiness, yet perfectly sensible when aroused. He continued failing till the 27th, when he expired.

Case 3. J. B.——, aged seven years, brother of the patient before mentioned. He was attacked with the same disease, with precisely the same order of symptoms. He was treated with chlorate of potash and cascarilla the former part of the illness, and nitro-muriatic acid and gentian the latter part; but in seven days from the time he was attacked he also died.

Case 4. In the same house was a young lady who had watched over the before-mentioned children, and on the 28th she was also taken ill. The first symptoms were,—Shivering, and intense prostration, so powerless that she could not stand; tingling of the throat, back of the nares, and in the ears; the throat became dry, and deglutition became difficult. On examining the throat, there was the plague-striken spot on the left tonsil. Ordered four ounces of port wine and strong beef-tea, with the nitro-muriatic acid and cascarilla mixture.

Oct. 29th.—The spot is much increased, extending over the uvula. Powers enfebled; pulse 120, very feeble; tongue white eand furred; skin cool and moist; bowels regular; urine scanty, but natural. She can scarcely breathe through her nose. The discharge is increased from the mouth and nose, and the breath is become fœtid. Ordered the chloride-of-zinc gargle, and thirty drops of the tincture of the sesquichloride of iron in infusion of columbia root. Strong hydrochloric acid was applied with a glass rod to the ulcerated surface. Several large pieces sloughed away.

30th.—Pulse very feeble, and bodily power failing. The whole of the soft palate and back of the throat is covered with the sloughing mass. The ears and Eustachian tubes are very tender and painful. Deglutition is performed with great effort and pain. The nares are extremely painful, and the discharge acrid and disagreeable. Applied again the muriatic acid. Ordered half a pint of port wine a day, with eggs and beef-tea, and to continue the medicine.

31st.—Still getting weaker. Pulse 130, irritable; skin cold and clammy; the wine passes down her throat like liquid fire, giving great pain. Ordered wine and beef-tea *ad libitum*; the iron to be increased in quantity, three drachms of the tincture to be taken every day.

Nov. 1st.—Better; throat less swollen, and dysphagia less; bowels well moved; dyspnœa less. At every gargle, pieces of dead material came away. Steaming her nose and throat over hot water has relieved her much. Skin beautifully warm and moist.

2nd and 3rd.—The throat is granulating quickly; several large pieces have been thrown off; fœtor less, and appetite improving; pulse 120, fuller and more regular.

From this time she began gradually to improve; each day pieces of morbid material were brought away. The throat healed up in the course of a week or two perfectly, and day by day her powers improved, and she left my care on November 15th, quite recovered.

Remarks—The disease appears to me to be confined to the mucous membrane, neither touching the muscular nor glandular structure. The glandular enlargement is due to sympathetic irritation, the same as we see often in other parts of the body; thus a wound in a leg producing an enlarged gland in the groin. The question has been asked—"Is it scarlet fever *without* the rash!" This, I think, is answered—1st, *by absence of all fever;* 2ndly, absence of all rash; 3rdly, papilæ of the tongue not enlarged; and 4thly, no desquamation of the cuticle after the disease passes off. Yet, on the other hand, scarlet fever existed in the adjoining house. It differs also materially from cynanche tonsillaris. In that disease the abscess forms within the tonsil, and bursts its way out. But in diphtherite, the morbid change commences on the surface of the mucous membrane, and is confined solely to that covering. The extreme and rapid depression is only equalled by the depression of malignant scarlet fever, or the collapse of Asiatic cholera. Each patient that died appeared to sink from exhaustion and partial asphyxia.

Treatment.—The main point to keep in view is to support the patient's powers, and check as far as possible the inroad of the disease. The former by stimulants and tonics; the latter by the application of the strong mineral acids. The question may arise, might not tracheotomy have been successfully employed to relieve the dyspnœa. My reply is, that the depression of the patient's powers was far greater than the dyspnœa, so that the operation would have been unsafe. That depression did not result from the blood being imperfectly aerated is shown by the depression appearing before the dyspnœa. The dilatation of the pupil did not depend upon the belladonna given, for it existed as a marked symptom in every case. As regards remedies, I believe the tincture of sesquichloride of iron the best. The essentials of the disease, or the symptoms in the order they occur, are these:—*Shivering, intense depression; dryness and tingling of the throat, nares, and ears; external swelling of the glands; a whitish spot on the mucous membrane of the tonsil, gradually deepening in colour as the disease progresses; dysphagia and dyspnœa; dilated pupil; impending asphyxia, and death.*

[*London Lancet.*

Report of a Case of Tetanus occurring in Bellevue Hospital under the care of Dr. Jas. R. Wood, Visiting Surgeon. By J. J. CAMPBELL, M. D., House Surgeon.

Rebecca H., aged 38, pretty good constitution, but of intemperate habits, was admitted into Bellevue Hospital, at 4 P. M., February 7th, 1858, with severe burns of both lower extremities, caused the evening before by getting her clothes on fire. When admitted, she was suffering a great deal of pain, and her stomach was so irritable that she could scarcely retain any of the nourishment and stimulants that were given her. Her pulse was frequent and feeble, and she had slept none the night previous. Stimulants and anodynes were given freely, and her limbs were ordered to be dressed with cotton soaked in equal parts of linseed oil and lime water.

Feb. 8th. Did not sleep any last night, although she had taken the eighth of a grain of morphine every hour since her admission; her stomach still remains irritable; her pulse continues frequent and weak, and her limbs feel easier. Sub-nitrate of bismuth, opium, and a small quantity of carbonate of ammonia, ordered in pills, to be given with the view of allaying the irritability of her stomach. Beef tea and rare boiled eggs directed to be taken in small quantities at a time. Stimulants and anodynes to be continued as before. This course of treatment was persevered in, but she did not improve much until February 11th, when she was able to retain all the nourishment that was given to her. Her pulse still remained frequent, although it was stronger than when she came into the hospital. She rested better at night, and continued doing well in every other respect from this time until the morning of February 15th, when she was attacked with the symptoms of trismus, that I first noticed by directing her to put out her tongue, which she could not do to any extent, as she could not separate her jaws more than three quarters of an inch. On inquiry, I ascertained that she had some stiffness in the muscles of the back of the neck. I then desired her to swallow a little beef tea, which she did with great difficulty and a feeling of choking. Morphine, in half-grain doses every two hours, was ordered to be given, and her allowance of stimulants increased.

At 11.30 A. M. she was seen by Dr. Wood, who directed that she should be put upon a stimulant, anodyne and anti-spasmodic course of treatment. Twenty ounces of brandy and a pint of madeira wine were ordered to be given in the twenty-four hours. The morphine was given pretty freely by the mouth; but as she could not swallow as much of the stimulants as was directed, they had to be in part injected into the rectum with two

ounces of lac assafœtida and one drachm of tincture of opium every two hours. She was also directed to be kept as quiet as possible. Her pulse at this time was 128, quick and moderately full, and her respiration a little more frequent than it had been for a few days past. There was not much increase in the severity of the symptoms up to 10 P. M. At 11 P. M. she commenced sleeping, and continued doing so until 2 A. M., after which she remained wakeful.

9 A. M., February 16—pulse 128, quick and moderately full; respiration 24; cannot separate her jaws more than one-third of an inch; has great difficulty in deglutition; muscles of the neck quite rigid; head drawn back, and does not appear to suffer much when undisturbed. She has had no spasms except of the muscles of the back of the neck. Same treatment continued.

6 P. M. With the exception of a little more difficulty in swallowing, is in much the same condition that she was this morning.

Feb. 17th, 9 A. M. Slumbered a little during the night; pulse 132, quick and weak; respiration 34; rigid spasm of all the muscles about the jaws and neck, and cannot drink from the feeding cup; and all the fluid she swallows has to be injected into her mouth with a small syringe. Her face assumes a livid hue during each attempt at deglutition. Has to lay on her side, owing to the strong contraction of the muscles on the back of her neck. Loud rales, produced by the air passing through the secretions in the mouth, can be heard while standing by her bedside. Her bowels moved during the night for the first time since the 14th. At 1.45 P. M., was seized with a convulsion that affected the whole body, but more especially the muscles of the back and neck. Well-marked opisthotonos remains. Her jaws are rigidly closed, and she cannot swallow anything. At 3.40 P. M., has had another general convulsion that lasted for about a minute. At 4.45 P. M., has had another convulsion like the two former. Pulse 120, and weak; respiration 45, and is perspiring quite freely. Chloroform was tried, and the muscles closing, the jaws relaxed a little. From this time until twenty minutes of six, when she died, she had a great many convulsions. Just as she was breathing her last, all her muscles became quite flaccid. During the two hours preceding her death, one ounce of the tincture of opium with very near a pint of brandy and wine were injected into her rectum. She remained rational until the last moment of her life.

Her burns looked healthy all the time.

Post mortem 39 hours after death. Slight rigor mortis. Some venous congestion of the vessels of the brain aud spinal cord. About two ounces of serum escaped on opening into the dura

mater of the brain and cord. No other condition noticed in these parts. The right side of the heart, especially the right auricle, was distended with black, clotted blood, while the left side contained but very little. This organ felt normal. No ulceration could be detected in either the stomach or duodenum. The colon contained a great deal of scybalæ. The bladder was empty and contracted.—[*American Med. Monthly.*

A Case of Tetanus Relieved by Amputation. By W. W. Anderson, M. D., of Stateburg, S. C.

Chavis, a strong, athletic negro man, in the prime of life, the property of Col. Richard Singleton, in the month of January, 1845, was lifting a long, heavy inch plank, with a ten-penny nail driven to the head through one end of it. The plank accidentally slipped out of his hands and fell on his foot. The nail penetrated his great toe near the joint, and between the joint and toe-nail. The next day he went to his work as usual; but a day or two afterwards his master, passing by, found him sitting by the road-side, and learning the cause of his leaving his work, ordered him to go home and poultice his foot. He did so, but continued to suffer considerable pain and uneasiness until the 15th of the same month, when I was called to see him, about five days after the accident. I found him in pain, with symptoms of approaching tetanus. An incision was made in the course of the wound, and spirits of turpentine applied. The usual remedies, such as mercurial purgatives, blisters, the free administration of opiates, etc., were followed up actively, but to no purpose. Violent spasms came on, accompanied with pain in the back of his neck, and constriction of his chest and abdomen. The spasms increased in violence and frequency every day, until the opisthotonos was so great that his head and heels were brought nearly into contact with each other during the spasms, and he was unable to swallow in the intervals of the paroxysms. So great were the debility and exhaustion, that I considered the case hopeless, and expressed this opinion to Col. Singleton, but said I wished to try the effects of amputation, as a last resort, to which he readily consented. Having only a pocket-case of instruments at hand, I rode to a carpenter's shop not far off, and borrowed a fine tenon saw, and immediately on my return began the operation. With a bistoury I made an incision around the toe, through the skin, and immediately over the joint, dissected up the integument, and turned it back; then completed the incision to the bone, and sawed it off between the joints, tied the artery, drew down the skin, and secured it with adhesive plaster. A soft compress over the stump, and

bandage, completed the operation. After a little rest, he swallowed a large dose of laudanum, and was ordered to be kept as quiet as possible. I now dissected the toe, and following the course of the wound, found at the bottom of it, imbedded in the cartilage near the joint, what I at first supposed to be the point of the nail; but on further examination, it proved to be a hard piece of black leather, which had been punched from the man's shoe by the blunt nail, and deposited there. No inflammation was apparent in the cartilage; but there is little room to doubt that this minute piece of hard leather was the cause of all the mischief. In a short time after the operation the spasms began to abate, and in a day or two ceased altogether. The patient was now convalescent. The toe healed kindly, and the man recovered his usual health. I saw him from time to time afterwards, for several years, a strong healthy negro.

[*Charleston Med. Journal.*

New Researches on the general Paralysis of the Insane.

This affection, which has been, for the first time, well described by some French physicians, among whom particularly Bayle and Calmeil, has lately been the object of a very remarkable inaugural dissertation by M. Linas. One of the principal questions examined by this young physician, concerns the nature of this disease. Is it the effect of an inflammation of the encephalon or of its membranes, as Bayle, Delaye, Calmeil, Parchappe and others admitted, or is it a purely *nervous* affection of the brain, as Lélut and others have maintained?

Already Bayle had opened one hundred corpses of paralytic insane, and Calmeil forty-seven. They had found the meninges of the convexity of the cerebal lobes opaque, injected, hardened, infiltrated with serosity, and offering frequently granulations or false membranes. M. Linas has opened one hundred and fourteen bodies of paralytic insane. In twelve cases he has found the pia-mater excessively injected. The cerebral substance was quite full of blood, the grey matter being from an intense red to a dark violet. In twenty-eight cases, besides the preceding alterations, there were adhesions between the convolutions and the meninges. In seventy-four cases, the meninges were infiltrated, opaqe, and as tough as a fibrous membrane; the cortical substance of the brain, sometimes violet, sometimes yellowish, according to the degree of the paralysis, always softened, less thick than in normal brains; the white substance injected, and sometimes infiltrated; the convolutions meagre, and the whole mass of the brain more or less atrophied.

In thirteen cases, besides the preceding alterations, there was

one or many small circumscribed places where the encephalitis had been more violent than elsewhere. In eight cases there were also effusions of blood.

From these facts, it results positively that the paralysis of the insane depends upon a chronic inflammation of the brain and its meninges. Whether the disease begins in the membranes, as Bayle had said, or in the brain itself, as M. Calmeil maintains, is a question of comparatively little importance. The great point is, that the brain is always inflamed. M. Calmeil has ascertained with the microscope, that in doubtful cases, when the brain did not seem to be much altered with the naked eye, there were, nevertheless, all the microscopical appearances of inflammation. M. Linas relates cases to prove, that an acute encephalitis may cause the paralysis of the insane.

As regards the first symptoms of this affection, M. Linas declares, that sometimes intellectual disorders first appear, and in other cases, muscular paralysis and insanity appear at the same time. It has been said that there was always what is called by the French, ambitious delirium. But Parchappe, Trélat, Lasègue, have shown that there are exceptions to this rule, and that, therefore, there is nothing specific or essential in this symptom. M. Linas goes farther, and he calls this opinion a paradox. According to him, the delirium of paralytic insane has sometimes the monomaniac form, sometimes the hypomaniac, and in other cases the maniac; but he acknowledges that ambitious ideas are extremely common.—[*New York Jour. of Med.*

Transfusion of Blood.

I have communicated several papers on this subject to the *Académie des Sciences* (see *Comptes Rendus*, 30th Nov. 1857, p. 925), to the *Société de Biologie*, and to the *Cercle des Sciences*.

It is known that Blundell had found that a dog, bled almost to death, can recover, even if blood of a mammal of another species, be transfused into its veins; but that after a few days death always comes; while the blood of another dog being employed for the transfusion, may reproduce a lasting life.

Messrs. Prevost and Dumas declare also that mammals cannot be recalled permanently to life after a great loss of blood, if transfusion be made with blood of mammals of a species different from theirs. They state also, that the blood of animals transfused in the veins of birds, and *vice versâ*, produces almost immediate death, after having caused violent convulsions. M. Rayer affirms, also, that the blood of man kills rabbits, after having produced convulsions. Dieffenbach has sometimes seen animals recover after transfusion of blood of animals of other species, but

never when they were in a state of apparent death after a considerable loss of blood. Bischoff also has never succeeded in restoring to life mammals that had lost a great deal of blood, in transfusing blood of birds in their veins.

An important fact, found by Bischoff, should, however, have opened the way to more successful results in transfusion. He ascertained that the arterial blood of mammals can be injected in the veins of birds, without killing them, while the venous blood causes rapid death. I have found that venous and arterial blood do not differ one from the other, except on account of the different quantities of carbonic acid and oxygen they contain. Both may kill, if they are rich in carbonic acid; both may not have any injurious influence if they contain a great quantity of oxygen. Numerous experiments have led me to the following conclusions:

1st. That arterial or venous blood from an animal of any one of the four classes of vertebrata, containg oxygen in a sufficient quantity to be scarlet, may be injected, without danger, into the veins of a vertebrated animal of any one of the four classes, provided that the amount of injected blood be not too considerable.

2nd. That arterial and venous blood of any vertebrated animal, being sufficiently rich in carbonic acid to be almost black, cannot be injected into the veins of a warm-blooded animal, without producing phenomena of asphyxia, and most frequently death, after violent convulsions, provided that the quantity of injected blood be not below one-five-hundredth of the weight of the animal, and also that the injection be not made too slowly.

The reasons for which Blundell, Bischoff, and others have failed to restore a lasting life after the transfusion of blood of an animal of a species different from that of the transfused one, are: 1st, That the blood employed was not fresh; 2nd, that it was in too large a quantity; 3rd, that it was injected too quickly; 4th, that it was too rich in carbonic acid, and too poor in oxygen. The greatest causes of failure were this last one, and after it the quantity of blood.

From my experiments I have arrived at the conclusion, that there is no danger in employing the blood of dogs, cats, or other mammals in transfusion in man. Besides, I have ascertained, after Dieffenbach and others, that defibrinated blood is as good as blood containing fibrin. As regards the quantity of blood, I think that four or five ounces would be as much as can be needed for an adult man or woman. It is not necessary to warm the blood, but it may be useful to do it in some cases. The blood to be transfused, either that of man or of mammal, should be received in a large open vase, and whipped at once, then passed through a thick cloth. If it is not injected at once, it must be

either whipped again, or, at least agitated to be charged with oxygen just before transfusion, which can be performed with any kind of syringe. The injection must be extremely slow, and if after the injection of two or three ounces, there is a great increase in the respiratory movements, it is well to stop for ten or fifteen minutes before finishing the transfusion.—[*New York Journal of Medicine.*

On Indications and Treatment of Croup.

According to Luszinsky, of Vienna, there are four indications to be followed in croup, which are—1st, to alter the peculiar crasis of the blood. This indication requires antiplastics, of which hepar sulphuris, sulphate of copper, and tartar emetic are either too uncertain, or too dangerous, because repeated vomiting would be injurious by congestion of the brain, and mercury, which readily injures by producing diarrhœa, salivation and general mercurialism. Better than all of them, are alkalies, which Luszinsky seems to have recommended prior to Lemaire and Marechal, of Paris. The hydrate of potash or soda is most antiplastic, but they are not easily tolerated; the bicarbonate is the most digestible, but the abundance of carbonic acid in the chemical composition of the bicarbonate of potash or soda diminishes the medicinal effects of the alkalies; therefore he gives the carbonate of potash or soda, from one half of a drachm to two drachms every day. 2nd—To prevent the localization of the inflammation in the larynx. This indication requires no bleeding, nor leeches, but in the first stages of the disease, cold applied to the larynx, and large blistering plasters, kept in suppuration for some days. 3rd—To remove the spasm of the larynx by narcotics. 4th—To destroy or remove the pseudo-membranes which have been formed. The best caustic in these cases is a solution of from four to eight grains of nitrate of silver in an ounce of water, which is to be applied by a brush. Emetics are necessary, where pseudo-membranes are loose, or beginning to loosen, in the larynx or bronchi.—[*Journal für Kinderkrankheiten*, and *Ibid.*

On the Abuse of Irritating Applications in certain Forms of Ophthalmia. By Mr. Critchett.

There was recently a case under Mr. Critchett's care, in the Royal Ophthalmic Hospital, in which the greatest benefit has been derived from desisting from the measure which had previously been employed. The patient is a lad of eighteen, to whose eyes, for four years past, stimulating drops had been daily

applied, on account of chronic inflammation and thickening of the conjunctiva. His eyes had been kept in a state of constant irritation, and when admitted his vision was very imperfect, on account of superficial vascularity of the cornea. He had been sent up from a considerable distance in the country. Mr. Critchett directed the eyes to be left quite alone, a single seton thread being introduced in each temple. The improvement was extremely rapid, and within a week the greater part of the vascularity had cleared away. No doubt the seton has had some good influence; but, looking at the rapidity of the cure, it seems certain that the chief agent has been the rest from injurious applications. Cases more or less similar are constantly presenting themselves, in which, with a perverseness worthy of a better cause, irritating collyria have been employed for periods far too long.—[*Med. Times and Gaz.*, and *Ranking's Abstract.*

Epilepsy treated by Ligation of the Common Carotid Artery. By C. Angell, M. D., of Pittsburg, Indiana.

Dr. Angell has resorted to ligation of the common carotid artery on one side in two cases of epilepsy. The first operation was performed in July, 1857. The patient, a male, was twenty years of age, about five feet in height, large head, short neck, sanguine temperament, and of full habit. Epilepsy had existed for three or four years, the fits progressively becoming more frequent and severe. He had become partially idiotic. He had from fifteen to twenty fits during the forenoon of the day on which the operation was performed. The day after the operation he complained of difficulty in swallowing, and the left side became incompletely paralyzed. The paralysis continued, with difficulty of articulation and swallowing, till the next day, when he died in a comatose condition. The epileptic paroxysms did not recur after the operation.

The second operation occurred a few days after the first. The patient, a male, was forty years of age, of a full habit and sanguine temperament. Epilepsy had existed for seven years. For the last three years the paroxysms had recurred almost daily. The mind was much affected. He recovered from the operation satisfactorily, and had no return of the epilepsy for twenty-two days. At the end of that time he had a paroxysm on two successive days. Seventeen days after this a third paroxysm occurred, and about a month afterwards a fourth. These four paroxysms were all that had taken place up to the time of writing the report, a period of a little more than two months. The paroxysms after the operation differed from those which occurred previously as regards premonitions. Prior to the operation,

he had no warning of their approach; but after the operation, a sensation of dizziness preceded the attacks for several minutes, giving him time to provide against falling.

The patient declared that he felt better than at any time during the three years; some of his friends thought that there was a decided improvement in his general appearance and mental condition.

The report is made too recently after the operation to warrant any conclusion as to its permanent value in this instance.

[*North-Western Med. and Surg. Journal.*

A Large Uterine Polypus removed by the Curved Ecraseur with Double Action.

A woman fifty years of age, who had been suffering from frequent uterine hæmorrhage during the last two years, was admitted into the Samaritan Hospital ten days ago, under Dr. Savage's care. Many examinations had been made elsewhere previously by various surgeons; but a polypus, if suspected, until the day before her admission, was probably quite out of reach. A swelling could even now be scarcely made out by the finger introduced far into the os uteri. Sponge tents were introduced daily. On the third day the tumour became more distinct, and then rapidly distended through the dilated os into the vagina. On the fourth day it could be felt in size and shape like a large jargonel pear (its neck not much less than its body,) extending into the uterus to be attached somewhere towards its back part. On the fifth day the polypus was lain hold of by a pair of ring forceps, the loop chain of the écraseur being passed over the handle of the forceps, slipped up, and was drawn tight, precisely as the cord in the ordinary operation by ligature, and the tumour was brought away without pain or hæmorrhage. Dr. Savage observed that the unwieldly look of the instrument was suggestive of much pain and difficulty; but its curve fell into the hollow of the sacrum with the utmost facility, and its point as readily passed into the uterus as high as he thought necessary. As the chain is flexible only on one side, much careful manipulation was required before it could be got where he thought it ought to be. Before working the handle which tightened the chain, the single fore-finger readily ascertained that nothing improper was included. The handle was worked at half-minute intervals as soon as decided resistence showed that contraction had commenced. The tumour came away in six minutes. From first to last the patient said she felt no pain whatever. The hæmorrhage has not appeared. Dr. Savage said he had heard of two cases of polypus thus treated in this country, but

believed they had not been recorded. He had several times seen M. Chassaignac remove parts highly vascular with his écraseur without the least hæmorrhage, and thought as the plan he had adopted in this case was equally safe as the ligature, without any of its obvious annoyances, he would add his testimony to its value through the Medical Society. Dr. Savage strongly recommended an instrument with the double action, the finishing improvement of the inventor, M. Matthieu.—[*London Lancet.*

On the Functions of the Thyroid Body. By Dr. P. Martyn.

Dr. Peter Martyn has communicated to the Royal Society some very ingenious speculations as to the use of this remarkable body. He first called attention to the necessity of rigidity in all round instructions. This is accomplished, he thinks, by the thyroid gland, which, being pressed upon by the muscles, during the act of speaking, becomes gorged with blood, and presses upon the larynx, rendering it tense. Furthermore, he believes this so-called gland acts as a loader. In musical instruments, loaders are used to render the vibrations slower and longer, and the tone in consequence fuller, louder and deeper. They thus give to the voicing part of a small instrument the power and quality of a large one. The human organ of voice is only three inches long, and yet "has the same power as, and better quality of tone than, the instrument which more nearly approaches it—the French horn—which is nine feet, or the 'vox humana' pipe of a moderate-sized organ, which is from four to eight feet long. This economy of size in the human organ has always been wondered at, but never, that I know, explained." Finally, the author of the paper believes that by the varying shape, bulk, destiny and pressure of this body, it aids materially in producing the qualities of modulation and expression belonging to the human voice.—[*Amer. Jour. of Med. Science.*

Treatment of Intermittent Fever.

There is a means of treatment of fever and ague, which is by far too much neglected. It consists in applications of the cold shower-bath a little before fever sets in. Although we do not admit, as it might be concluded from a paper of M. L. Fleury, that every case will be cured by this mode of treatment, we think that the facts mentioned by this able physician are worthy of attention. He states that he has treated, during the last ten years, one hundred and fourteen patients, and that they all have been cured, *only* by cold shower baths, and that there has not been a single return of the disease. Forty-three were recent

cases, having existed from two days to three months; seventy-one were old and rebellious cases. In all these last cases there was an enlargement of the spleen, or of the liver, or both; there was anæmia or even a cachectic state.

One single shower-bath has often been enough to effect the cure. It has never been necessary to give more than five shower-baths. Not only is periodical fever cured by this means, but all kinds of periodical affections may also be cured in the same way.

When the periodical attacks are stopped, there are irregular ones, in most of the cases, as long as the engaged viscera have not been brought down to their normal volume. In these cases local *douches* have been applied twice a day, on the hepatic or splenic regions.—[*Comptes Rendus de l' Acad. des Sciences*, and *New York Journal of Medicine.*

Injection of Liquor-Ferri Sesquichlorati in Uterine Hæmorrhages.

Dr. Breslau's case of injection of liquor-ferri sesquichlorati shows the efficacy of this treatment in certain cases of excessive uterine hæmorrhage. A woman, 45 years old, had worn a pessary for a long time, which she had given up on account of pain and hemorrhages. Examined, there were found five grape-shaped polypi around the os uteri, with ulceration. These were removed by Siebold's scissors, and potassa fusa applied to the ulcerations. The hæmorrages remitted somewhat. The uterus was, however, entirely bent upon itself, and the menses returned in great excess. The cavity of the uterus was somewhat enlarged. The return of the menorrhagia reduced the patient to an extreme degree of anæmia. Ergot of rye failed to effect any contraction of uterus or arrest of flooding. Two possible conditions presented themselves to Dr. Breslau: 1st, The five polypi attached to the cervix favored the presumption that there existed a similar warty hypertrophy of the lining membrane of the uterus; 2d, There might be a destructive ulcerative process of a malignant character going on in the same structure. In the first case, the currette of Recamier seemed indicated, in order to scrape the uterine membrane clean from the presumed excrescences. In the second case, it seemed necessary to bring a caustic and styptic agent in direct contact with the diseased membrane. To answer this latter indication, he selected the liquor-ferri sesquichlorati of the Bavarian Pharmacopœia. Having first straightened the retroflected uterus by the sound, and inserted an elastic catheter as far as the fundus, he injected one ounce and a half of the liquor-ferri, diluted with an equal quantity of water. The injected fluid was retained in the uterine cavity for a minute and a half by the pressure of the fingers at

the os around the catheter. During the operation, the patient felt a dull labourlike pain which lasted for two hours. The hæmorrhage, which had hitherto been unintermitting, now suddenly stopped, and was not renewed. After some days, brown, crumbling clots were discharged, but no fluid blood. Seven months afterwards there had been no return of menorrhagia. The patient menstruated regularly every twenty-one to twenty-four days; and through internal administration of steel and quinine, recovered robust health.—[*British and Foreign Medico-Chirurgical Review. New Orleans Med. News and Gazette.*

Statistics of Coiling of the Funis. By Dr. WEIDEMANN.

Dr. Weidemann states that among 28,430 deliveries the funis has been found coiled around the child in 3,379 instances. In 3,230 of these it was coiled around the neck, and in 149 around other parts of the body. Of the 3,230 cases, 2,546 consisted in a simple coil, and in 684 there were severe coils. In relation to the causes of this occurrence, it is interesting to notice that of 1,788 cases occurring at the Marburg Midwifery Institution, the funis was in 80 (1:22.2) under 15 inches, and in 183 above 25 inches (1:9.71) in length; that in 54 (1.33) there were very little liquor amnii, and in 41 (1:43.6) there was very much; in 165 (1:10.8) the child was under 5 pounds weight, and in 28 (1:61.7) it was 8 pounds. Therefore, among the favoring causes of the occurrences may be mentioned a long funis, abundance of liquor amnii, and a small child.

Among 2,930 infants born at Marburg, 182 (1:16.09) were dead, 251 (1:12.41) were still-born. Of 725 born with coiled funis, 45 (1:16.11) were dead, and 72 (1:10.06) were still-born. Of the 45 dead-born, in 18 only could the death be referred to this alone, i. e., only 1:40.2 in the 725 examples of coiling. From an examination of the figures derived from the midwifery institutions at Dresden, Göttingen, Würsburg, Berlin, and Marburg, it results that of 13,720 new-born infants, 902 (1:15.21) were born dead; while in the 1,217 instances of coiling of the funis, 31 children were born dead, whose death could be attributed to that circumstance, giving a proportion of 1:39 to the coilings, and 1:19 to the number born dead.

Thus, as (1) the 16th child among new-born children in general, as well as among those in which coiling has taken place, is born dead; as (2) the 12th child among the new-born in general, and the 10th among those around whom the funis is coiled is born still-born; and as (3) in one child in 40 only can this coiling be regarded as really the cause of death, it is evident that this accident does not occupy a very prominent place.—[*Monatsch. für Geburtskunde*, and *Med. Times and Gaz.*

Case of Diabetes Traumaticus. Translated for the Charleston Med. Jour. and Review.

Dr. Herman Itzigsohn reports the following case in *Virchow's Archiv*, for April 1857: A Mechanic, aged thirty-eight years, unmarried, previously in good health, received a year ago, a blow from the blade of a hatchet on the top of the head, a little to the left of the median line. He immediately suffered from incontinence of urine; but he could void it copiously on making a strenuous effort. Gradually diabetes manifested itself. Inordinate thirst supervened, the patient drinking sixteen quarts of fluid daily, which naturally produced a corresponding flow of urine. He dieted himelf on bacon, which he craved more than any other kind of food. At this time yellow discoloration of the conjunctivæ announced disorder of the liver, which condition was further indicated by swelling and uneasiness in the hepatic region.

This case is in two respects worthy of notice: firstly, for its traumatic origin; secondly, for the tardy appearance of the liver affection. In accordance with Bernard's theory, it may be supposed that a splinter of bone was driven into the fourth ventricle, or that an extravasated clot occurred there; although it is not probable, as there was not the slightest appearance of the brain being injured, either by shaking of the head, or any other irregular movement; neither was there vertigo nor headache at any time. It remains yet to be proved whether diabetes is to be traced primarily to a diseased brain, and secondarily to the liver, or not. The expression of opinion is desirable on so important a question.

Condition of the Nerves in Degenerated Tissues. Translated for the Charleston Med. Jour and Review.

In Vischow's Archiv, Band XI., Heft 2, p. 200, we find the following summary of the researches of Fred. Marfels. The author examined the condition of the nervus vagus in four human subjects, the victims of pulmonary phthisis and marasmus. He ascertained that the fatty degeneration does not attack the nerves immediately; but that the metamorphosis begins in developement of cells, which in the nerve fibres itself should normally proceed. He describes the same as nucleus-holding cells of the size of the small colorless blood corpuscles, which lie in the midst of the fibres, for the most part without any intervening granular substance; and, strange to relate, he finds that neither potash, ether, nor iodine decompose them. Once when examining the ischratic nerve, he found these cells even inside

the axis cylinders, which observation corresponds with the discovery made in some of the lower animals of the existence of cells in the nerves, partly granulated and non-nucleated, and partly transparent, clear and nucleated, strung together in the central cord of the nerves. The author did not find nuclei in the sheath of the primitive nerve-fibres in man; but in animals he thinks he saw them, where the nerve-sheaths appear to be filled by these fibres. Twice he observed the escape of the nerve contents from the sheath, when at the same time he saw the above alluded to cells.

Calcareous Salts in the Treatment of Rickets.

Dr. W. Budd, of the Bristol Royal Infirmary, states (British Medical Journal, June, 1857, p. 514) that he has derived better results, in the treatment of rickets, from the compounds of lime, than from any other remedial means. In cases short of rickets, too, where children with large heads, tumid bellies, and pasty complexion, whose spines are too weak to support their bodies, who are slow in intellect, and backward in teething, and have reached the age of eighteen months or more, without showing any desire to take to their feet, the beneficial influence of calcareous compounds is equally manifest. In such cases, Dr. Budd gives five or ten grains of phosphate of lime, in chalk mixture, thrice daily, adding a simple chalybeate if anæmia is palpably present. At the end of a fortnight, the improvement of the patient is generally conspicuous. Dr. Budd believes that the deterioration in the teeth of the rising generation is due to the insufficient supply of the inorganic constituents of these organs in the food of children, and suggests that children in cities should be fed, in part, during dentition, on biscuits containing a proportion of salts of lime.—[*Virginia Med. Journal.*

On Lead Colic. By M. Briquet.

A very interesting communication has been made to the Académie de Médicine, by M. Briquet, physician of the Charité hospital. The object of the paper is the nature and treatment of lead colic. What is the seat of the violent pain which then exists? Is it the digestive canal—the muscles of the abdomen—the diaphragm? Is the spinal cord affected, as Laennec and Barbier admitted? Is the pain purely neuralgic, as maintained by Andral and Grisolle? M. Briquet affirms, from researches made on forty-four patients, that the pain is in the muscles of the abdomen, sometimes in one, sometimes in many. He says also, that there is in some cases a real hyperæsthesia of the skin

in the neighborhood of the painful muscles. In some patients, however, the reverse exists: the skin is anæsthetic. He affirms that constipation has no influence whatever on the abdominal pain. He proposes in another paper to relate cases to prove that the application of galvanism to the painful muscles usually takes away the pain at once. We can assert that it is perfectly true that the pain may disappear immediately in cases of lead colic, after one application of an electro-magnetic current.—[*Ibid.*

EDITORIAL AND MISCELLANEOUS.

Editorial.—On account of the space occupied this month by an unusual amount of original matter, and the space given to the minutes of the State Society, our Editorial matter must be deferred for the next month.

Minutes of the Annual Meeting of the State Medical Society.

Madison, April 14th, 1858.

The Society assembled at 10 o'clock, in the Town Hall, in Madison, and was called to order by the 1st Vice-President, Dr. H. F. Campbell, of Augusta.

The following regular members were present:—Drs. J. G. Westmoreland, M. H. Oliver, John W. Jones, T. C. H. Wilson, Thos. S. Powell, W. T. Hollingsworth, W. S. Meiere, Jos. P. Logan, A. Means, V. H. Taliaferro, G. L. McCleskey, Henry F. Campbell, Eben. Hillyer, J. N. Simmons, Juriah Harriss, E. E. Jones, De Saussure Ford, S. G. Anderson, Wm. Louis Jones.

The minutes of the last annual meeting, held in Augusta, April 8th, 1857, were read and approved.

The rules were suspended, and upon written application, the following gentlemen were duly elected members of the Society:

R. T. Pulliam, A. J. Shaffer, J. N. Coe, L. J. Green, A. M. Parker, Isham H. Ragan, J. H. Conaly, F. S. Colley, S. J. Saffold, L. T. P. Harwell, L. G. Anderson, J. M. Boring, R. J. Stewart, S. H. Dean, S. H. Smith, L. S. Means, A. M. Boyd, W. F. Westmoreland, H. W. Brown, B. M. Smith, H. J. Walker, Wm. H. Philpot, Wm. B. Crawford, Gasby Night.

The election of officers being next in order, a ballot was ordered, and the following gentlemen were elected for the ensuing year:

Dr. J. P. Logan, of Atlanta, President; Dr. H. J. Ogleby, of Madison,

1st Vice-President; Dr. John T. Banks, of Zebulon (Pike county), 2nd Vice-President; Dr. Eben Hillyer, of Rome, Treasurer and Secretary.

On motion, a committee of two were appointed to conduct the President elect, Dr. Joseph P. Logan, to the chair; which being done, he returned his thanks to the Society, in a few appropriate remarks, for the honor conferred upon him.

Dr. E. H. W. Hunter, of Louisville, was, by ballot, elected to deliver the Oration at the next annual meeting. Dr. G. L. McCleskey, of Madison, as his alternate.

The selection of delegates to the American Medical Association being next in order, a committee of five, consisting of the following gentlemen, were appointed to nominate them, and report at their earliest convenience:—Dr. Ford, Dr. Harriss, Dr. W. F. Westmoreland, Dr. Simmons and Dr. Boyd.

Society then adjourned until 2 o'clock P. M.

AFTERNOON SESSION.

Society called to order by the President.

Dr. Hillyer, by appointment, read an essay upon the Physiology of Menstruation.

The committee to appoint delegates to the American Medical Association, reported the names of the following gentlemen:—Juriah Harriss, of Savannah; W. T. Hollingsworth, of Morgan; F. S. Colley, of Walton; W. G. Bulloch, of Savannah; H. F. Campbell, of Augusta; H. M. Boyd, of Cave Spring; Eben. Hillyer, of Rome; B. M. Smith, of Atlanta; C. B. Nottingham, of Macon; R. Q. Dickinson, of Albany; E. M. Pendleton, of Sparta; James Green, of Macon; J. F. Banks, of Zebulon.

The essay of Dr. Meiere being called for, he responded in a very interesting article upon the use of Alcohol in Typhoid Fever.

Society adjourned till 7 o'clock P. M.

Society met, pursuant to adjournment.

Dr. W. F. Westmoreland moved, that the mode of appointing Essayists and subjects be changed. That each gentleman appointed be allowed to write upon any subject of his own selection.

Upon motion, Drs. Campbell, E. Jones Oliver, W. F. Westmoreland, and Dean, were appointed a committee to nominate Essayists for the next meeting.

The report of the late Treasurer, Dr. Nottingham, for the years 1856–1857, were received and adopted.

A ballot was ordered, to determine upon a point for the next annual meeting, which resulted in the selection of Atlanta.

Dr. J. G. Westmoreland moved, that two hundred copies of the Constitution, By-Laws, Roll of Members, &c., be ordered to be published in pamphlet form, for distribution among the members of the Society.

Dr. Meiere moved, as a substitute, that all the medical journals in the State be requested to publish the Constitution, &c., in their columns—which substitute was carried.

The Committee on Essays reported the names of the following gentlemen, as Essayists for the next annual session of the Society:

Dr. H. W. D. Ford, Dr. H. F. Campbell, Dr. Robert Campbell, Dr. Smith of Griffin, Dr. E. Hillyer, Dr. Stewart of Pike county, Dr. G. B. Night, Dr. S. H. Dean, Dr. W. F. Westmoreland, Dr. W. H. Doughty of Augusta, Dr. Juriah Harriss, Dr. J. G. Howard, Dr. R. D. Arnold, Dr. V. H. Taliaferro, Dr. Joseph A. Eve, Dr. A. M. Boyd, Dr. Joseph P. Logan, Dr. H. W. Brown, Dr. J. M. Green, Dr. T. B. Ford, Dr. G. L. McCleskey.

On motion of Dr. Means, it was passed, that the report of any interesting case, or other communication, would be gladly received from any gentleman by the Society.

The following report was received from Drs. Bulloch and Arnold, a committee appointed by the Savannah Medical College, to solicit the co-operation of the Society in procuring the legalization of dissections, for medical and surgical purposes, and the modification or repeal of the laws now in force against it:

To the President and Members of the Medical Society of the State of Georgia:

Gentlemen—We, the undersigned committee, have been appointed by the Faculty of the Savannah Medical College, and instructed to confer with you, asking your concurrence in a movement having for its object the passage of a law by the Legislature of Georgia, legalizing dissection for the purposes of medical and surgical study.

To effect this great object, we would most respectfully solicit the Society to unite with us in a petition to the Legislature, at their next session, to pass an Act rendering it lawful for the Professors and Teachers in Medical Colleges and Schools in this State, to receive for Anatomical study the unclaimed bodies of persons dying at public hospitals and other kindred institutions. Such a law is in force in other States.

Accompanying this, will be found a copy of the Statute enacted by the Legislative Assembly of the State of New York.

The New York law concedes, as you will observe, very little else than the single point of legalizing dissection. Even this may be of immense practical service, by ridding us of the annoyance to which we may be at any time exposed, whilst the possession of a dead body, even for scientific purposes, is, according to the existing law, equivalent to a crime to which evil disposed persons might at any time call public attention.

Is it not the bounden duty of the State to see that the Medical Profess-

ion of the land, who are the true missionaries to suffering humanity, lack nothing needful for their efficiency and usefulness, without the necessity of going out of the State to obtain this knowledge—not forgetting that it is this profession alone that can be brought to bear on the waste of human life.

The public demands that the medical institutions shall furnish it with good and accomplished physicians and surgeons, yet it has set its face against the only means of obtaining them. But at the present time, under its present prosperity and attainment, there is that advancement made in other branches of learning and science—there is that enlightened policy in legislation upon all matters of general interest and improvement, that we have a right now to expect and to ask for some measure, some means, whereby we can procure material for dissection in some legitimate manner, that we may be enabled to make that progress and advancement in our profession that will raise it to that rank and standard it so nobly bears in other sections of our land.

We wish to be relieved from this false and dangerous position that affixes upon us the stigma of felons, in the acquisition of anatomical knowledge, and all these difficulties and excessive annoyances under which we are laboring, and which we are now obliged to encounter and overcome, to make that progress and advancement in our profession that operates only to favor our more faithful discharge of duty. This is not for the exclusive advantage of the medical man: it seeks no other benefit than that which it wishes all others to enjoy: it is for the common good. Every intelligent man, whether professional or non-professional, cannot but admit that the interests of society imperatively demand the study of practical anatomy. Then why should not the State make a suitable arrangement by law. Is there any reason why we should stand in this matter behind New York, Massachusetts, Michigan, and many other states, in an enlightened policy. Considering the rights of the medical profession, in the just and proper estimate of its value, and in comparison with the privileges that are extended to it in other states, let there be removed from our Statute books those laws repressing the study of Science—laws that should exist only in darker ages—that now put a barrier in the way almost ruinous to the pursuit of anatomical investigation, and continually threatens and exposes us to a most disgraceful and ignominious punishment!

We would prefer securing the passage of a more liberal law than that of the New York Act, so that if our views on this subject accord, any petition your honorable body may think proper to make, calculated to facilitate the passage of a bill, through the Legislature, would meet our hearty concurrence.

WM. G. BULLOCH, M. D.
R. D. ARNOLD, M. D.

The following was passed, offered by Dr. Taliaferro, of Atlanta:

Resolved, That the thanks of this Society be tendered to Col. C. R. Hanleiter, editor of the National American, for his presence on this occasion, and for the interest he manifests in the elevation of Medical Science, by the exclusion from the columns of his paper, the advertisement of all

quack medicines, secret remedies and criminal drugs, which too frequently pollute the public press.

The following, passed, offered by Dr. Dean:

Resolved, That the thanks of this Society be tendered to the town authorities of Madison, for the use of their Hall—to the Trustees of the Presbyterian Church for the use of their Church building—to the Physicians and citizens, for their courtesy and attention to the members of this Society.

The following letter, to the Society, from Dr. Arnold, was presented and read by Dr. Harriss:

SAVANNAH, APRIL 11, 1858.

To the Officers and Members of the Med. Society of the State of Georgia:

Gentlemen—My engagements with Savannah Medical Journal have prevented, and will prevent me from fulfilling the appointment of the Society, in writing an article on the Pathology and Treatment of Yellow Fever. I think I can do the subject more justice, in carrying out the plan I have formed, of giving in successive numbers of the Journal a full history of our terrible epidemic of 1854, for which my notes taken at the time are ample.

I respectfully request to be discharged from the further consideration of the subject.

Respectfully yours,
R. D. ARNOLD.

The request of Dr. Arnold was granted.

On motion, the following was passed:

Resolved, That this Society do now adjourn, to reassemble in the city of Atlanta, on the second Wednesday of April, 1859.

EBEN. HILLYER, M. D.,
Secretary.

New Febrifuge. Azderach Bark.—Dr. W. R. Cornish, of the Bengal army, (*Indian Annals of Med. Science*, Oct. 1856,) states that the Margosa or Neem tree has long enjoyed a considerable reputation in India as a febrifuge, and that it belongs to the natural order Meliaceæ and genius "*Azadirachta*." It is probably the *Melia Azederach* of our Pharmacopœia, and which under the name of Pride of India is so extensively employed as a shade and ornamental tree in the Southern States. Here the bark is used as a vermifuge. Dr. C. describes the bark as being nearly white internally and purple externally. When chewed, in its recent state, its taste is at first sweetish, followed quickly by a powerful and lasting bitter. Dr. C. employed the bark during six months with nearly all the fever patients that came under his care, in the form of decoction, (the strength of which is not given,) from one to two wine-glassfuls being administered repeatedly before the accession of the paroxysm. Dr. Cornish considers that the active principal resides more especially in the light colored inner bark, the dark exterior being highly astringent, owing to a tannin analogous to that in catechu.—[*American Jour. of Pharmacy.*

Ampelopsis Quinquefolia, or Virginia Creeper.—The common Ampelopsis, or Virginia Creeper, so ornamental as a deciduous climbing plant in our woods and on many walls in this city, is recommended by Dr. J. McCall as a remedy in dropsy. The bark of the vine is the part employed, and it should be gathered late in the Autumn, when the berries are fully ripe and the leaves begin to turn red and fall. It should be dried in the shade and preserved carefully from moisture. The Ampelopsis is readily known by the quinate division of the leaf. Its creeping character and frequent occurrence on the same tree with Rhus radicans, or *poison vine*, should lead the collector to avoid substituting the latter, which has a three-lobed leaf.

In its physiological effects it appears to "stimulate absorption and the elimination of matter through all of the outlets of the system rather than to act on any particular secretion, though by some it is stated to be actively diuretic."

Dr. McC. esteems the Ampelopsis a valuable addition to the materia medica; it is not unpleasant to take, though in taste it is acrid and persistent. Its infusion and decoction are quite mucilaginous.—[*Memphis Jour. of Medicine.*

Cancer in a Woman aged Eighty Years. Soap and Lead Plaster in Schirrus.—The same day that we saw the foregoing cases, we observed a woman, eighty years of age, at the Cancer Hospital, with well-marked scirrhus of the left breast, which appeared about a year ago. Notwithstanding her great age, she had the blooming, healthy cheeks of a country girl of eighteen; her general health was perfect, and under the use of tonic remedies, and soap and-lead plaster spread on leather, with a little camphor, the cancer has diminished in size, and its progress is completely arrested for the present. This is by no means an exceptional case of the arrest of the progress of cancer at this hospital; for we have observed several in whom the disease has been kept stationary for years, with no other inconvenience than the presence of the tumour in the breast, and the knowledge on the part of the patient that it was still there. The soap-and-lead plaster is one of the principal agents in effecting this desirable object; the lead appears to possess some peculiar influence in the disease.—[*London Lancet.*

Powdered Chlorate of Potash as an Application to Ulcers, etc.—For some time past, at the Metropolitan Free Hospital, Mr. Hutchinson has employed the powdered chlorate of potash as an application to cachectic ulcers. In most cases it appears to exert a very beneficial influence, speedily inducing cicatrization; and it is very convenient of use. The cases in which it has best suited have been some of ulcers of the leg, open buboes, simple sores on the skin of the penis, and cracked nipples. In the latter it answers admirably. The salt should be powdered very fine and dusted into the sore with the finger. It produces sharp smarting for a short time, but the pain soon subdues. In most cases suitable for its use it is also desirable to prescribe its internal administration; but with a view to making the experiments more conclusive, in the cases upon which Mr. Hutchinson founded his opinion of its efficacy, no other treatment was adopted.—[*Ib.*

Ulcerated Larynx in Typhoid Fever, Producing General Emphysema.—It was thought to exemplify an occasional complication of typhoid fever. The case was one of a boy who lately died under Dr. Addison's care, at Guy's Hospital. About the twelfth day of his illness his neck was observed to be emphysematous, and in a few hours the face, arms, chest, &c., were in a like condition. This continued for ten days, when he died. Besides the usual affection of the ileum, there was found at the back part of the larynx a sloughing ulcer, which communicated with a space between the œsophagus and trachea. Through this line the air had penetrated into the mediastinum, and so to the general subcutaneous tissue of the body. Considering the rarity of emphysema from such a cause, the case might be thought to be unique or accidental, but (Dr. Wilkes believed) for various reasons, it was probably not so. In the first place, emphysema had been alluded to by various writers as an occasional occurrence in typhoid fever, though the cause was unknown; and secondly, a peculiar disease of the larynx had been described by various pathologists as a part of typhoid fever. In all probability, then, these two affections stood in the relation of effect and cause, and, therefore, although this was the first case of the kind he had witnessed, it afforded, in all likelihood, an explanation of an occurrence which rarely, though sometimes, happens in the course of typhoid fever.—[*Ib.*

A Venereal Badge.—M. Renaud states the following fact in a *feuilleton* of the *Gazette des Hôpitaux*:—In Servia, a woman who is found to be suffering from syphilis, can claim admission into an hospital, or has the privilege of being treated at home by any medical man she chooses to call in. When she is attended at her own residence, she is obliged to wear a necklace fastened in front with a seal, which must be broken before the necklace can be removed. The clandestine breaking of this seal is severely punished; and any one coming in contact with the woman thus marked, must plainly see in what state of health she is. It is to be regretted that like measures are not in force in other parts of the East, where prostitution is carried on without any control.—[*Ib.*

Case of Congenital Hypertrophy of the Tongue, and Amputation.—This case was reported by Dr. Morrogh, of New Brunswick, N. J., and occurred in a girl seven years old. At birth the hypertrophy was moderate, but it had increased more or less rapidly till reaching its present dimensions; the tongue was found protruding two inches outside the jaws. It measured two inches across the teeth, and was of a corresponding thickness. The papillæ of the protruded portion were enlarged, and the mucous membrane was thickened and indurated. On the under surface was a ragged, hard ulcer, produced by the pressure of the teeth. These were pressed forward considerably out of their natural position. The horizontal rami of the inferior maxilla were curved downwards, so that, when the molar teeth came in contact, a space of about one inch remained between the upper and lower incisors. By this the girl was enabled to masticate and swallow without difficulty. After the example of Dr. Harris, of Philadelphia, who, after endeavoring to amputate in a similar case by ligature, in 1829, performed the same operation, in 1835, by a double flap incision, checking the hemorrhage by ligature, Dr. Mor-

rough operated by removing a V shaped portion from the anterior middle part of the tongue, and ligating the ranine artery. Although copious hemorrhages followed, the patient went home well, on the sixth day after the operation.—[*Medical and Surgical Reporter.*

Transcendental Medicine; the Divine Unconscious.—It is not man who cures disease by means of his conscious spirit; but it is the divine Unconscious in man. The same power which fashions his organism, and daily recreates it in depths of mystery, is alone that which brings him back from sickness to health; and all that man's inventive mind has learnt in the healing art, for long centuries, limits himself to providing means to facilitate, to further, and in general, perhaps, to render possible, the task of this divine Unconscious. . . We cannot, by an immediate exercise of skill, cure the most trivial cut of the finger; the healing of even such a wound as this depends on a formation of new organic substance, of which formation the divine Unconscious is alone capable; at most we can either hinder or further this process, and in the accomplishment of the latter aim lies the essence of the surgical art.—[Dr. C. G. Carus: *Ueber Lebanmagnetismus. London Lancet.*

Slitting up the Lachrymal Canals.—The practice of slitting up the lachrymal canals and their orifices, originally introduced by Mr. Bowman, for the treatment of certain cases of epiphora, still continues to be extensively employed at the Moorfields Ophthalmic Hospital. It is adapted to all cases in which either the punctum is narrowed or displaced outwards, and these constitute a very numerous class. In almost all cases of long-continued tinea tarsi, in which, by degrees, the thickening of the lower lid has everted its edge, this simple procedure relieves the patient of his most troublesome symptom. Mr. Critchett has recently had made some grooved steel probes for this operation, which materially facilitate its performance. The silver ones formerly employed being necessarily very small, were unsteady as guides to the point of the knife. The steel ones, on the contrary, give it good support, and their groove is of great advantage in securing that it shall glide easily in the right direction. To secure smoothness of surface, and prevent rusting, the steel probes are gilt. A Beer's knife is the best, and with these instruments the operation is one of extreme ease.—[*Med. Times and Gazette.*

Rules Respecting the Treatment of Primary Syphilis.—It seems to be now pretty generally acknowledged, in hospital practice, that mercury should be given only in those cases in which the chancre presents marked induration, and that in all others secondary symptoms should be waited for before having recourse to specific treatment. In a large majority of sores not attended by induration, no constitutional phenomena will follow; and to discriminate between those likely to be so followed and the harmless class, is admitted to be impossible. There is, therefore, no alterative, except we would give mercury very often unnecessarily, but to wait in these cases until the real nature of the affection shall have been made manifest. In the non-indurated class, local stimulants, as sulphate of copper, lunar caustic, or the acid nitrate of mercury, are the old and still favorite remedies. If the chancre be seen within a week of its origin,

whether induration have already commenced or not, we believe most surgeons would destroy it freely either by nitric acid or some other caustic.
[*Med. Times and Gazette.*

New Antiperiodic.—Dr. R. S. Cauthorn, of Richmond, Va., gives an account of the root of Apocynum Cannabinum, as a powerful antiperiodic. This power of the root was discovered by an herb doctor, by the name of Ragland, and the medicine is called "Dr. Ragland's Root of Man" by the people who had used it. About six grains of the root is administered in the form of powder or pills, preceded in cases of ague by a dose of calomel. Dr. Cauthorn expresses much confidence in the virtue of the Apocynum Cannabinum, and he may be correct in his inferences; but as his own observations were only extended to six cases it may be well to get further information before admitting it to the rank claimed for it by Dr. Cauthorn, which can readily be effected, as the plant is found all over the Middle States.—[*Richmond Stethoscope.*

Corrosive Sublimate and Collodion as an Escharotic.—Dr. Macke uses a solution of a drachm of corrosive sublimate in an ounce of collodion as an eschrrotic to remove small exerescences, which it is desirable to get rid of without using the knife. It is applied by means of a camel's hair brush. When the inflammation is high, it may be abated with cold water applications without interfering with the action of the caustic, the eschar is then thrown off in from three to six days, with slight pain, and the author has not noticed absorption to take place during its contact.
[*Hay's Journal.*

Gelatinized Chlorform.—Dr. Massart (*Revue de Therapeutique*) gives the following process for making chloroform jelly for facilitating its use as a local anæsthetic, viz: Take equal parts of white of egg and chloroform, shake the mixture and let it stand for three hours. Or take one part of white of egg and four parts of chloroform, put them in a bottle, which is then plunged in a water bath of the temperature of from 120° to 140° Fahr., when gelatinization occurs in four minutes. This preparation is applied by rubbing the painful part, and its power of affording relief is said to be remarkable. Dr. Massart prefers the cold process. If allowed to remain long in contact with the skin, it produces incipient cauterization.—[*Boston Med. Journal.*

Foul Ulcers of the Legs.—A woman at St. Mary's Hospital, whose entire leg had been in a state of ulceration for years, with islands of skin here and there, has had it effectually healed up, by Mr. Coulson, by wrapping a piece of linen around it wet with a lotion of the sulphate of soda, and a bandage over all. Mr. Coulson thinks the bandaging and rest have proved as serviceable as anything else used.—[*Ibid.*

Yeast in Scarlet Fever.—Some years ago my attention was directed to the use of yeast in scarlet fever, by an article in your Journal from the pen of Dr. Smith, of Baltimore. I have given it this last winter in fifty-three cases, and all have recovered. These were all the cases in my

practice. Together with the yeast, inunction has been employed in two thirds of them.

I believe that the free use of yeast may prevent a bad type of the disease. It was given, at the outset, every two or three hours, in doses from a teaspoonful to a tablespoonful, and continued until desquamation.

[A. S. McClean. *Boston Med. and Surg. Journal.*

Poison Census.—The *Medical Times* states, that in the four years, from 1848 to 1851, the deaths by poisoning ranged from 444 to 447 each year. In the three subsequent years, 52, '53, and '54, the number of deaths by poisoning was 370, 409, and 398. This decrease is attributed by Dr. Farr, to a certain extent, to the effect of the Legislative restrictions from the "Sale of Arsenic Act."—[*Druggist's Circular.*

Edinburgh Celebrities from an American Point of View.—Dr. Simpson, a short thick man, with what General Massey calls "body of Bacchus and the head of Jove," really a very fine head, covered with long black curls, seamed with gray, a round Scotch face, high cheek-bones, penetrating mild eyes and curious prim mouth, deep sunk between the nose and chin, like that of Cicero. And there is no reason why it should not, for the doctor, too, is eloquent in his own sphere. He persuades nervous females into good health, and amuses all by his genial humour and stories. He is a bold experimenter, and has hit upon other things than chloroform. Many tales of his benevolence are told. The poor never apply to him in vain. Not a few of his own profession envy him, and assail his reputation for the love of novelties, etc.; while, on the other hand, the disciples of mesmerism and the water cure declare he could say something in their favor, if he had the courage and the good will.—Professor Syme, the first operator alive, is a clean made, gentlemanly man, with a finely formed, baldish head—a most concise, decided individual, sharp, curt, and unceremonious as his own knife, but always going direct to the heart of the matter, never wasting a drop of blood or a drop of ink, or a single word. He is not much addicted to giving drugs. He likes to see what he is about, and has no fancy for poisoning people at random with the preparation of chemistry.—A colleague of these two, and an opponent of the former in reference to homœopathy warfare in Scotland, a tall, compact, swarthy, bushy-haired man, dexterous at controversy, and capable of making a clear extempore statement, in a style that many lawyers would envy.—[*Scottish American Journal.*

Wendell Holmes on Controversy.—"If a fellow attacked my opinions in print would I reply? Not I. Do you think I don't understand what my friend, the professor, long ago called the hydrostatic paradox of controversy? Don't know what that means? Well, I'll tell you. You know that if you had a bent tube, one arm of which was the size of a pipe stem, and the other big enough to hold the ocean, water would stand at the same hight in one as in the other. Controversy equalizes fools and wise men in the same way—and the fools know it."

The *London Lancet* says "that Quacks bear the same relation to the Medical Profession, with that of the pediculus to the human being on whom it preys."

SOUTHERN

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ORIGINAL AND ECLECTIC.

ARTICLE XIV.

Observations on Malarial Fever. By JOSEPH JONES, A.M., M.D., Professor of Physics and Natural Theology in the University of Georgia, Athens; Professor of Chemistry and Pharmacy in the Medical College of Georgia, Augusta; formerly Professor of Medical Chemistry in the Medical College of Savannah.

PRELIMINARY OBSERVATIONS.

In the present state of Medical Science, the complete investigation of all the effects and phenomena of disease, is impossible.

Imperfections in our instruments; imperfections in our methods of analysis and the complicated nature of the phenomena, render physiological and pathological investigations difficult and uncertain.

The truth of this assertion may be established by an examination of the relations of animated beings to exterior inorganic bodies, to each other, and to the physical and chemical forces.

Organized animate bodies are composed of inorganic elements, and are governed by all the laws and phenomena of inorganic bodies, and are absolutely dependent, for their existence, upon inorganic bodies. They have, however, a new set of phenomena, dependent upon the vital force; and in animals we have another set of phenomena, dependent upon the existence of the nervous system and intellectual faculties; and in man we have another set of phenomena, dependent upon the combination of the intellectual with moral faculties.

Inorganic bodies, with their properties, form the necessary conditions for the existence of plants and animals, just as the properties of cohesion nnd gravitation form the essential conditions for the existence of the universe, in its present arrangement.

The phenomena of living beings, plants and animals, are therefore more complicated, and less general, than those of inorganic inanimate bodies.

Without entering into an enumeration of all the distinctions, between inorganic bodies and animated beings, it may be stated, that inorganic bodies are homogeneous in structure, and would remain forever at rest, and unchanged, physically and chemically, unless acted upon by extraneous forces; whilst, on the other hand, all vegetables from the simple cell, to the most highly developed, and all animals from the simple cell animalcule, to the complicated organism of man, have arisen from cells, and are composed of cells, variously developed, and grouped so as to form organs, and systems of organs, and apparatus, capable of accomplishing definite results, when moved by the proper chemical and physical forces.

The acts of development, nutrition, secretion, excretion and propagation are peculiar to plants and animals, and are directed by the vital force which is incorporated with, and presides over, every molecule of living organized matter, directing all its physical and chemical changes, so that amidst innumerable and unceasing changes the individuality of every organ, apparatus and animal is preserved. Physical and chemical forces exist independently of the vital force. The vital force, on the contrary, cannot exist and manifest its peculiar effects, without matter and the physical and chemical forces.

The germination and development of vegetables and animals, and the maintenance of their life actions, depend essentially upon the correlation of the vital, chemical and physical forces.

The study of complicated, highly developed plants, and animals, involves the consideration of their origin, development, structure, and relations to exterior bodies—involves the consideration of the chemical and physical properties of the elements, and combination of elements, entering into their constitution, and the relations of the constituents of their bodies to the surrounding medium—involves

the consideration of the relations of the vital, chemical and physical forces and intellectual and moral faculties—involves the consideration of the relations of animated bodies to the forces of the sun.

These phenomena may be studied with a greater degree of precision in the lowest orders of plants and animals, whose structures are simple.

As we rise in the scale of vegetable and animal existence the phenomena of life become more complex and less general, and the conditions of existence become more complicated and restricted. The truth of this proposition is illustrated in a forcible manner, by the relation of vegetable and animal existence, to the distribution of the forces of the sun upon the surface of our globe.

Thus, as a general rule, after the inorganic elements and moisture have been supplied, the luxuriance and perfection of plants depend upon the intensity of the forces of the sun. *The more complicated and perfect the vegetable structures, the closer is their dependence upon the proper supply and balance of the physical forces.* The converse of this proposition is also true.

The truth of this proposition is established by a reference to the distribution of plants upon the surface of our globe, and upon mountains which rise to a great height in tropical countries.

Whilst, in equinoctial and tropical countries, where a sufficient supply of moisture combines with the influence of heat and light, vegetation appears in all its magnitude and glory; on the other hand, in polar regions and upon the summits of lofty mountains, all the more complicated forms of vegetable existence disappear, and lichens and microscopic plants take the place of the majestic forests and impenetrable jungle.

In the tropics, the lowest orders of plants are comparatively rare, whilst in the polar regions and upon the summits of mountains they form almost the entire vegetation. The plants which first form upon barren rocks and lava streams, and coral islands, are those of the most simple organization. The simply organized lichens covering the bald-granite rocks are familiar to every resident of a primitive region.

Along the sides of Etna, Ischia, Vesuvius, and other volcanoes, lava streams are seen stretching in all directions, which have flowed down like rivers. These lava streams are of different ages, and many of them were formed within the memory of

man. An investigation of these lava streams affords an opportunity of determining the gradual distribution of vegetables. Some are still naked—others have only a few plants, scattered here and there, in hollows and crevices, and in others the decaying plants are forming a soil.

According to the observations of Professor J. F. Schouw,(1) the plants which first settle upon the naked lava, and form a soil for the more complex, are especially those lower and simply organized plants called lichens. Certain succulent and fleshy plants, as the Indian fig (Opuntia vulgaris), which are nourished chiefly by the carbonic acid and aqueous vapor of the air absorbed by the stem and leaves, are also amongst the earliest inhabitants of the lava streams. Geology also teaches that the lower orders of plants appeared first upon our globe.

As the luxuriance and perfection of plants depend upon the temperature of the surrounding medium and the intensity of the forces of the sun, so also the perfection of the nervous system; and of all the organs and apparatus, and the activity and intelligence of animals, correspond, in a great measure, to the rapidity of the physical and chemical changes going on in the molecules of their bodies, and to the relations of the physical and chemical and vital forces, and to the temperature which they are able to maintain, regardless of that of the surrounding medium.

As the chemical changes become feeble, and the temperature of animals descends and becomes dependent upon that of the surrounding medium, they become more simple in their organization and mode of life, the conditions of their existence become less restricted, and they resemble closely the simple forms of vegetables, and in the twilight of existence, we can scarcely distinguish between the lowest forms of plants and animals.

If we examine the relations of the physical and chemical agents to the animal kingdom, we will find that the most simply constructed animals, many of which are devoid of a nervous system and special organs of sense, as the infusoria, are, as in the case of the simply organized plants, the most widely distributed over the face of our globe, and are at the same time far less dependent for their existence upon the temperature of the surrounding medium.

(1) Schouw's Earth Plants and Man.—BOHN'S *Scientific Library.*

Infusoria occur in immense numbers in every situation: in stagnant pools, in marshes, in mud of rivers, in peat earth, twenty feet below the surface; in the structures and fluids of living animals and vegetables, in putrifying organic matter, in the bed and waters of the ocean, in snow, in ice, and in boiling springs. Sir John Ross, in the year 1840, picked up some brash ice, of a brown yellow color, in the Arctic regions, not far from Mount Erebus, which was supposed to contain alluminous matter, ejected in fine ashes from the volcano. Specimens were brought home in sealed glass vessels, and forwarded to M. Ehrenberg. This microscopist found the coloring matter to consist of myriads of infusoria, almost the whole of which reachad Berlin in 1844, in a living state.

Here we see that these microscopical animals, after having been frozen and thawed out, lived without food for four years.

Certain species of these animalcules have been found living and propagating in boiling springs, and some of them have been observed to recover, after drying in vacuo along with chloride of calcium and sulphuric acid for twenty-eight days, and after exposure to a heat of 248°.(2)

The infusorial animals were created at an early geologic period, and a large number of the fossil species which compose the Polirschiefer and semi-opal of Bilin, are found at the present time living and propagating in the seas and oceans. *The infusoria form a chain connecting the organic life of distant ages of the earth, and demonstrating, conclusively that the distribution of animals, and the power to survive physical changes, depends upon their development.*

The simpler the structures, the feebler the vital, nervous and physical forces, the less complicated the conditions of existence.

The gelatinous medusæ (Gelly fishes) occur in such vast numbers in the cold Greenland sea, that they impart an olive-green color to the sea, rendering the water dark and opaque in comparison with the ordinary cerulean hue.

(2) See experiments of Doyére, in Mém sur les Tardigrades, et sur leur propriete de revenir a'la vie, 1842, pp. 119, 129, 131, 133. Also, Ehrenberg's Die Infusionsthierchen, als vollkomme Organismem, 1838.

(3) See Remarks on the real occurrence of Fossil Infusoria, and their extensive diffusion, by Prof. Ehrenberg, J. C. Poggendorffs Annalen der Physik and Chimie, vol. xxxviii., No. 5. Taylor's Scientific Memoirs, vol. 1, 1837, pp. 400 to 413; also, vol. 3, 1843, pp. 219–376.

The space allotted to this article will not allow us to enter more fully into the consideration of the distribution and relation to the physical forces, of the other members of the invertebrate kingdom.

These facts are sufficient to illustrate for this class of animals, this law, which has an immediate bearing upon our investigations.

Cold-blooded vertebrate animals, although more highly organised than invertebrate animals, still show remarkable powers of enduring extremes of heat and cold, without death. Fish may be frozen and again thawed out without a destruction of life. *The rapidity with which the absence of heat is attended with loss of sensibility and death, is directly proportional to the development and perfection of vertebrate animals.*

The relations, between the physical, chemical and vital forces, are strikingly exhibited in certain cold and warm-blooded vertebrated animals, which become torpid or hybernate during the winter season. In this state, all the chemical and physical actions are of the most sluggish character. The heart scarcely beats, the frequency and force of the action of the heart, and flow of the circulation, is greatly diminished, if not entirely stopped. The amount of carbonic acid thrown off from the lungs is greatly diminished, and all the chemical and physical changes of the elements of the tissues, and fluids and organs of these animals, are retarded.

If the temperature of a warm-blooded animal be reduced in like manner, all its physical, chemical, and vital actions will be depressed, and the active animal will be reduced to the condition of a sluggish cold-blooded animal, and death will rapidly ensue. There is, however, this great difference between the cold and warm-blooded animal—*the conditions of the existence of the latter are far more restricted than those of the former.*

The chemical changes of the cold-blooded animal are slow, and it can exist without food for weeks and months, whilst a few days starvation is fatal to the warm-blooded animal.

These facts demonstrate conclusively that the conditions and phenomena of life are complicated and restricted, in exact accordance with the development and perfection of the organs and tissues of animals, and the rapidity of the chemical and physical changes of the molecules of their bodies.

To understand the bearing, complication and imperfections of pathological investigations, we must take a general view of the most important phenomena and relations of man. Those who would attempt to investigate pathological and physiological phenomena, must first form clear conceptions of the phenomena to be investigated, and the perfection of the methods and instruments capable of being employed in these investigations.

Man is composed of inorganic elements, prepared and grouped into definite compounds in the vegetable kingdom, by the combined actions of the vital force, and the physical and chemical forces of the sun.

Man is governed by all the laws and phenomena of inorganic bodies, and is absolutely dependent for his existence upon the existence and mutual relations of inorganic bodies.

As all the motions, in the various forms of inorganic matter upon the surface of our globe, are excited by the forces of the sun, in like manner, all the forces of man, are dependent through vegetables, upon the forces of the sun. As there can be no creation of force in inorganic matter, independent of the Deity, so man, although an active being, cannot create any force, however feeble, any more than he can create or annihilate a particle of matter. His forces are the resultants of the chemical changes of those substances, which, in the vegetable kingdom, have been elevated into a state of force by the action of the sun.

The mechanical power which man, or any animal, is able to exercise, is exactly proportional to the amount of food consumed, assimilated and chemically altered in the production of the nervous and muscular forces. The power of a well-constructed steam-engine, is exactly proportional to the amount of fuel consumed, or, in other words, is exactly proportional to the amount of chemical action. *The amount of chemical action is exactly proportional to the amount of force derived from the sun, and expended in grouping the molecules of matter, in such a manner, as to be capable of chemical change and development of physical force.* The power of falling water which turns the water-wheel, and accomplishes various mechanical operations, is the resultant of the combined actions of gravity, and the heat of the sun. *The laws of physics apply as well to the human machine in action, as to the changes in the exterior universe.*

Man is the most perfect engine that has ever been constructed for the same amount of chemical combinations and decompositions, he produces a much greater amount of work than the most perfect engine.

Man has other phenomena besides the physical and chemical. He is a machine and something more. The generation, development, constitution, and structure of man is similar to that of all vegetables and animals.

Man, in common with vegetables and animals, is endowed with vital force, and like them is dependent for his existence and action upon exterior bodies, and the physical and chemical forces.

Man, in common with all animals, and in contra-distinction to vegetables, possesses a nervous system, endowed with special sensibilities.

The nervous system is the apparatus which relates man and animals to the exterior world, and also relates the various organs and apparatus to each other, in such a manner, that amidst an innumerable number of complex actions, unity and harmony result.

Man possesses not only a vital force, an organism composed of inorganic elements, perfect in its mechanical structure, and material arrangements of its parts, and a nervous system endowed with special sensibilities; but he also possesses an intelligence endowed with special faculties, capable of receiving impressions from the motions of exterior bodies, and of exciting the forces by which it is surrounded, and a moral nature which relates him in a peculiar manner to the universe.

The possession of moral and intellectual faculties combined, distinguishes man from every other form of matter, and every other being upon our globe.

The immaterial, intellectual, moral soul of man has no direct communication with the exterior world. The mind receives impressions, transmits its volitions, and excites the mechanical structures of the engine by which it is environed, through the nervous system which is endowed with special sensibility. The impressions of exterior bodies, upon the nervous system, is always attended by a change of the structure of the nervous system.

All the organs of sense are excited by changes of matter. The excitement of the nervous system and transmission of the

impressions are attended by a change of matter. Every act of the mind which excites the nervous sytem, is attended by a change of the chemical elements of the nervous system. Every action excited in the mechanical apparatus by the nervous system is commenced and sustained by a physical and chemical change of the elements of the muscular system, and nutritive fluids. *The intellectual and moral faculties of man work only through and by the physical and chemical forces; they are distinct from matter, they excite matter to action, they direct and control the actions of matter.*

By his intellectual moral nature, man overcomes all the barriers and obstacles of nature, not by a suspension or alteration of her immutable laws, but by peculiar applications of those forces and laws.

The material portion of man is composed of the same elements as the exterior world. It is governed by all the astronomical and chemical and physical laws of inorganic bodies, and comprehends within itself all organic nature. The size of his organs, the strength of his muscles and bones, and the vigor of his forces, have all been constructed with exact reference to the force of gravity, the size of our globe, and its relations with the sun, and all other worlds in the universe. Man revolves with the earth and planets around the sun, and the whole system moves forward in space at the annual rate of one hundred and fifty millions of miles, around a distant unknown centre. Like plants and animals, his existence is dependent upon the length of the day, and of the year, which are dependent upon the adjustments of the solar system. His existence, through plants, is absolutely dependent upon the intensity of the forces of the sun. If the distance from the earth to the sun be increased or diminished, the structure of many inorganic bodies would be changed, the conditions of existence would be correspondingly altered, and all vegetable and animal life would be destroyed.

The molecules composing the structures of man, like the immense masses of matter which are scattered through space, are in a state of unceasing activity. As each star has its own appropriate motions, its own peculiar offices to perform, so each molecule of matter, each organ and tissue in the body of man, has its own peculiar motion, its appropriate office to perform.

As the universe is governed by a Being, infinite in wisdom and in power, who constructed, controls and directs matter and

all its chemical and physical actions, so the material part of man, this little world, is governed by an intelligence distinct from matter, which works by and through matter, and moulds exterior material nature, after the ideal creations of its own interior immaterial nature. *Man then is a type of the universe. It is evident, therefore, that to understand the phenomena of man in health and disease, and his relations to the universe, we must comprehend the phenomena and mutual relations of all animate and inanimate bodies, terrestrial and celestial*

If the phenomena of man in health be thus complicated, how much more complicated must they be in disease, where the complex constitution of his solids and fluids may be altered in many ways, and the relations between the vital, chemical and physical forces deranged.

Any one of the normal constituents of his body may be deranged, and occupy different relations to each one of the other constituents. As these constituents are numerous, the resulting derangements may be correspondingly numerous. The forms of this class of diseases may be as numerous as the different positions which the elements may be made to assume towards each other.

Any one of the elements of his body may be in excess or deficiency, and the diseases may be as numerous as the elements themselves, and at the same time totally different from the diseases arising from an alteration in the relative positions of the elements.

Foreign morbific agents may be introduced into the fluids and solids, which will excite abnormal changes in the elements of the solids and fluids. The number of diseases of this class will correspond to the number of distinct morbific agents. *Combinations of these morbific agents may produce still more numerous and complicated diseases.*

The Creator has associated the vital force with a definite constitution of matter. Whatever interferes with this constitution, interferes with the action of the vital force. Whatever interferes with the vital force, necessarily disturbs its relations with the physical and chemical forces. If the balance of the forces, their correlation be disturbed, the chemical actions between the elements may not only be deranged in kind, but also in degree, and the generation of the physical forces which work the machinery, and the manifestation of the intellectual and moral phenomena will be correspondingly altered.

One or two, or all of these causes of disease may act at once, or successively, and thus render the results still more complex.

The relative intensity of the effects of disease will depend upon the perfection of the constitution and relations of the organs, tissues and apparatus, and upon the power and correlation of the vital, chemical and physical forces. As no two human countenances are exactly alike, as no two temperaments are exactly alike, as the chemical actions and forces of different individuals vary, so also will the effects of disease vary.

The nervous system is the last and most perfect work of the vital force, and thus the index of the power of the vital force.

The nervous system not only forms the medium of communication between the intellectual faculties and the exterior world, but it also forms the medium of communication between the organs and apparatus, solids and fluids of the economy. That the nervous force is nothing more than a higher development of the vital force, is evident, from the fact that plants, and the simply constructed animals, which are devoid of a nervous system, are capable of carrying on the offices of generation, development, digestion, assimilation, nutrition, secretion, excretion, and preserving a definite form amidst unceasing changes. Many of the simply organised animals, although without a nervous system, still possess sensation and voluntary motion. The nervous system appears only when the parts of the machinery are complicated, and need a special means of communication.

The development and perfection of the nervous system corresponds exactly to the development, perfection and complication of the organs and apparatus.

This fact is true of the animal kingdom in its successive degrees of development, and also of the successive stages of the development of the solids and fluids of each individual highly organized animal. Physical and chemical actions take place in a similar manner in all animals, simple or complex; they differ only in intensity. The higher the animal, the more complicated its parts, the more rapid the chemical changes and consequent generation of the forces, and the greater is the necessity for some special apparatus endowed with a high vitality, which will bring all these complex organs and actions into relation. Unless the actions of different organs can be telegraphed (so to speak) to each other, confusion in a complicated organism will necessarily result. Thus, if the amount of blood circulating through any

organ, and the chemical actions, are too great, how can they be regulated without some medium of communication with the other parts of the system, and some means of regulating the chemical and physical actions? To the nervous system is delegated this property of regulating the actions of the organs and apparatus, and thus regulating the amount of oxygen and blood supplied to the organs and tissues and apparatus.

The blood supplying the nutritive elements of the tissues and organs, and the materials for the secretions and development of the forces, and oxygen being the active agent in all the chemical actions of the bodies, it is evident that whatever disturbs the constitution of the nervous system, necessarily disturbs the functions of the apparatus and organs and produces corresponding alterations in their secretions and excretions. As the integrity of the nervous system depends upon the integrity of the blood, in like manner, whatever alters the constitution of that fluid, will produce aberrated action in the nervous system, and in turn, this disturbance may extend itself indefinitely.

Disease then, whether arising in the organs, or in the blood, or originally in the nervous system, will always be attended by aberrated nervous action. The most prominent symptoms of disease therefore will be connected with the nervous system. In all our investigations into the causes and effects of disease, we should always remember, that the origin of the disease may be connected with derangements in the constituents of the blood and all the organs, independent altogether of the nervous system. Thus in malarial fever, the poison, whatever it be, is rapidly destructive of the colored blood corpuscles, and destroys the ferment in the blood, which converts the animal starch into grape sugar, it also produces profound alterations in the structure of the spleen and the blood which it contains. Now, these effects, in the beginning, may take place entirely independent of any alteration in the nervous system.

The nervous system will be secondarily affected, and its action seriously disturbed, and this disturbance will give rise to a distinct set of phenomena, but it is evident that the cause and origin of the disease lies back of this disturbance.

In the investigation of the origin, causes, effects and treatment of disease, the constitution of all the fluids and solids of all the organs and

tissues, of the blood, secretions and excretions, should be carefully ascertained and compared with the standard of health. All the chemical and physical changes, and the relations of the vital and physical forces, should be ascertained.

The temperature, the amount of chemical change, the alterations in every organ and tissue should be determined. How can these things be accomplished when physiologists and pathologists are not acquainted with many chemical changes going on in the body:—when they dispute about the origin and offices of some of the most important constituents; and know little about the origin and offices of the extractive matters of the blood and urine: when they are ignorant of the offices of the spleen, supra-renal capsules, thymus and thyroid glands: when they cannot even explain the mode of origin, propagation and death of the solitary gland cells of the blood, which elaborate the materials for the nervous and muscular systems: when they possess no absolutely accurate method of analyzing the blood, or of determining the amount of the products thrown off from the lungs and skin? It is important that we should know and acknowledge our ignorance and weakness.

At the very outstep, I acknowledge that these physiological and pathological investigations, which I hope to present from time to time, are imperfect in many respects. They could not be otherwise in the present state of science, and especially when I had to act as physician and surgeon to one hundred patients, and at the same time, conduct the investigations.

I have determined to present them in their imperfect condition, because they were instiuted with a desire to discover the truth, and with the hope that I might acquire during their prosecution, sufficient knowledge to point out to the young members of the profession, the difficulties and methods of conducting such investigations; and because they were conducted at a sacrifice of much time, money, and health.

> "Art is long and time is fleeting,
> And our hearts though stout and brave,
> Still like muffled drums are beating
> Funeral marches to the grave."

I think and hope that they will at least demonstrate the impossibility of the successful investigation, of all the phenomena of disease, by a single individual, and lead to unity and concert of action amongst investigators.

In pathological investigations, we need in this country, above all things, an organised corps, who would make a division of labor. We should have a separate investigator for the careful examination of each one of the following subjects:

The analysis of the urine (1); *blood* (2); *determination of animal temperature* (3); *functions of skin and lungs* (4); *record of symptoms and treatment* (5); *meteorologic, geologic, and topographical investigations, and record of mortuary statistics* (6); *examinations chemically and microscopically of the structure and alterations in the nervous system after death* (7); *and of the liver and bile* (8); *of the alimentary canal with its secretions and excretions* (9); *and of the kidneys and the other organs* (10).

If a corps of intelligent, generous-minded observers would act with zeal and unity, the results for medicine would be of the most momentous character. It would, in time, rank amongst the exact sciences, and the physician would become a true prophet; and instead of the frequent disagreement between theory and practice, and between rival schools, we would have harmony; instead of distrust in the public, and even in the minds of physicians, themselves, we would have confidence.

These investigations were conducted in the Savannah Marine Hospital and Poor-house, and two hundred and fifty patients suffering with the different forms of malarial fever, came under my observation.

I would here acknowledge my obligations to my friend and former colleague, Dr. Richard D. Arnold, Professor of the Theory and Practice of Medicine in the Savannah Medical College, for his kindness in resigning into my hands, the charge of the Savannah Marine Hospital and Poor-house.

I would also, return my thanks to Theodore McFarland, M. D., and Mr. Robert Myers, student of medicine, in the Savannah Medical College, for valuable assistance during post-mortem examinations.

The medical topography of Savannah will be considered more fully hereafter. The following brief statement will give a general idea of the medical topography.

Savannah is situated on the Savannah river, eighteen miles from its mouth, upon a sandy plain, elevated forty-two feet above half tide. On the north, this plain is terminated abruptly by the Savannah river, a turbid stream, pursuing its sluggish

course through the low-grounds and rice-fields of South Carolina and Georgia. On the east and west, the city is flanked by extensive tide-swamps, formerly under wet culture, at the present time under dry culture. The sandy plain extends for several miles beyond the city. Savannah, therefore, is surrounded on all sides, except the south, by malarious districts.

SECTION I.—INTERMITTENT FEVER.

CASE I.—Seaman, entered Savannah Marine Hospital September 29th, 1857; native of New York; age 22; height 5 feet 4 inches; weight 140 lbs.; black hair, and florid complexion; handsome, intelligent countenance; sanguine nervous temperament. Has never been sick before. Has been in Savannah two weeks, and this is his first visit. Slept on board the ship the first week, and the last week slept at the "Sailor's Home," on the bay. Says that he was taken sick four days ago, with chill, vomiting, and pains in all his bones, and has had a chill every day since, commencing regularly at 12 o'clock M. Had a chill this day, commencing a few minutes after 12 o'clock M. Says that he took three blue pills and castor oil, night before last. This medicine operated twice.

7 o'clock P. M., Sept. 29th. Has fever, and complains of pains in his joints. Slight tenderness upon pressure of epigastrium; tongue clean, moist, red at tip and edges; papillæ enlarged and of a bright red color. Reaction of saliva decidedly acid.

Pulse 120. Respiration 32, full, thoracic.

Temperature of Atmosphere, ...	79°F.
" " Hand, ...	103°33′
" under Tongue, ...	106°

℞. Calomel, grs. xij.; sulphate of quinia, grs. vij. Mix, and administer immediately, and follow with castor oil in four hours. As soon as fever remits, give sulphate of quinia, grs. v., every three hours, up to grs. xxv. During fever, give soda powders (pulveres effervescents tartarizati). Diet, gruel and flaxseed tea.

Sept. 30th, 1 o'clock P. M. Medicine operated freely, and says that he is much better, but complains of weakness. Tongue presents the same appearance; skin cool and relaxed; face not so much flushed.

Pulse 70, regular. Respiration 22, regular and gentle.

Temperature of Atmosphere	68°F.
" " Hand, ...	92°
" under Tongue, ...	99°5′

Amount of urine passed the last 18 hours, grains 23,220.

Amount of urine excreted each hour, grains 1,290.

Calculated amount of urine for 24 hours, grains 30,952.

Reaction of urine decidedly acid.

This is characteristic of the urine of fever; the acidity is in proportion to the severity of the attack. The acidity is more intense in remittent than in intermittent fever, and still more intense in congestive fever, than in intermittent and remittent fever.

Color of urine, light orange. Urine passed last evening and night up to 11 P. M., specific gravity 1011, color a shade higher than that passed this morning. Specific gravity of urine passed from 11 o'clock P. M., last night, up to 1 o'clock P. M., this day, 1008.

Uric acid in whole amount of urine passed in 18 hour, (grs. 23,220).	grs. 1·0035
" " " calculated " " " " " 24 " (grs. 30,952).	" 1·3376
Uric acid in 1000 parts of the night urine, (sp. gr. 1,011)	0·0494
" " " " " " " morning " (sp. gr. 1,008)	0·0396

Up to this time, 1 o'clock P. M., has taken 20 grains of sulphate of quinia, and the action of this medicine may be connected with the marked diminution of the uric acid.

The urine was set aside and examined under the microscope after successive intervals. After standing 48 hours, there was a small light yellow deposit, which, under the microscope, was found to consist of small vegetable cells of several shapes—globular, elliptical, and acicular. When viewed under a low magnifying power, these cells resembled a collection of globular and acicular cystals of the urates of ammonia.

A careful examination under the microscope, with the appropriate chemical re-agents, demonstrated that they contained no uric acid or inorganic salts, but were of vegetable origin. The size of the cells were many times less than those of the torula cerevisiæ.

5 o'clock P. M. Half an hour ago was taken with chill and vomiting. Now the chill appears to be subsiding, the shaking and contraction of the muscles is diminishing. Extremities cool, whilst the head and trunk are hot and pungent to the hand.

Pulse 108. Respiration 30, labored, thoracic.

Temperature of Atmosphere, ...	74°F.
" " Hand, ...	91°
" under Tongue, ...	105°5′

Instead of a reduction of temperature in the trunk and head during chill, there is a decided elevation. The sense of cold arises from a want of circulation in the capillaries of the extremities.

The patient had taken 20 grains of the sulphate of quinia before the chill came on. This did not arrest, but delayed the chill for several hours.

℞. Spirits of Mindererus f ʒ iss. in sweetened water.

8½ o'clock P. M. Says that he is more comfortable.

Pulse 108. Respiration 32, not so thoracic and labored as during the chill, but still thoracic and labored.

Temperature of Atmosphere, ... 73°F.
" " Hand, ... 103.5°
" under Tongue, ... 105°

Slight tenderness upon pressure of epigastrium. Reaction of saliva decidedly acid. Tongue red at tip and edges; papillæ enlarged and red.

Amount of urine passed from 1 P.M., (8 hours), grs. 5,100.

Calculated amount for 24 hours, grs. 15,300.

Amount of uric acid in 5,100 grs. of urine, grs. 2.
" " " " "15,300 " " " " 6.

Uric acid in 1000 parts of urine, 0·3921.

Specific gravity of this specimen of urine excreted during the chill, 1020. Color normal. Reaction decidedly acid.

The uric acid has increased in amount during the chill and commencement of the fever: when compared with the former specimens of urine, it is, however, still below the standard of health. If the diminution of the amount of uric acid be due to the action of the sulphate of quinia, it shows that this action of this remedy pointed out by Ranke,[3] is not necessarily attended with a disappearance of the chill.

Amount of urine excreted hourly during last 24 hours, grains 1,180.

Amount of urine passed in the last 24 hours, ending Sept. 30th, 8 o'clock P. M.. grs. 28,320.

Amount of uric acid in grs. 28,320 of urine, grs. 3.0035.

℞. As soon as fever remits, give sulphate of quinia, grs. v., every three hours, up to grs. xx. Diet, gruel.

October 1st, 11 o'clock A.M. Says that he is better, and has no pain, except a slight headache, and was in a perspiration all night. Fever intermitted at 12 P. M.

Skin cool. Pulse 76. Respiration 23.

Temperature of Atmosphere, ... 70°F.
" " Hand, ... 95°
" under Tongue, ... 98°5′

Has taken 15 grs. of sulphate of quinia since the intermission of the fever.

℞. Continue sulphate of quinia up to grains xxv.

Diet, mutton soup, gruel and tea.

Reaction of saliva slightly acid. Reaction of urine decidedly acid. Urine clear, no deposit, and a shade higher colored than normal.

Specific gravity of the urine passed during the first half of the night, 1010.

Specific gravity of the urine passed subsequent to 12 M., last night, 1012.

(3) Medical Times and Gazette, May 30, 1857, p. 540.

Amount of urine passed during the last 15 hours, grs. 19,209.
Calculated amount of urine for 24 hours, grs. 30,734.
Amount of urine excreted each hour, grs. 1280.

October 2nd, 11 o'clock, A.M.—Says that he feels badly; had no chill yesterday evening, but the fever came on at 7 o'clock, P. M. Suffered with headache, and was restless, without sleep during the night. Skin soft and moist; slight tenderness upon pressure of epigastrium; tongue redder and dryer than yesterday, but still soft and moist; reaction of saliva, acid; face flushed.

Pulse 84. Respiration 32.

Temperature of Atmosphere, ... 74° F.
" " Hand, ... 100. 5'
" under Tongue, ... 102

The fever is subsiding. Urine of a deep orange color: higher colored than yesterday; turbid, with slight deposit. Reaction, alkaline, after standing 20 hours; it was acid when first voided. The deposit is due to the precipitation of the alkaline and earthy phosphates, in combination with the ammonia, generated during the decomposition of the urea.

As far as my experience extends, the rapid change from the acid to alkaline reaction of the urine is, in malarial fever, a sign of convalescence.

Every specimen of urine excreted during the active stages of malarial fever, which I have examined, gave a decided acid reaction, and the intensity of this reaction corresponded to the intensity of the disease. As the disease declined, the reaction of the urine became less acid, and the tendency to fermentation, and the development of an alkaline reaction increased.

Amount of urine passed during the last 24 hours, grs. 15,810.
" of uric acid in 15,810 grs. of urine, grs. 9.300.
Specific gravity, 1020.
Uric acid in 1000 parts of urine, 0.588.
Amount of urine excreted hourly, grs. 658.

Has not had a movement of his bowels since the operation of the calomel.

℞ Calomel grs. vi; sulphate of quinia grs. vi; castor oil in four hours. After the action of the calomel, commence with sulphate of quinia, grs. v, every three hours up to grs. xv.

October 3rd, 11 o'clock, A.M.—Says that he feels much better, and has "no pain, except a slight soreness in his bones." Tongue clean, moist, and only a shade redder than normal. Papillæ still enlarged, red and distinct. Reaction of saliva, acid. No pain upon pressure of epigastrium. The fever intermitted yesterday afternoon, and he has had no return.

Pulse 62. Respiration 20.

Temperature of Atmosphere, ... 74° F.
" " Hand, ... 96°
" under Tongue, ... 98°5'

Color of urine a shade lighter than normal, and in 22 hours after it was voided, let fall a copious light yellow deposit of triple phosphate and urate of soda. 20 hours after it was voided, its reaction was decidedly alkaline. It was acid when first voided, but much less acid than during fever. The urea has also undergone decomposition much more rapidly, because it has become decidedly alkaline in the same time in which the febrile urine remained decidedly acid. When first passed, the urine was clear, devoid of sediment. The deposit in the urine which had stood over night, was due in a great measure to the precipitation of the phosphates, by their union with the ammonia generated during the decomposition of the urea.

Amount of urine passed during the last 24 hours, grs. 18,180. Specific gravity 1010.

Amount of urine excreted hourly, grs. 757·5.

Uric acid in grs. 18,180, of urine, grs. 8·100. Uric acid in 1000 parts of urine, 0·445.

℞. Officinal infusion of Virginia snake-root, f℥xviii.; sulph. of quinia, grs. xv. Mix. Tablespoonful every three hours. Diet, mutton soup and boiled rice.

October 4th, 11 o'clock A. M. Much better. Has had no return of chill and fever. Tongue clean and papillæ not so distinct and red. Bowels opened twice.

Pulse 60. Respiration 20.

Temperature of Atmosphere, ...	72°5′ F.
" " Hand, ...	96°
" under Tongue, ...	99°5′

Reaction of urine after 18 hours strongly alkaline. It emits ammonia. When a rod dipped in hydrochloric acid is held over the urine, it emits heavy fumes of hydrochlorate of ammonia. Heavy light yellow deposit.

Amount of urine passed during the last 24 hours, grs. 20,520.
" " " " hourly, grs. 855.

Specific gravity, 1018.

℞. Officinal infusion of quassia and soda. Continue snake-root tea.

October 5th, 11 o'clock A. M. Has had no return of fever, and complains of nothing except weakness. Tongue clean, moist and soft; papillæ still redder and more enlarged than normal; skin soft and cool; reaction of saliva acid.

Pulse 62. Respiration 21.

Temperature of Atmosphere, ...	70°F.
" " Hand, ...	96°
" under Tongue, ...	99°33′

Urine normal in color. Specific gravity 1015. Amount of urine excreted hourly, grs. 1268.

Amount of urine passed in last 24 hours, grs. 30,450.

" " Uric acid in grs. 30,450 of urine, grs. 15,000.

Uric acid in 1000 parts of urine, 0·492.

After standing 12 hours, alkaline reaction and a light yellow deposit.

This patient continued to improve, and left the hospital on the following day. He returned to the same locality on the bay, and was exposed to the damp north-east winds blowing over the river and low grounds of South Carolina.

He returned to the hospital October 18th, with an attack of chill and fever, of the same type as the one we have just described. The chill came on every day.

The annexed Table will present a condensed view of the phenomena observed.

In this case there was a close relation between the state of the skin, pulse, respiration and temperature of extremities and trunk.

A rapid full pulse, hurried thoracic respiration, and dry skin, was attended with a corresponding elevation of temperature.

If the functions of the organs and apparatus be properly performed, a full and rapid vigorous circulation and respiration must be attended by the rapid absorption of oxygen, and exhalation of carbonic acid gas, and correspondingly rapid chemical changes, and development of heat.

A slow pulse and respiration, and cool moist skin, was accompanied with a low degree of heat.

During the cold stage (chill) there was a rapid feeble pulse, full thoracic rapid respiration, and a hot trunk and cold extremities.

During the rapid thoracic respiration, oxygen is supplied in abundance, and enters into the blood, which is confined during the cold stage, almost entirely to the trunk and large organs. The temperature of the trunk is correspondingly elevated. This elevation of temperature does not extend to the extremities, because the circulation of the blood in the blood-vessels and capillaries is feeble. The surface of the extremities look bluish during the cold stage, because the supply of oxygen being withheld in great measure, the change from the venous to arterial hue does not take place.

We hope to demonstrate hereafter, by numerous careful observations, that the determination of the relations of the circulation, respiration, and temperature or chemical changes in malarial fever, is of the greatest importance, in enabling the practitioner of medicine to understand the nature and treatment of the different forms of this disease, and predict with a great degree of certainty its course and termination. *Whenever, as in congestive fever, there is a want of corresponaence between the circulation, respiration and chemical changes, the patient is always in danger. A patient with a rapid feeble pulse, and rapid thoracic respiration and*

TABLE 1.....CASE 1.

Month	Day of Month	Hour of Day	Medicine	State of Skin	Pulse	Respiration	Temperature of Atmosphere	Temperature of Hand	Temperature under Tongue	Urine excreted in 24 hours. GRAINS.	Uric Acid excreted in 24 hours. GRAINS.	Urine excreted hourly. GRAINS.	Urine excreted in GRAINS.	Hours	Specific Gravity	Uric Acid. GRAINS.	Calculated amount of Urine excreted in 24 hours. GRAINS.	Calculated amount of Uric Acid excreted in 24 hrs. GRAINS.
Sept	29	7 P.M.	Calomel grs. xij, sulp. qui. gr. vij, castor oil in 4 hrs. Sulph. quinia grs. xxv.	Hot, dry	120	32	79° F.	103°33′	106°	.....	.....	....	.....	.....	.....	.....	.....	.....
"	30	1 P.M.		Cool relaxed.	70	22	68°	92°	99°5′	.....	.....	1290	23220	18	1009.5	1.0035	30952	1.3376
"	30	5 P.M.	Spirits of Mindererus.	Chill.	108	30	74°	91°	105°5′	.....	.....	.....	.....	.....	.....	.....	.....	.....
"	30	8 P.M.	Sulph. of quinia grs. xx.	Hot, dry.	108	32	73°	103°5′	105°	28320	3.0035	1180	5100	8	1020	2.000	15300	6.000
Oct.	1	11 A.M.	Sulph. of quinia grs. v.	Cool, moist.	76	23	70°	95°	98°5′	24309	.....	1014	19209	15	1011	.....	30734	.....
"	2	11 A.M.	Calomel grs. vj, sulp. qui. grs. vi, castor oil in 4 hrs. Sulph. of quinia grs. xv.	Warm and Moist.	84	32	74°	100°5′	102°	15810	9.300	658	15810	24	1020	9.300	.....	.....
"	3	11 A.M.	Snake-root tea and sulph. of quinia.	Cool and Moist.	62	20	74°	96°	98°5′	18180	8.100	757	18180	24	1010	8.100	.....	.....
"	4	11 A.M.	Quassia and soda.	Normal.	60	20	72°5′	96°	99°5′	20520	.....	855	20520	24	1018	.....	.....	.....
"	5	11 A.M.	" "	Normal.	62	21	70°	96°	99°3′	30450	15.000	1268	30450	24	1015	15.000	.....	.....

low temperature (sluggish chemical changes), is always in great danger. A full rapid pulse, and rapid thoracic respiration, and correspondingly high temperature, are always favorable symptoms, provided there be no complication, as congestion of the brain. The severity of malarial fever is by no means proportional to the height of the fever (animal temperature). As a general rule, the higher the fever (temperature), the more readily does the attack yield to treatment, and the less serious the effects. High temperature signifies active chemical changes, and an effort on the part of nature to break up and consume the poison, and a power of resistance.

It is the want of a high temperature which is the most dangerous symptom in malarial fever.

In this case, the amount of urine excreted corresponded with its specific gravity, or degree of concentration. Considering the situation and diet of the patient, the amount of urine did not differ greatly from the standard of health.

The urine is affected by so many varied external and internal conditions, that the amount excreted exhibits great fluctuations even in health.

No two observers agree with reference to the amount excreted in definite periods. Thus, Lecanu, from examinations of the urine of 16 individuals, living upon mixed food, estimated that the amount of urine discharged in 24 hours, ranged from 8085 grains to 34,973 grains.

Becquerel found that the mean daily quantity passed by four men, was 19,511 grains, and that by four women, was 21,130 grains.

Lehmann, from experiments instituted upon himself, estimated the quantity discharged daily, at from 13,829 grains to 22,299 grains.

According to the valuable experiments of Dr. William A. Hammond, instituted upon himself, the amount of urine excreted under a mixed diet, ranged from 19,684 grains to 22,756 grains, with a mean of 20,898 grains; under a diet of albumen, from 12,325 to 21,592, with a mean of 17,738 grains; under a diet of starch, from 14,339 to 23,352, with a mean of 18,427 grains; and under a diet of gum, from 20,516 to 23,721 grains, with a mean of 21,538 grains.

The only accurate method of determining whether or not the urine be increased or diminished, is, to refer it to the standard of health, in the individual examined. In hospital practice this is, in the majory of cases, impossible, and we are compelled to be content with approximate results.

In this case, during fever and under the action of sulphate of quinia, the uric acid was greatly diminished, and on the other hand, when the fever declined, and the action of the sulphate of quinia ceased, the amount of uric acid increased beyond the normal standard.

From the microscopical and chemical examination of several hundred specimens of urine excreted during the different forms of malarial fever, I found it, as a general rule, to be true, that in the mode of treatment which I adopted, the uric acid appears in much larger quantities in the urine of convalescence, than in that excreted during the fever, even when the sulphate of quinia had been withheld, or sparingly administered. The majority of specimens of urine excreted during fever, which were set aside and examined, under the microscope, at successive intervals, gave no deposits of the crystals or salts of uric acid, whilst specimens of the urine of convalescence very soon gave evidence of the presence of uric acid, by letting fall deposits of urate of soda and ammonia.

These facts explain the nature of the so-called critical discharges of malarial fever. The urine excreted during fever is generally deficient in uric acid and the earthy salts, whilst its acidity is increased, and it will remain for a great length of time without undergoing decomposition.

The urine of convalescence, on the other hand, is rich in uric acid and the earthy and alkaline salts, and readily undergoes decomposition. The deposit of the urates of soda and ammonia, and the precipitation of the triple phosphate, by the ammonia generated during decomposition of the urea, form the so-called critical discharges.

As a general rule, the urine excreted during the hot stage of intermittent fever, is poorer in uric acid than the urine of remittent fever, and I have known cases in which, during fever, the uric acid disappeared almost entirely.

In several cases of congestive fever, the urine contained only traces of uric acid, and in one case, which terminated fatally, the disappearance of the uric acid was attended with the disappearance of the urea.

Dr. Ranke (4) *states in his article upon the physiological action of sulphate of quinia, that according to all observers, there is in ague an increase of uric acid. My observations do not correspond with this assertion, if it is intended to apply to the active stages of intermittent, remittent and congestive fevers. The fact that uric acid increases during convalescence from malarial fever, demonstrates conclusively that the diminution of the amount of uric acid by sulphate of quinia is an attending circumstance, and not necessarily one of the beneficial, remedial modes of the action of this medicine.*

CASE II.—Englishman: entered the Savannah Marine Hospital Oct. 9th, 1857; age 27. Has been in America thirteen years. Height 5 feet 10 inches; weight 145 lbs.; muscular sys-

(4) Medical Times and Gazette, May 30, 1858, p. 537.

tem well developed; sanguine temperament. Occupation, steward on ship. Has been in Savannah three weeks.

Says that he was taken yesterday at 12 o'clock M., with cold feelings and headache. The chilly feelings lasted four hours, and were succeeded by fever, which continued until 4 o'clock A.M. this morning. Two and a half hours after the subsidence of the fever (8½ o'clock A.M.), he shook violently. This chill was followed by fever.

Now, 8 o'clock P.M., fever is subsiding.

Pulse 98, full but soft.

Temperature of Atmosphere, ... 72°F.
" " Hand, ... 102°5′
" under Tongue, ... 103

Tongue moist; skin in a profuse perspiration.

Says that he took, last evening, a dose of salts and cream of tartar, which operated twice this morning.

℞. When fever goes off, give sulphate of quinia, grs. v., every three hours, up to grs. xx.

October 10th, 12 o'clock M. There was a complete intermission of the fever about 2 o'clock A.M. this morning. At this time the sulphate of quinia was commenced, and he has taken grs. xv.

Amount of urine passed the last 16 hours, grs. 6,144.
" " " " hourly, grs. 321·5
Calculated amount of urine for 24 hours, grs. 9,216.

ANALYSIS I.	In grs. 6,144 of Urine (16 hrs.)	In grs. 9,216, calculated for 24 hrs.	In 1000 parts of urine.
Urea, ...	226·980	340·470	36·943
Uric Acid, ...	0·600	0·900	0·097
Fixed Saline Constituents,	40·200	60·100	6·542

Specific gravity of urine 1024—clear, no deposit, light red color. Reaction decidedly acid.

Microscopical examination of urine.

After Standing 12 hours, no deposit.
" " 36 " a very slight, light yellow deposit.

After standing 60 hours, the surface was covered with a pellicle, which under a magnifying power, of 210 diameters, was found to consist of small oval cells, about the size of the human blood corpuscle. There were also other elongated elliptical cells, the short diameters of which did not differ from those of the globular cells. Many of the elongated cells had a vibratory motion. The deposit at the bottom consisted of these globular elliptical acicular cells, and a few crystals of triple phosphate.

That these cells were organized bodies, was demonstrated by

the action of chemical re-agents under the microscope. Not a trace of uric acid was found in the pellicle and deposit. The bottle containing the urine had been kept closely stopped.

12½ o'clock, P.M.—A chill is just coming on. The thermometer, placed in his hand, indicated 91½° F. Simultaneously with the increase of the chill, it commenced to descend, and in 15 minutes stood at 87½°.

In 15 minutes his hand lost 4° F. He feels very cold, but does not shake. The extremities feel cold, whilst the surface of the head and trunk feel hot and pungent. When the bulb of the thermometer was simply placed between the skin and flannel shirt, and gently pressed against the surface of the chest, it commenced to rise rapidly and in a few moments indicated 103° F.

When placed in the arm-pit, it rose rapidly to 107° F.

Pulse 100; not so full as during fever, but small and threaded.

Respiration 26, full thoracic.

Temperature of Atmosphere, ...	68°5′ F.
" " Hand, ...	87°5′
" in Axilla, ...	107

Tongue pointed, but moist, and not much redder than usual. Skin dry, with a purplish mottled appearance, as if the circulation in the capillaries was retarded. Says that he has "dull pains wandering around his loins up to his chest." Complains of great thirst. His stomach is so irritable that I could not ascertain the temperature under his tongue. I made seven unsuccessful attempts. At every trial the contact of the bulb of the thermometer, with the base of the tongue, excited violent retching and vomiting. I applied a sinapism over the region of the spinal column, 18 inches in length, and 3 inches in breadth, also, one over the epigastrium, and administered brandy and snake-root tea, f ℥ ij. The brandy and snake-root tea were vomited up in a few moments. In half an hour after their application, the mustards aroused the capillary circulation in the extremities.

His surface does not present the mottled appearance; the heat has in a great measure returned to his extremities, the cold sensations have disappeared, and "he feels warm all over." The temperature of his hand is now 99°. In half an hour, the temperature of his extremities has risen 11°5′. The temperature under the arm pit is still 107°.

The temperature of the hand does not correspond fully with that of the trunk, and reaction is not yet fully established.

Has just passed urine. Clear, limpid, of a light straw color. Reaction acid. Specific gravity 1003. Amount of urine voided, grains 7021.

ANALYSIS II.	7021 grains of Urine contained,	1000 parts of Urine contained,
Urea, ...	39·551	5·650
Uric Acid, ...	0·420	0·059
Fixed Saline Constituents,	9·800	1·395

Nitrate of urea remarkably silky and white.

Microscopical Examination.—The urine was poured into a closely stopped bottle, and set aside for 60 hours. At the end of this time the surface had a pellicle, and there was a small, light yellow deposit.

The pellicle consisted entirely of the globular, elliptical and vibrating cells, observed in the former specimen. The deposit also consisted of these cells, and a few, beautifully formed, prysmatic crystals of triple phosphate.

The fact, that the bottle was kept closely stopped, does not prove that the germs of these cells originated in the urine, for the bottle, in which the urine was first deposited, remained open during the voiding of the bladder, and the germs of these vegetable bodies were, without doubt, then received from the atmosphere.

This specimen of urine is interesting, because it was passed at the close of a chill, and was probably excreted by the kidneys, during the existence of the cold stage. It was much lighter in color than that passed during fever: in fact, it resembled the urine of hysterical women, in its light color and low specific gravity. *The urea and uric acid were diminished, whilst the fixed saline constituents were relatively increased.*

If the diminution of the uric acid was due to the action of the 15 *grains of sulphate of quinia, which he took this morning, then the fact is demonstrated that the diminution of the amount of uric acid by the sulphate of quinia, has nothing to do with the cure of intermittent fever.*

℞. During fever, give soda powders. As soon as fever remits, give sulphate of quinia, grs. v., every three hours, up to grs. xxx. Do not wait for the complete intermission of the fever. Diet, gruel and flaxseed tea.

7 o'clock P. M. The fever is abating, and his skin is in a slight moisture. The circulation is fuller and more regular, and the temperature more equally distributed.

Temperature of Atmosphere, ... 67°F.
" " Hand, ... 102

Amount of urine passed since 12½ P. M., (6½ hours,) grs. 5,075; high colored, resembling new madeira wine. Reaction decidedly acid.

Specific gravity 1015.

Nitrate of urea white, silvery.

Amount of urine excreted hourly, during last 6½ hours, grs. 780.

Calculated amount of urine for 24 hours, grs. 20,300.

Actual amount of urine excreted during the last 24 hours, grs. 18,240.

Amount of urine excreted hourly during the last 24 hours, grs. 760.

ANALYSIS III.	5075 grs. of Urine, passed in 6 1-2 hrs. contained grains.	20,300 grs. calculated amount of Urine for 24 hrs. contain'd grs.	1000 pts. of Urine, contained grs.	18,240 grs of Urine, passed during last 24 hrs. cont'd grs.
Urea, . . .	99·425	397·700	19·586	365·956
Uric Acid, .	0·250	1·000	0·049	1·270
Fixed Saline Constituents.	28·500	114·000	5·615	78·500

Microscopical examination of the last specimen of urine excreted during the last 6½ hours, up to 7 o'clock P. M.

After standing 60 hours a slight deposit fell, consisting of the vegetable cells, previously described, and prismatic crystals of triple phosphate.

Chemical reagents failed to give any evidence of the presence of uric acid in this deposit. His fever still continues. This specimen of urine therefore was excreted during fever. The patient has taken no sulphate of quinia since 11 o'clock A. M., this morning.

It is important to note, that, in this case, the uric acid is diminished, both in the cold and hot stages.

October 11th, 10½ o'clock, A.M.—Says that he is much better. There was a complete intermission of the fever this morning, at 5 o'clock, A.M. The subsidence of the febrile excitement was attended with a profuse perspiration, which continued up to 8 o'clock, A.M. At the present time his pulse is 88, and respiration 22. Tongue moist and soft; skin relaxed and soft; bowels were moved this morning.

Has taken 20 grains of sulphate of quinia since the intermission of the fever.

℞ Sulphate of quinia, grains v. ℞ Snake-root tea f℥xviij, sulphate of quinia grains xv: mix. One tablespoonful every four hours. Half diet: beef soup, rice and tea.

Amount of urine passed during the last 15½ hours, grs. 9144.

Specific gravity, 1016.

Amount of urine passed hourly during the last 15½ hours, grs. 590.

Calculated amount of urine for 24 hours, grs. 14630.

ANALYSIS IV.	9144 grains Urine excreted during last 15½ hours, contained, grs.	14620 grains Urine calculated for 24 hours, contained, grains,	1000 parts Urine contained
Urea, ...	157·140	251·424	17·185
Uric Acid, ...	3·150	5·040	0·344
Fixed Saline Constituents,	40·500	64·800	4·429

Chemical and microscopical examination of the urine passed during the last 15½ hours. Specific gravity 1016. Color, deep orange inclining to red, with a heavy, light-yellow deposit. Reaction alkaline. It has changed rapidly from acid to alkaline since it was voided. *This is characteristic of the urine excreted during convalescence from intermittent fever. During the active stages of malarial fever, the urine is always decidedly acid, and retains this reaction for many hours, and in severe cases, for several days, even in the heat of summer. When the fever intermits and the skin is moist and relaxed, and the patient is convalescent, the urine then excreted, rapidly undergoes decomposition, and in a few hours the reaction changes from acid to alkaline.* I believe this to be one of the most certain signs of convalescence in malarial fever.

The deposit in this specimen of urine was found, under the microscope, to consist of well formed, prismatic crystals of triple phosphate, and globular acicular crystals of urate of soda, and the globular and elliptical cells previously described. When the deposit was treated with hydrochloric and acetic acids, under the microscope, an abundant crop of crystals of uric acid appeared. This is the first specimen of urine in which the deposits have contained uric acid.

The chemical analysis of the urine also shows that the uric acid is more abundant than in the urine of the hot and cold stages, notwithstanding that the patient was under the influence of 20 *grains of sulphate of quinia.*

October 12th, 11 o'clock, A. M.—Continues to improve. Missed the chill, but had a slight fever in the evening.

Pulse 84. Respiration 20. Countenance, complexion, skin, and temperature, normal.

℞ Quassia and soda. Continue snake-root tea: full diet.

The urine through mistake was not preserved for examination.

7½ o'clock, P. M.—Pulse 92; skin moist and cool.

Amount of urine passed during the last 9 hours, grs. 15120.

Specific gravity 1008. Orange color.

Amount of urine passed during each hour, grs. 1680.

Calculated amount of urine for 24 hours, grs. 40219.

October 13th, 10 o'clock, A. M.—Says that he is quite well. Had no fever last night, and rested well. Tongue and skin normal in appearance; reaction of saliva slightly acid; during the height of the fever, it was decidedly acid.

Respiration 16. Pulse 68.

Temperature of Atmosphere, ... 78°F.
" " Hand, ... 98
" under Tongue, ... 99

Amount of urine excreted during last 14½ hours, grs. 13662.

Specific gravity, 1012.

Amount of urine excreted hourly, grs. 942.

Calculated amount of urine for 24 hours, grs. 21859.

Amount of urine excreted hourly during the last 24 hours, grs. 1199.

Actual amount of urine excreted during last 24 hours, grs. 28782.

ANALYSIS V.	13662 grs. of Urine excreted in 14½ hours, contain- grains,	21859 grs. of Urine calculated for 24 hours, contained grains.	100 parts of Urine contained,
Urea, ...	101·850	162·960	7·188
Uric Acid, ...	2·025	3·240	0·148
Fixed Saline Constituents,	29·700	47·520	2·173

Reaction of the urine alkaline, in 12 hours; color normal; light yellow deposit. Under the microscope, this deposit consisted of a few prismatic crystals of triple phosphate, globular crystals of urate of soda, and vegetable cells.

October 15th.—Dressed up and walking in the hospital yard.

Pulse 64. Respiration 16. Reaction of saliva, slightly alkaline.

Amount of urine passed during the last 24 hours, grs. 16320.

Color normal; no deposit in 18 hours. Specific gravity 1020.

Reaction acid. Urine excreted hourly, grs. 680.

ANALYSIS VI.	Grains 16320 of Urine excreted in 24 hours, contained, grains,	1000 parts of Urine contained,
Urea, ...	488·880	29·818
Uric Acid, ...	9·600	0·588
Fixed Saline Constituents,	115.200	7·058

The patient had no return of fever, and was discharged the next day.

The following table will present a condensed view of the results obtained.

TABLE 2......................CASE II.

Month	Day of Month	Hour of Day	Medicine	State of Skin	Pulse	Respiration	Temperature of Atmosphere	Temperature of hand	Temperature under Tongue	Amount of Urine excreted in 24 hours (grains)	Urea excreted in 24 hrs. (grains)	Uric Acid excreted in 24 hours (grains)	Fixed Saline Constituents in 24 hours (grains)	Urine excreted in (grains)	Hours	Specific Gravity	Urea (grains)	Uric Acid (grains)	Fixed Saline Constituents (grains)	Urine excreted hourly (grains)	Calculated am't of Urine excreted in 24 hours (grains)	Urea calculated for 24 hours (grains)	Uric Acid calculated for 24 hours (grains)	Fixed Saline Constituents calculated for 24 hours (grains)
Oct.	9	8 P.M.	Sulph. of Quinia, grs. xx.	Warm and Moist.	98	..	72° F.	102°5'	103°	.....	.....	....	....	.....	...	....	....	.....	.....	....	.....	....	.....	.....
	10	12 M.	....	....	...	..	.....	......	....	.....	.....	....	....	6144	16	1024	226.	0.6	40.2	321	9216	340.	0.9	60.1
	10	12½ P.M.	Spts. Mindererus & Sinap'ms.	Chill......	100	26	68°5'	87°5'	107°	.....	.....	....	....	7021	½	1003	39.	0.42	9.8	....	.....	.....	.....	.....
	10	1 P.M.	....	Hot..........	100	26	69°	99°	107°	.....	.....	....	....	.....	...	....	....	.....	.....	....	.....	......	.....	.....
	10	7 P.M.	Sulph. of Quinia, grs. xx.	....	...	..	67°	102°	....	18290	365.9	1.27	78.5	5075	6½	1015	99.4	0.25	28.5	760	20300	397.7	1.C0	114.00
	11	10 P.M.	Snakeroot tea	Cool, moist...	88	22	.....	......	....	.....	.....	....	....	9144	15½	1016	157.	3.15	40.5	590	14630	251.4	5.04	64.80
	12	11 A.M.	Quassia & soda	Cool, moist...	84	20	.....	......	....	.....	.....	....	....	15120	9	1008	.....	.....	.....	1680	40219	.....	.....	.....
	13	10 A.M.	....	Normal......	68	16	78°	98°	99°	28782	.....	....	....	13662	14½	1012	101.8	2.025	29.7	942	21859	162.9	3.24	47.52
	15	......	....	Normal......	64	16	.....	......	....	16320	488.8	9.60	115.2	16320	24	1020	488.	9.600	115.2	680	.....	.....	.....	.....

The most striking phenomena in this case were those manifested during the cold stage. The temperature of the extremities was 19½ degrees below that of the trunk. The temperature of the trunk was elevated 8 degrees above, while the temperature of the extremities was depressed 10½ degrees below the normal standard.

Similar phenomena have been manifested by every case of intermittent fever which I have examined during the cold stage.

The phenomena of the cold stage will be illustrated by the following cases, which were carefully examined, just as they occurred in the hospital, without any selection.

CASE III.—Seaman: aged 55, height 5 feet 4 inches, small, spare man. Has been in the hospital for several months, suffering with an affection of the eyes.

This case has originated in the hospital.

Chill came on one hour ago: he is still shaking violently, and his lips and hands look blue. Pulse 100. Respiration 36 to 50, varies with each quarter of a minute; irregular, thoracic, labored.

Temperature of Atmosphere, ...	71°5′ F.
" " Hand, ...	92°
" under Tongue, ...	104°

CASE IV.—Seaman: aged 38, height 5 feet 8 inches, light hair, blue eyes, sallow complexion. Looks as if his liver was out of order. Says that he "has had chills off and on from the 16th of July to the present time, October 12th." His first attack of intermittent fever was contracted in the swamps of the Peedee River, S. C. Tongue clean and pale; lips pale, anæmic. This patient presents the true malarial hue, and his blood is deficient in colored corpuscles. In the present attack of intermittent fever, he has a chill every day.

October 12th.—This morning had a chill, followed by hot fever. During the febrile excitement, his pulse was 108 and his respiration 32 to the minute. As soon as the fever remitted, xx grs. of sulphate of quinia were administered. The sulphate of quinia delayed the chill; it did not appear at the regular hour on the 13th inst., but came on at 4 o'clock, P.M., on the 14th inst.

I commenced the examination about 15 minutes after the commencement of the chill. Lips and fingers pale, and of a bluish color; extremities cold, whilst the trunk is hot to the touch. Patient is shaking all over.

Pulse 92, feeble. Respiration 32, thoracic, labored.

Temperature of Atmosphere, ...	77° 5′ F.
" " Hand, ...	91
" under Tongue, ...	103

A small amount of urine was excreted at the close of the cold stage, and commencement of the general elevation of temperature, (equalization of the actions of the general and capillary circulation,) which had a normal color. Specific gravity 1023, and decided acid reaction, and under analysis exhibited a large increase of uric acid.

ANALYSIS VIII.—1000 parts of urine contained Urea, 21·825—Uric acid, 1·467—Fixed saline constituents, 7·436.

This specimen of urine is in striking contrast with that excreted, under precisely similar circumstances, in Case ii. During the sweating stage the reaction of his skin was neutral. As a general rule, I have found it to be acid in the various forms of malarial fever. Reaction of saliva, as usual, acid.

October 15th. Complete intermission of fever.

Pulse 80, fuller. Respiration 20, regular.

Temperature of Atmosphere, ...	71° 5′ F.
" " Hand, ...	96
" under Tongue, ...	98

CASE V.—Frenchman, aged 45: brown hair and eyes; height 5 feet 7 inches; weight 130 lbs. Thin, spare man. Had an attack of intermittent fever, commencing Sept. 15th.

This case was treated in the Savannah Poor House, and yielded to the ordinary remedies, and the patient was discharged in the course of ten days. He returned to a miasmatic situation, on the Savannah river, and was attacked again with intermittent fever. He entered the Hospital and Poor House Oct. 7th, and stated that for the last four days, he had had "dumb ague," which came on every day at the same hour, (11 o'clock A. M.,) and lasted two hours.

A purgative, followed by xxv. grains of sulphate of quinia, was administered. This delayed the "dumb ague" until Oct. 9th, 3½ o'clock P. M. (28 hours).

Examination commenced half an hour after the commencement of the "dumb ague." Lips and fingers purplish; extremities cold; head and trunk warm. Complains greatly of the sensations of cold, but shakes far less than in the former cases recorded.

Pulse 92, so feeble that it is with difficulty felt, and with still greater difficulty counted. The vibrations of the pulse resemble those of a fine thread. Respiration accelerated and irregular.

Temperature of Atmosphere, ...	75° F.
" " Hand, ...	83
" under Tongue, ...	101° 5′

6½ o'clock P. M. Reaction has taken place, and he now has fever.

Pulse 96, much fuller than during the chill, but weaker than in a frank open case.

Temperature of Atmosphere, ... 70° F.
" " Hand, ... 101° 75′
" under Tongue, ... 102° 75′

In this case, which was far more serious than any which we have yet recorded, the urine was of a high color and specific gravity, and correspondingly rich in urea and extractive matters. The uric acid was slightly increased.

Oct. 10th. Intermission of fever.

Temperature of Atmosphere, ... 70° F.
" " Hand, ... 97° 5′
" under Tongue, ... 98° 5′

CASE VI.—Irishman; black hair, black eyes; height 5 feet 10 inches; weight 150 lbs. In health, florid complexion.

Has been suffering with intermittent fever for four days. Chills have been slight. The present chill (Sept. 23d) is slight.

Temperature of Atmosphere, ... 79°F.
" " Hand, ... 90
" under Tongue, ... 102

CASE VII.—Seaman—Englishman: brown hair, brown eyes; florid complexion in health, now his complexion is anæmic; weight 146 lbs.; age 25; height 5 feet 6 inches.

Sept. 10th. Entered the Savannah Marine Hospital, with bilious remittent fever, and from this date until the 19th inst. was extremely ill.

This patient recovered so as to be able to walk about the hospital yard. Notwithstanding the administration of tonics and iron, his complexion was pale, anæmic, and he complained of a severe and continual pain in his head.

Cut cups, external applications and internal remedies, failed to relieve the pain in his head. On the 4th of October he was taken with a severe chill, followed by high fever. This returned every day.

Oct. 6th. The chill has been on him one hour, and the hot stage is just coming on. Pulse 110, feebler than after the complete reaction, but stronger than during the lowest depression of the cold stage. Respiration irregular, thoracic, panting—45–50. Muscles trembling violently.

Temperature of Atmosphere, ... 70°F.
" " Hand, ... 97
" under Tongue, ... 104

CASE VIII.—Irish laborer: stout, well formed man; sanguine temperament; light hair, blue eyes, florid complexion; height 5 feet 9 inches; weight 190 lbs.

This is his second attack of chill and fever this season.

Sept. 18th, 11 A. M. Chill is now just going off. Pulse 112. Respiration 28.

Temperature of Atmosphere, ... 90° 5′ F.
" " Hand, ... 100
" under Tongue, ... 104

Sept. 19th, 2 P. M. Apyrexia complete. Pulse 68. Respiration 24.

Temperature of Atmosphere, ... 91° F.
" " Hand, ... 97° 5′
" under Tongue, ... 99

Recovered from this attack—commenced work upon a steam Tug, and slept on board, in the Savannah river, at night. Returned to the hospital with a third attack of intermittent fever.

October 2nd, 2 P. M. Has a chill and is shaking violently. Pulse 120, in sitting posture. Respiration 22, in sitting posture.

Temperature of Atmosphere, ... 79° F.
" " Hand, ... 89
" under Tongue, ... 102° 25′

Oct. 3rd, 2 P. M. Has high fever. Pulse 100. Respiration 26, thoracic.

Temperature of Atmosphere, ... 77° 5′ F.
" " Hand, ... 105
" under Tongue, ... 106

Oct. 4th, 2 P. M. Apyrexia complete. Pulse 58. Respiration 20.

Temperature of Atmosphere, ... 76° F.
" " Hand, ... 96° 5′
" under Tongue, ... 98° 5′

From these and many other examinations of the phenomena of intermittent fever, I have deduced the following conclusions, the importance and bearing of which will be more fully pointed out hereafter.

(1). *The higher the temperature of the trunk, during the cold stage, the more rapid will be the equalization of the circulation and temperature.*

(2). *The higher the temperature of the trunk, during the cold state, and of the extremities and trunk during the subsequent hot stage, (stage of equalization of the circulation and chemical action,) the milder and shorter will be the attack. A high temperature in imtermitteut fever is then a favorable symptom.*

Whether the high temperature signifies an effort on the part of nature, to break up, chemically alter, destroy, and throw off the malarial poison ; or whether the high temperature be significant of nothing more than vigorous, vital, nervous, physical and chemical forces, nevertheless the determination of the correlation of the respiration, circulation, and temperature (chemical action), affords the most valuable information to the medical practitioner.

Having already extended this article over much more than the space allotted, I will leave the discussion of these subjects to a subsequent article.

Before closing, it is necessary that I should state the methods by which the Temperature, Pulse and Respiration were determined.

The pulse and respiration in these and subsequent investigations, were, unless stated otherwise, always determined in the recumbent posture.

All the temperatures recorded in these and subsequent investigations, were determined by the same instrument. This thermometer was compared with standard instruments, and found to be accurate. The thermometer was always allowed to remain under the tongue, in the hand, or under the arm-pit, for some time after it was stationary, and all the observations were taken and recorded at the bed-side, under my own hand and eye.

The greatest care was exercised in determining the temperature; the patients were in all cases, unless stated otherwise, lying quietly in bed, and protected from all currents of air. The importance of attending to these circumstances, are strikingly illustrated by the following experiments, which I performed upon myself.

Athens, January 23rd, 6 o'clock A. M. Lying in bed, just after waking from sleep. Pulse 76. Respiration 15.

Temperature of Atmosphere of Chamber, . . .	45° F.
" " Atmosphere	28
" " Hand, ...	95
" in Axilla, ...	98

Dressed myself and took a walk of two miles, over several hills, in thirty minutes. The ground was frozen and covered with frost. During the walk, my hands were bare and freely exposed to the atmosphere. At first, the sensation of cold was unpleasant, but towards the end of the walk, reaction appeared to take place and they felt much warmer.

Pulse 90. Respiration 20.

Temperature of Atmosphere, ...	30° F.
" " Hand, ...	78
" in Axilla, ...	98

During the walk, the pulse had gained 14, and the respiration 5, to the minute. The temperature in the hand had fallen 17°, whilst that in the axilla had remained stationary. The respiration, in bed, was gentle and regular. The respiration, after walking in the cold, was accelerated, full and vigorous.

Here we see that a diminution of the temperature upon the exterior was attended by a corresponding change in the movements of the circulatory and respiratory systems. They became

more active, in order to receive, and distribute more rapidly, the oxygen, and remove, with corresponding rapidity, the increased products of the increased chemical changes.

It is also worthy of note, that the increased circulation and respiration was not attended with a rise of temperature, because the radiation of heat from the surface of the body, more than balanced the increased generation of heat, consequent upon the increased chemical change.

I took breakfeast, and then walked three miles over several hills, in 40 minutes. My hands were kept in the over-coat pocket during the walk.

Pulse 88. Respiration 26.

Temperature of Atmosphere,	45° F.
" " Hand,	97°
" of Axilla,	98°5′

January 24th, 4 o'clock, P.M.—After sitting and writing for several hours in a cold room, without fire, my right hand, which was freely exposed moving over the paper, felt very cold and stiff.

Pulse 76. Respiration 16.

Temperature of Atmosphere,	48° F.
" " Right Hand,	75°
" in Axilla,	98°5′

In this experiment the right hand lost 22° in the course of two hours.

These experiments demonstrated, conclusively, the absolute necessity of adhering rigidly to a uniform method of ascertaining the pulse, respiration, and temperature in health and disease.

In comparative investigations, the truth will not be obtained without the most scrupulous and unremitting attention, to the position and state of the patient, and all the surrounding circumstances.

(*To be continued.*)

On the Use of Iron. By Isaac Casselberry, M. D., Evansville, Indiana.

A brief notice of the anatomy and physiology of the blood will make its morbid changes during fever more evident.

Anatomy.—The blood is a living fluid tissue, which is formed and matured by the organizing force of the automatic nervous system out of the organizable constituents of the maternal blood during embryotic life.

After birth, the organizable elements of the blood are derived from the food, which is decomposed by the gastric juice. These

elements are then transformed and rearranged by the organizing force of the automatic nervous branches of the stomach, and constitute *chyme.*

This is conveyed into the duodenum, in which additional organizable elements are received from the liver and pancreas. The whole mass is then transmuted and reformed by the organizing force of the automatic nervous branches of the duodenum into *chyle.*

This is absorbed by the lacteals, in which it undergoes a continued series of molecular changes and combinations, until it is deposited in the subclavian vein.

The blood consists of a vast number of cells, which are the agents the automatic nervous system employs to perform its functions in the human organism. These differ in form, size, and functional endowments, according to the varied duties they are designed to fulfil.

For practical purposes, they may be arranged into two classes; one of nutrition or reproduction, the other of secretion or removal. When the human organism is at maturity and in health, these processes should maintain a relation of exact equivalence.

Physiology.—The cells of nutrition are endowed with an elective force, by which they select and attract the nutritive elements of the blood, which they transform and rearrange into molecular combinations. These combinations undergo a continued series of molecular changes and recombinations, until they attain maturity, when the elements they have elaborated are appropriated and form constituent parts of the tissues, with which they possess identity of elementary composition and arrangement.

The cells of secretion are, likewise, endowed with an elective force, by which they select and attract the effete or worn-out elements which they transform and arrange into molecular combinations. These combinations undergo a continued series of mutations, till the elements they possess are completely elaborated in the capillaries of the depuratory glandular systems, in which they are coalesced and removed from the blood as secretory products. The form of force by which they are coalesced is a specific endowment of each of these glandular systems, by which this important change is produced. One depuratory system cannot, therefore, compensate for deficient function in another only so far as the elements conveyed to it are identical with those of its own secretion.

The blood gives each tissue the means of repairing itself: first, by furnishing it with material of new growth; secondly, by removing from it those elements of its composition which have become worn out and useless. Were this the whole history of the blood, its investigation in disease would be comparatively easy. But it undergoes progressive changes analogous to the

growth of the solid tissues. The new materials it obtains from the food are not blood at the time of their addition; they are crude immature products which subsequently mature.

The automatic nervous system endows the blood with a power to resist changes, convert crude material into its own elements, and perpetuate its own elementary composition and molecular arrangement. Physiology teaches that the abundance of cell developement measures the activity and constancy of growth; and that this developmental activity in the blood is infinitely greater than in any other tissue. Cell-germs abound in the fluid of the thoracic duct. But they attain their maturity and fulfil the purpose of their creation only when received into the blood.

Not only does the blood grow, but its growth must precede that of every other tissue in the organism. It grows, then the other tissues grow at its expense.

Its functions in health will show sufficiently what peculiar difficulties attend any investigation of its changes in disease. The extreme rapidity with which all its changes transpire, and the minute quantities in which several ingredients exist, oppose great obstacles to the research; but these are greatly enhanced by the physiological fact that all the elements of the blood correspond to different periods of time, to different degrees of developement, and to different developemental cells.

Viewed as an object of scientific research, human life exhibits itself in a series of manifestations, the connection and recurrence of which are determined by the changes which the food and the oxygen absorbed from the atmosphere undergo in the organism under the controlling influence of the automatic nervous system; for the first condition of life is the assimilation of nutritive material, and the second is that of a continual absorption of oxygen from the atmosphere. The intensity, the integrity, the quantity, and the quality of the molecular combinations and rearrangements of the elements of the blood depend on the mutual action of the oxygen of the atmosphere and the elementary constituents of the food.

The most convincing experiments have proved that the human organism is absolutely incapable of producing an elementary constituent, such as carbon or nitrogen, out of substances which do not contain it; therefore it follows that all kinds of food, to produce the tissues and maintain them in a normal relation with each other, must possess the elements of which the tissues are composed. Fibrine and albumen, the chief ingredients of the blood contain seven chemical elements, among which are oxygen, carbon, hydrogen, nitrogen, phosphorus, and sulphur. The serum retains in solution sea salt and the salts of potassa and soda, in which the acids are carbonic, phosphoric, and sulphuric.

The globules of the blood contain fibrin and albumen, with a

red coloring matter in which iron is a constant element. They are formed out of the elements contained in the serum; because it is the atmosphere, and supplies the material for cell developement, which is constantly taking place within this fluid. Hence it is the most important branch of hæmatology.

The chief constituents of the blood are compounds, in which the relative proportions are invariable. These compounds are the nascent state of the tissues, and maintain a relation of mutual dependence on each other. The blood could not become organized, nor could it promote the growth of tissues without the existence of albumen in the serum; because the globules are developed in this fluid at the expense of its albumen, and they carry the oxygen which they absorb from the atmosphere into every tissue of the organism, where it determines the changes which may transpire.

Oxygen is necessary to the growth and maturity of the tissues; it is necessary for their conservation; and it is necessary for their conversion into lifeless compounds; but it can only be introduced by the agency of the globules. These can only attain a condition favorable to the reception and conveyance of the oxygen at the expense of the primary elements of the blood, which are obtained from the elementary constituents of the food.

The absorption of oxygen and the secretion of carbonic acid gas constitute the visible functions of respiration, and the vast absorbent and secretory capacity of the lungs depends on the immense expanse of absorbent and secretory cells brought in proximity to the oxygen of the atmosphere at each inspiration, and on the quantity and quality of the molecular combinations of the elements of the blood which are developed during that period.

The food must contain and supply the elements of which the blood is composed; they must undergo normal transformation; they must grow and mature normally, before the necessary quantity of oxygen can be absorbed to consume them by combination. For a more enlarged consideration of this interesting subject the reader is invited to an essay in the *American Journal of the Medical Sciences*, for July, 1855, on the Physiology of the Automatic Nervous System, in which I maintain the unity and mutual convertibility of all the different forms of external force and of all the different forms of the automatic nervous force, and to another essay in the same Journal for April, 1856, in which I endeavored to show the causes of fever, and explain the mode in which they produce diseased transformation of the tissues.

Pathology.—From these physiological facts, it is evident that fever may assume a vast multiplicity of forms, which are manifested by characteristic symptoms. These have often been *mistaken* for the disease itself; and the error has been magnified and perpetuated by giving them *names* which have been commemo-

rated by *learned* authors. Symptoms are like sentinels on duty; they guard the organism, evince the existence of disease, indicate the avenues of its approach, and the degree of resistance offered by the organism, manifest its progress, portray its pathology, and proclaim its triumph or announce its extermination. Clothed in the attire of fancy, marshalled by the mandates of theory, mantled by the nomenclature of authors, they are often received and entertained in the mansion of affliction instead of the disease.

Fever is a diseased transformation of all the tissues, but the fluid tissues suffer the most, because the solid tissues are formed in them and of them. The blood contains not only the nutritive elements, but also the effete constituents of the transformed solid tissues. Both the nutritive and the effete elements are formed, matured, and appropriated by cellular combinations.

These are the agents of the automatic nervons force acting on the organizable constituents of the food, and blood, or upon the organizable elements of the transformed tissues.

The activity, the quantity, and the quality of the molecular combinations depend on the intensity and integrity of this force, manifested as nutritive attraction, molecular affinity, and effete repulsion. The nascent state of this force in any of these forms are easily transmuted; and both the developmental cells and the molecular combinations, to the formation of which it contributes, as the formative or organizing force, will partake of the abnormal mutation. Hence the vast number of symptoms which arise during the incipiency and course of fever. The cells of nutrition neither grow nor mature normally; nor are their constituents appropriated to the nutrition of the tissues normally. From the diminished quantity and feeble intensity of the organizing force of the automatic nervous branches of the digestive and assimilative organs, the organizable elements of the food are not decomposed, transformed, rearranged, and absorbed in normal quantity and quality; only a small amount of nutritive material is received by the lacteals out of which blood may be formed and developed; and the molecular combinations of the cells, containing this, are so imperfect, that they cannot undergo mutations with normal force and celerity.

Imperfectly developed by molecular combination, the nutritive constituents of the blood often aggregate in some of the capillaries, in which they then constitute excessive and perverted nutrition, or inflammation. This is of frequent occurrence during the progress of fever, and merits the anxious and careful consideration of the physician.

During fever the secretory cells are neither formed, developed, nor matured normally; nor are the elements which they should normally aggregate and elaborate depurated from the blood; because the nutritive elements neither absorb a normal quantity of

oxygen from the atmosphere, nor does that which is received undergo normal molecular combinations on account of their imperfect molecular developement.

The imperfectly combined oxygen, when it is not consumed by molecular combination with the protein elements of the blood, acts upon those elements of the solid tissues exciting the sensation of *pain*, when it consumes branches of the sensitive nervous tissue, producing *irregular* and *involuntary* muscular actions, when it consumes those of the excito-motory, and creating the sensation of *thirst, oppression*, and *suffocation*, when it consumes only those of the automatic nervous system.

During the incipiency of fever, the effete elements of the blood, therefore, undergo a series of abnormal transformations, and are chiefly retained in the blood; a lesion of nutrition and secretion exists, the organizing force of the automatic nervous system, which in a normal state, creates, maintains, and governs the cellular formation and coalescence of the elementary constituents of the blood is increased, decreased, or perverted; there is a lesion of capillary circulation; the blood recedes from the external capillaries and accumulates chiefly in the portal venous system; a diseased transformation of all the tissues is present; *Fever exists;* it is manifested by symptoms; these assume a great multiplicity of appearances and forms, according to the pathological condition of the tissues.

There is no longer a perfect equilibrium between the processes of waste and repair; neither a normal quantity of food is desired, nor could it be assimilated, were it ingested; every tissue, therefore, suffers for appropriate nourishment.

Those more immediately concerned in the processes of nutrition most early evince the requirements of food, or the necessary elementary constituents for the repair of their tissues.

As the automatic nervous system creates, governs, and maintains all the tissues by its organizing force acting on the organizable elements of the food and blood, it is the first tissue to manifest the want of nourishment by lesion of the different forms of its force.

Quinine supplies nutritive elements to this tissue, and by this gives its different forms of force increased intensity. Its physiological effects on the organism are an increase of the developmental intensity and celerity of the cells, and a promotion of their molecular combination and coalescence, by which the transformation of the nutritive cells is increased, and those of secretion augmented. When a diseased transformation exists, it should, therefore, be carefully administered, and its effects sedulously investigated.

In the June No. of the *Cincinnati Medical Observer* for 1857, I have given my views of the use of quinine in fever; and in the

July No. of the *American Journal of the Medical Sciences* for 1857, I have discussed, at some length, the use of water in fever.

In the latter essay I have maintained that the hydrogen of the water combines with the imperfectly combined oxygen in the blood, forms water, and is removed from the blood in the form of sweat or perspiration; while the oxygen of the water combines with the carbon of the blood, evolves heat, and is secreted in the form of carbonic acid gas.

The attention of the reader is invited to each of these essays.

After the employment of appropriate remedial agents, and the removal of the more manifest symptoms of fever, there often remains an impoverished condition of the blood, which is a fertile source of local dependent forms of disease, especially when, during the progress of fever, a chill from time to time occurs. The condition of the blood is *sensitively* evinced by lesion of nutrition, loss of nervous energy, want of appetite, muscular debility, and more or less perversion of secretion; and *it is caused by deficient developmental intensity of the molecular combinations of the elements of the blood.*

The large proportion of albumen generally found in this morbid condition of the blood, is the result of defective cell-growth; because there is more nutritive material in the serum than could have remained there, if the normal proportion of blood-cells had been developed out of it. The evidence is, therefore, almost conclusive, that the albumen which exists in the blood does not grow and mature normally, or it would be consumed by molecular combination.

The causes of fever, how slight soever they be, retard the developemental intensity and activity of the blood cells; and if they be long continued, frequently repeated, or of great disturbing force, they impair the normal molecular changes of the blood, and transmute them, with more or less celerity, into the different forms of chemical force, when life may soon become extinguished. If the abnormal mutations be arrested, a period of time must transpire before the different forms of the organizing force of the automatic nervous system can attain normal tranquility and intensity; because the tissue of this system has suffered for normal nutrition; and its different forms of force have been so disturbed and so transmuted, that time is required for them to regain normal intensity and a controlling influence over the molecular combinations of the blood.

When this is obtained, all the forms of the organizing force are united in purpose, harmonious in action, and conspire to promote the conservation and well-being of the organism. But they require organizable elements to elicit their action; and the lesion of nutrition opposes the attainment of this grand object by not supplying all the constituents necessary to the developmental intensity of the blood-cells.

Although so minute, these cells always act harmoniously; they elaborate the constituents of the blood in a continued series of succession; each performs a definite and distinct duty; but the blood must contain all the elements, of which the tissues are composed, or these cells cannot be normally transformed and rearranged; they cannot grow and mature normally, because the absence of a single organizable element would disturb the unity of purpose and the concert of action between the different forms of the organizing force, and thereby impede the molecular growth and development of the whole. This is precisely what always transpires during the incipiency of fever; and it is perpetuated throughout its course. The lesion of nutrition may be slight, but it is sufficient to produce and maintain the continued absence or immature condition of one or more constituents of the tissues.

The developement of the blood must, therefore, be imperfect; and this imperfection will always be commensurate with the degree and duration of the nutritive lesion.

The dependence of the capillary circulation upon the normal molecular combinations of the elements of the blood always produces a lesion of this circulation proportionate to the abnormal mutations, which transpire from imperfect developement of the globules.

There is, therefore, always present more or less anæmia in fever; because the morbid changes of the molecular combinations of the constituents of the blood prevent its introduction into the capillaries in normal quantity by *nutritive attraction;* and although the arterial system may be bounding and throbbing, these vessels convey an absolutely diminished quantity of blood to the capillaries.

The mechanical force of the muscular action of the heart and arteries is derived from the cellular changes of the elements of the blood at the ultimate termination of their muscular fibres; so that it must be diminished in intensity when these molecular mutations do not take place with normal force and celerity from deficient developement of the globules.

Enfeebled action of the heart and arteries is, therefore, always present in fever. Their mechanical force is diminished; they only propel a quantity of blood to the external capillaries equal to their propulsive intensity; and as this is not equal to the whole quantity of the blood, a certain portion must regurgitate from the heart, at each systole, in the portal venous system.

The morbid accumulation of blood in this venous system produces an anæmic state of the external capillaries.

These abnormal states of the circulation perpetuate fever, because only a small quantity of nutritive material can be elaborated and introduced into the blood on account of the capillary lesions; and the molecular mutations of the blood in the depurato-

ry glands are, consequently, so abnormal, that what already exists is very imperfectly depurated.

Only a limited quantity of oxygen is absorbed; but that which is received is not normally consumed by combination. Imperfectly consumed by combination, it combines with the solid tissues, producing their death and decomposition by conversion into lifeless compounds.

Fever, attended by the symptoms which arise from these states of the solid and fluid tissues, is called typhus or typhoid. It is frequently observed in the southwestern States in the autumn, when the days are hot and the nights cool, especially if fever with intermittent symptoms prevailed during the preceding summer.

Throughout the southwestern States, fever, with chills at irregular periods, is often of protracted duration; and, during its course, the spleen is liable to become hypertrophied, and the blood poor and attenuated. When the spleen is greatly hypertrophied, and soft and yielding upon pressure, large granular globules, two or three times the size of the natural colourless corpuscles, may frequently be oberved in great abundance in the blood; and usually the ordinary colorless corpuscles are in great excess in this condition of the spleen. Southwestern physicians, who have *unfortunately* employed bleeding from a large orifice in the treatment of inflammation of the lungs, when the spleen is in this pathological condition, can bear witness to the frequency of these appearances of the blood.

When this patholigical state of the blood exists, the hepatic functions are always more or less disturbed by the morbid accumulation of blood altered in quality in the hepatic capillaries. This disturbance, when it is of long duration, is usually manifested by a yellow appearance of the skin, clay-colored discharges from the bowels, and scant high-colored urine, alternated with green fetid evacuations from the bowels, and large quantities of yellow sedimentary urine.

A serous diarrhœa sometimes supervenes upon these conditions, when the sufferer is rapidly exhausted by the continuous drain of serum. Cruveilhier, Becquerel and Rodier, Andral and Gavaret, have conclusively shown that the attenuation of the blood by bleeding decreases the quantity of the corpuscles, while the other constituents undergo little change in their proportion either to each other or to the entire mass.

The same law prevails in respect to hemorrhage and many exhaustive forms of disease. The attention of the profession is particularly invited to menorrhagia, as it affects women who reside on our southwestern alluvial *bottoms*. With them the hemorrhage often alternates with serous diarrhœa, when general anæmia is soon produced and pervades every tissue of her organism.

The human female has a peculiar law of blood-development. During about thirty years of her life she forms blood enough for herself and an infant. If she be pregnant or suckling, this redundant blood formation fulfils its purposes by nourishing her organism and that of her infant; but if she be neither pregnant nor suckling, the large blood formation, which is normal to her for these purposes, becomes excessive in their absence, and tends to effect its own cure by means of recurrent hemorrhage for the mucous membrane of the uterus, which attends the discharge of unfertilized ova from the Graafian vesicles, and constitutes menstruation when it is normal, and menorrhagia when it is abnormal from the excessive quantity of blood discharged. Lesions of this process most usually occur from general causes affecting the development of the blood; and among these, in the south-western States, the most universal are those vicissitudes of the atmosphere which produce fever. The morbid influences of the climate or locality impoverish the blood and produce the pathological conditions which arise from the want of cell development of the blood-corpuscles.

The anæmia which so often takes place about the period of puberty in young women in the western States, consists essentially in deficient growth of blood-cells; and it is of much more frequent occurrence than is generally apprehended. During the autumn, teething children often suffer of a serous diarrhœa of protracted duration. This is perpetuated by the want of developmental activity of the globules.

The physiological effects of iron conclusively evince, that it promotes the development of the blood cells and accelerates their maturity. This is in accordance with a general law of the human organism, that the specific stimulants of cell growth in every tissue are elements identical with the natural contents of the cells, or convertible into them.

The globules of the blood contain increments of iron obtained from the food; and from the physiological facts that these are always present in normal blood, it is self-evident that iron is absolutely necessary to animal life.

From the physiological fact that the globules do not contribute to the nutrition of the tissues until they have attained maturity; that they will not mature normally without certain increments of iron; that when these are normally present they greatly promote the developmental intensity and activity of the blood-cells; that they increase the capacity of these cells for the absorption of the oxygen of the atmosphere and for the secretion of carbonic acid gas from the blood, by which the gobules assume a bright-red colour; that the blood in this manner oxidized is conveyed and introduced into the capillaries, in which its elements are transformed, matured, and appropriated to the nutrition of the

tissues, evolves animal heat, and absorbs the effete constituents of the transformed tissues; and that the pathological states which are produced are those which are dependent on imperfect molecular development of the globules, and the consequent deficient oxidation and depuration of the blood; we can appreciate the cause of the perverted condition of the different forms of the automatic nervous force, the abnormal forms this force assumes in the molecular combinatian of the elements of the blood, when all development is deficient, and the best means to effect its tranquility and early restoration.

Iron is the most efficient agent to promote the normal restoration of these lesions, because it supplies the element required to promote the growth and maturity of the protein globules. The effects of few medicinal substances are more immediate or more remarkable than that which results in disease from deficient cell development from the exhibition of iron.

Every physician has observed how soon, under the influence of this remedy, patients recover their normal complexion. A chemical analysis of the blood explains this sufficiently. F. Simon relates a case in which, after a few weeks of treatment, the proportion of blood globules rose from 32 to 95 in the thousand; Herberger, one in which it rose from 38 to 98; Andral, one in which it rose from 46 to 95.

Iron is seldom administered in a metallic state. It is usually oxidized, and combined with a vegetable or mineral acid. The compounds formed by combination of iron with the vegetable acids are less powerful and efficient than those by mineral acids. The citrate and tartrate of iron are mild in their action, and they may, therefore, often be given before the stronger compounds. We not unfrequently observe that the stronger compounds of iron, when first administered, apparently increase all the anæmic symptoms, especially those referable to the stomach and head. The potassio-tartrate of iron may be given along with the bitartrate of potassa, when there is œdema of the ankles, or of the cellular tissue generally. This is a valuable compound of iron in the anæmia of females, when there is local effusion in the cellular tissue.

Several of the compounds of iron are often given in larger doses than is necesary when the design is to promote the absorption of the iron into the blood. This observation applies especially to the carbonate, sulphate, and mutriated tincture. The regeneration of the globules, when much diminished in quantity and altered in quality, must require considerable time.

That the efficacy of a ferruginous compound is not in proportion to the quantity of iron it contains is shown by the fact that many mineral waters are very powerful, though they contain less than a grain in the pint. This fact clearly evinces the necessi-

ty of the greatest care in the selection of the compound we are about to employ; because the efficacy of iron often depends on the compound used and its mode of administration. Deficient cell-growth, which occasions the necessity for the employment of iron, causes a vast multiplicity of symptoms, which are produced by the functional disturbance of the visceral glands. The compound of iron should, as nearly as possible, be adapted to the particular state of the digestive organs, that it may be readily absorbed and elaborated with the nutritive elements of the blood; for this is the only mode by which iron can promote the growth and maturity of the blood. Sir James Murray first recommended the administration of iron in the following mode: Dissolve one drachm of the bicarbonate of soda in four ounces of water; then add to this one drachm of the muriated tincture of iron. The draught should be taken during effervescence. It should be repeated three or four times a day. Although the quantity of iron is small, yet it is in a state of subdivision so minute as to favour greatly the absorption of each increment. The double decomposition which takes place forms, as one of its products, muriate of soda. This saline is most congenial to the development of the globules.

During the protracted continuance of fever, diarrhœa, dysentery, or any other form of disease, during the autumn or winter in the Southwest, the use of iron according to this suggestion of Sir James Murray, is often attended with the greatest efficacy, especially when the fever, or other form of disease, assumes what is usually termed a typhoid form. The iron should be administered every three or four hours. alternated with other appropriate remedies. The minute quantities of iron and muriate of soda thus presented to the digestive and absorbent glands, which have been so long deranged and weakened, stimulate and promote the growth and maturity of their cells, and thereby favor the digestion and accelerate the absorption of any nutritive or medicinal substance. This will be celarly evinced by the increased secretion, which will take place in a day or two from the beginning of the use of the iron. The biliary, uninary, and cutaneous secretions will be greatly augmented; the tongue will become more moist, the thirst less urgent, and the sleep more tranquil.

When inflammation exists, iron should be used cautiously and carefully. When fever, dysentery, or diarrhœa assumes what is called a *typhoid* state, iron is of the greatest efficacy, because it stimulates and promotes the growth and maturity of the blood-cells. The matured blood-cells absorb and elaborate more oxygen from the atmosphere; an increased transformation of the elements of the blood ensue; the capillary circulation is accelerated and augmented, and increased secretion from all the depuratory glandular systems takes place.

When a typhoid state exists in any form of disease, western physicians have often prescribed for several days without observing scarcely any effect from the medicine they had directed. Let them employ iron, as here directed, and in a day or two, each medicinal article will begin to manifest its characteristic effects on the organism.

Muriated tincture of iron is a very efficacious compound in the treatment of menorrhagia. Its use should be continued for a considerable time. It may often be employed with the greatest advantage in fever with typhoid symptoms.

Iodide of iron is a preparation which combines in some degree the properties of iodine with those of iron, though the latter predominate. It seems to promote the secretions more than any other compound of iron. When it is not too stimulating it is one of the best tonics in the anæmia of phthisis and scrofula; and from my experience of its effects in these affections in this climate, it is *never* too stimilating. It may be advantageously employed in all cases of anæmia combined with enlargement of the lymphatic glands. It changes the molecular condition of indurated glands and promotes their absorption. It may be used advantageously in the chronic form of *many* diseases, in which calomel *should* have been employed during the acute state.

The citrated aromatic wine of iron possesses the most agreeable odor and taste of any medicinal compound of iron. It is seldom rejected by the most delicate stomach. I have directed it for children and young persons in various forms of disease with debility, and I never found it disliked or rejected, and its repetition is more generally desired.

When excessive secretion from a relaxed state of the mucous membrane in chronic bronchitis exists, combined with wine of ipecacuanha, it is of peculiar efficacy. In all diseases which arise from deficient developmental activity of the blood-cells, it is a remedy of great value. There are many other compounds of iron of peculiar value and great efficacy; but I cannot extend the limits of this paper by a definite notice of them.

When we contemplate the effects of the climate of the alluvion districts in the southwestern States in the production of an impoverished condition of the blood, the frequency with which this state of the blood is met with in these localities, and its injurious consequences to the organism when allowed to continue, the value of iron in the promotion of the growth and maturity of the blood-cells, and the consequent removal of this condition of the blood, can scarcely be sufficiently appreciated.

Lecture on Chorea and Myelitis of the Chord. By THOS. ADDISON, M. D., F.R.C.P., Senior Physician to Guy's Hospital.

GENTLEMEN.—There is that case in the bed, No. 15, that boy, J. B———, aged 11 years—a delicate, strumous boy that moves about like a frog or a lizard thrown into half a hundred contortions, and which you recognise at once as hemiplegic chorea. There is that poor boy, I say, so curiously afflicted; the case is one of great interest. You observed, no doubt, some of you, when first I saw him, how carefully we listened to the action of the heart, and how I felt the skin. I will explain why I did so as we go along.

Now, whenever I see a young subject the victim of chorea, I always suspect that it had its origin in rheumatism. I felt this boy's skin to discover if he had that sweaty surface, so characteristic of rheumatism. I listened to the heart, and what did I find? Loud mitral bruit. And what do we learn in going over the previous history, as noted by the clinical clerk? We find that about three years ago he had rheumatism; and here I may tell you, that you will often find, under the name of severe "growing pains," that you have had, in point of fact, a veritable attack of rheumatism. Are we to believe this mitral bruit was the result of rheumatism, or not?

Believe me, rheumatism is a very eccentric disease; I know none more so. There is no disease, perhaps of which we know really so little as rheumatism in its pathological essence and nature! An old physician of considerable experience was asked What cure is for rheumatism? His answer was laconic: "The cure for rheumatism is—*six weeks!*" In other words, rheumatism must be let cure itself. I have cut rheumatism and rheumatic gout short in less than half the time with colchicum or the powdered cormus and sulphate of magnesia, and other things; but I am not so certain that cutting rheumatic gout short by potent measures is quite the same thing as curing it. Let us, however, at all hazards mind the heart in these cases.

Rheumatism is a queer or eccentric disease, I have said. Now, it is my belief that rheumatic disease, whatever it is, *sometimes attacks the skin alone.* It is my firm belief that it sometimes attacks the heart alone. I know the rheumatic skin well; and I am satisfied also about the ravages committed by this so-called rheumatic inflammation in the endocardium and pericardium, and that, too, without any pain to attract attention. I see the rheumatic skin; and when I do, I almost with certainty predict rheumatism, which is sure to supervene. One may sometimes find the heart inflamed, by itself, but you will do well to look out for rheumatism in the joints and their syno-

vial or ligamentous tissues. This pericarditis is of a marked kind, with no pain about the heart.

But you say, What has all this to do with chorea? Well, what the relations are is not clearly made out; but that there is a connection or relation is perfectly evident. If we look at it in this way, we find, for instance, in acute endocarditis, the patient's manner is often very remarkable, more so than in pericarditis; he may be even quite delirious or laboring under decided cerebral complications.

Some ability and ingenuity are shown by Dr. Kirkes and others in tracing certain clots or shreds of fibrinous matter, as washed from the endocardium into the brain, causing irritation there. On the continent, I find they look on the matter in a less mechanical way, and they say a poison—say, like that of some other serous effusions—is carried to the brain from the rheumatic deposit in the endocardium. I am afraid we have too many analogies in pyæmia and other affections to give stability to this hypothesis.*

There are several curious associations, I have said, between the brain and heart, epilepsy, for instance, affects the heart. Sometimes, a fit of epilepsy extends itself in a violent tumult of the heart. I was consulted some time ago by a gentleman—a manufacturer at Huddersfield, or somewhere down there—for some curious functional derangement of the heart. I told his family doctor it was epilepsy of the heart; and I believe my friend thought I did not know what I was saying, and smiled at me; but the epilepsy of the heart, with those curious fits of unconsciousness he could not understand; and how puzzling they are you will find when you get into private practice; so that you cannot give too much attention to them. Well! these anomalous fits of unconsciousness and tumultuous palpitation ended, nevertheless, in regular fits of epilepsy—some of the most marked, perhaps ever seen. I do not pretend to explain how this is brought about; I only know the practical bedside fact. The relations of the fit in epilepsy itself are very peculiar; but emotional influences will produce palpitation of the heart; and, I suppose, in some such way, epilepsy produces it as a

* Chorea is derived from the word *choros*, a dance. During the middle ages, we learn from Hecker, sundry choreic ravings attacked the peasants at Kolbig, Erfurt, and Utrecht, in 1374. At Aix-la-Chapella the sick thus seized "appeared to have lost the control over their senses, and were only relieved by swathing the body," and various incantations common at the time. These choreic ravings were mixed up with various religious ravings, evidently the reflection of sundry broken images, as from the broken mirror of some popular impression of the day. The name "St. John's Dance" was given to chorea, as it was at one time thought chorea, originated in the revels of that festival and St. Vitus's dance, because of the cures effected at the celebrated chapel of St. Vitus. This disease continued two centuries. Paracelsus (no very reliable authority) gives a long description of the epidemic, and the Arabians called it a palsy.

sort of first of three warnings." Emotional influences or fright will cause chorea; in fact, it is the most common of all causes of the disease. A dog runs after a child; a ghost story is told by a foolish nurse; a house takes fire, and child is exposed to danger; the child, perhaps, is seized with chorea: some horrible agitation * is set up in the emotional (or central) parts of the brain, and chorea fits are the result. The complication or connection of chorea and heart diseases is so common that I always look for it. See in that case of gout, on the other hand, in that poor woman in the other part of the ward, you can scarcely tell it from rheumatism; she has renal disease, with gout in her foot; but her heart is perfectly free, and, in all probability will continue free. How curious these peculiarities are!

Yet gout and rheumatism are pathological first cousins; but why does one affect the heart, the other not? I cannot tell you. Well, we gave this boy a mild mercurial first, to settle all right in the *primæ viæ*, and we shall follow that up with the sulphate of zinc, in which I have great faith as a remedy in chorea. At Guy's at least, we have not yet hit on any thing equal to it.

These poor patients with chorea are often very ludicrous, but very distressing to observe. I have seen four or five deaths from the excessive exaggeration of the chorea spmptoms; like lizards or eels, such patients are contorted into a myriad of forms; they glide and twist and tumble about the floor and out of bed or into the fire! I have known chorea to begin with pregnancy, and go on increasing as the poor big-bellied woman got bigger and more unwieldly, and only yield when the uterus became empty again! Dr. Hamilton once thought purgatives cured chorea; but I do not believe this is invariably found. Sulphate of zinc or oxide of zinc is the remedy we have made out as most valuable at Guy's. I have known a patient take of sulphate of zinc (not oxide, mind) so much as eighteen grains four times a day. My attention was once drawn by the late Dr. Chambers to a peculiar cast of countenance such patients acquire who are taking these very large doses of zinc: you know, of course, the dark tint or tinge produced by nitrate of silver, the dark line of the gums by lead, &c. We were attending a patient for another disease altogether, and though Dr. Chambers could not describe what it was, he said, to one in the apartment, "Why you are taking zinc, are you not?" and it turned out that he was. The nearest idea I can give you of the zinc complexion of the face is, that it is destitute of the freshness and cherry redness of rude health, and the skin of the face assumes a glossy sameness of

* It was recently stated that a young man dropped dead of fright, at a theatre, on seeing the Ghost in 'Hamlet' stalk forth for the first time on the stage; and a similar case of death from fright, not long since formed the subject of a coroner's inquest.

tint very like pewter; in fact, Dr. Chambers knew the "pewter face" very well; it requires the light to fall in a particular direction, and then you will see it: the hint may be of use to you. We will now say a few words about the patient in the bed No. 20. He has been in the habit, he tells us, of carrying heavy loads on his head; this I need not say, produces a strain on the muscles about the neck, and pressure on the veins. Well, he has had fits of unconsciousness, and now has excessive pain of a neuralgic character in his limbs. We had a man not long since under care, you recollect, with what I called, "*ligamentous rheumatism.*" I have seen more than once this sort of ligamentous rheumatism attacking the delicate ligaments, the odontoid, and others of the articulation of the axis occipital bone and others of the axis and atlas; in one case of a boy it threatened to end in universal paralysis, as the thickened membranes no doubt pressed on the medulla oblongata, producing a somewhat common disease, myelitis of the medulla oblongata or chord, or perhaps mechanical pressure. In a woman with the same disease I verily believe we saved her life by keeping the head, almost in splints, perfectly quiet. We will adopt the same plan in this poor man; we shall support him and prescribe cod-liver oil and tonics, and you will see the result.—[*Medical Circular.*

On the Causes of the Pneumonia which supervenes upon Laryngotomy. By Professor Schuh.

All surgeons of experience are aware that pneumonia is sometimes observed after the performance of laryngotomy or tracheotomy: but observers are by no means agreed upon the causes of this. Most persons, however, seem of opinion that the operation itself does not bear any direct casual relation to this occurrence. Professor Schuh entirely differs from them, and the performance of a very large number of operations upon the air-passages, during his twenty-three years' attendance at the Vienna Hospital, enables him to speak with authority upon the subject. Although a great advocate for these operations under a variety of circumstanses, he is convinced that the altered position and amount of the column of air that is admitted into the lungs is not unfrequently the sole cause of the supervening pneumonia. The following are the grounds for this opinion:—

1. The air, after the operation, enters the lungs by a shorter passage, and by one that is straight in place of being curved, as before; and it does not pass through an aperture which is alternately widened and contracted, as is the case with the *rima glottidis.* The column of air, too, which passes through the canula is larger than that which traverses the glottis, for if a smaller

canula were employed, it would be liable to dangerous obstruction. We have thus two important changes in the mechanical conditions of respiration; and the lung becomes exposed to the pressure and impulse of a large column of air, arriving more rapidly by a shorter passage. This, so tender and vascular an organ will not always support, and inflammation may be easily excited, just as it may when, in the operation of paracentesis thoracis, the fluid is too rapidly drawn off, and the lung is too suddenly exposed to the pressure of the air. 2. Experience confirms what *à priori* might have been expected. Any one who has very frequently performed the operation, must have met with cases in which the patient has complained of the admission of too large a quantity of air, and has only felt at ease when the opening of the canula has been diminished a third or a half by sticking-plaster. If such an indication of an intelligent and observant patient be neglected, pneumonia will follow. 3. The author has lost several patients in whom, at the time of its performance, no signs of pneumonia could be detected, and who seemed to be going on very well to the tenth or even twenty-first day. Not only did no other cause for the development of the pneumonia exist, but this was also always found on the right side—this being on account of the greater width and shortness of the right bronchus more exposed to the impulse of the air. The disease does not come on actively, but is indicated by some acceleration of respiration and slight fever. Physical examination, however, shows that very considerable infiltration has taken place; and the neglecting to institute this may be a cause that many pneumonias have been overlooked. 4. Cases of cut-throat, in which the larynx is wholly or partially divided, also strikingly exhibited the danger of opening into the air passages, such patients not infrequently perishing in a few days of pneumonia, this always commenced on the right side, and in even fatal cases being usually confined to that side. It may also spring up in smaller wounds of this part, if these be not kept carefully closed either by sutures or suitable dressings and bandages.

To the question whether pneumonia after laryngotomy can be prevented, the answer is, that it can in many cases, but not in all. For this purpose no wider canula should be employed than is necessary to maintain uninterrupted respiration; and as soon as the patient can breathe freely enough through the mouth, and can both breathe and speak when its orifice is closed, it should be changed for a smaller one, or its opening should be partly closed by plaster. When the breathing continues perfectly easy, the canula being stopped, before this is entirely removed it should be allowed to remain in, completely stopped, during twentyfour hours, care being taken that it should not

project inwardly, so as to narrow the normal passage for the air. The temperature of the room should never be allowed to sink below 66° Fahr.

It is often exceedingly difficult to determine the time when the canula should be finally removed. After such removal, the patient may continue to breathe quite easy for from two to eight days, when the difficulty gradually returns, until it becomes as bad as ever. If even a couple of days have passed, the re-introduction of the canula can seldom be accomplished, and then only by first passing through the canula a conical obturator, which can better overcome the elasticity of the edges of the cartilage. The longer the canula has remained prior to removal, the more readily may it be re-introduced. The recurrence of dyspnœa is especially to be apprehended when we have reason to suspect ulcer of or around the rima, open abcesses, and sinuses beneath the mucous membrane. Tumefaction rapidly diminishes, and the normal permeability is soon re-established; but on the admission of the stream of air to the diseased part by the withdrawal of the canula, the former difficulties may soon be reproduced. Hence, when the diagnosis can be established, the canula in such cases should be retained during several weeks, in order to give the surfaces time for healing. According to Professor Schuh's experience, pneumonia never comes on after the first twenty-one days are passed, and the canula may then be worn for months or years without injury. On the other hand, the Professor has lost cases by removing the canula too late, pneumonia unexpectedly appearing. The sensibility of the lung to the unusual arrival of air, is especially great when the difficulty of breathing that has given rise to the operation has been of long duration, and the organ has become enfeebled by venous congestion and a diminution of the contractile powers of its cells.

In a case in which Professor Schuh performed laryngotomy in order to facilitate the removal of a large pharyngeal polypus, the patient who had suffered for months from a difficulty of breathing, was quite well on the day of the operation. The canula having, however, been left in during twenty-four hours, pneumonia was detected by auscultation within this period.

Thus, it results from what has been said, that pneumonia is sometimes a consequence of breathing through an artificial opening; and by due regulation of the size of the volume of air, the temperature of the room, and the timely removal of the canula, it may usually be prevented. This, however is not always the case, for the condition of the patient may require a long retention of the canula, the lung may be excessively sensible to the changed mechanism, and art has as yet furnished no apparatus as a substitute for the alternated dilatation and contraction of the glottis.—[*Wien Wochensch.*, and *British and Foreign Med. Chir. Rev.*

EDITORIAL AND MISCELLANEOUS.

THE AMERICAN MEDICAL ASSOCIATION.

This National Medical Congress of our Republic held its eleventh annual meeting in Washington, (D. C.,) beginning May 5th, 1858.

The Association met in the Lecture-room of the Smithsonian Institute, and was called to order at a quarter past 11 o'clock A. M., by Dr. Condie, of Philadelphia, when the Chair was taken by the President, Dr. Paul F. Eve, of Nashville, Tennessee. Vice-Presidents, Breckenridge of Kentucky, Reese of New York, and Campbell of Georgia, were also on the platform; and at their table were the efficient Secretaries, Drs. Foster of Tennessee and Semmes of this city [Washington]. Rev'd Byron Sunderland, D. D., at the invitation of the President, offered an eloquent and appropriate prayer, invoking the blessing of Almighty God upon the Convention.

The meeting was then addressed by Dr. Harvey Lindsley, of Washington, Chairman of the Committee of Arrangements. His welcome was warm and open-hearted, and expressed in language chaste, beautiful and appropriate; and was indeed but the earnest of that abundant hospitality the members were to receive during their sojourn at the Capital.

The number of delegates and permanent members present was larger, we think, than ever assembled on any similar occasion, excepting, perhaps, the meeting in 1853, held in the city of New York. The names amounted to over four hundred, on the calling of the roll at the first session.

On the calling of the roll by the Secretary, State by State, as it had been made out, up to the commencement of the meeting, the following number of delegates responded:

Maine 2, New Hampshire 8, Connecticut 18, Vermont 1, Massachusetts 40, Khode Island 5, New York 73, New Jersey 25, Pennsylvania 66, Delaware 4, Maryland 24, District of Columbia 25, Virginia 8, North Carolina 8, South Carolina 10, Georgia 12, Alabama 1, Kentucky 9, Tennessee 7, Indiana 6, Illinois 12, Michigan 3, Iowa 3, Missouri 4, Ohio 14, California 1, American Medical Society of Paris 1, U. S. Navy 2. [When the name of Dr Harvey, who has come from California expressly to attend this convention, was called, there was a loud applause.] Other members were announced at different times during the day, and when the Association adjourned there were *four hundred and six* names registered.

Dr. David M. Reese, of New York, now presented and read a written apology for having recommended for a position in Blockley Hospital,

Philadelphia, Dr. McClintock, who had been expelled from the Association for a violation of the ethics and the etiquette of the Profession, by lending himself to the quackery of Patent Medicines.

On motion of Dr. Condie, of Philadelphia, the apology was accepted, and ordered to be entered upon the minutes.

Dr. Bryan, of Philadelphia, who had also recommended Dr. McClintock, made a verbal adoption of Dr. Reese's apology, the reception of which was warmly debated. Dr. C. C. Cox, of Maryland, opposed, and Dr. Condie advocated the reception. Dr. A. B. Palmer, of Michigan, moved the previous question on a motion to refer the subject to a committee, which was lost. The apology of Dr. Bryan was then accepted. [It was rumored in the hall that Dr. McClintock will be reinstated during the session of the Association.]

The President, Professor Paul F. Eve, of Nashville, Tennessee, then delivered, in a clear voice and with pleasing oratorical effect, his annual address to the Association. This paper, which is a most able review of the history of the Association from its beginning to the present time, most eloquently and conclusively vindicates that body from the charge of having accomplished but little, and is eminently calculated to inspire its members with pride in view of what they have accomplished in the past, and with energy and determined high purpose for the future. It is fortunate that, by the unanimous action of the Association, such a paper is to be recorded in the next volume of the Transactions—and every journal should record it, as an encouragement and a stimulus to the American Medical Profession. It shall be presented to *our* readers in our next number, as a separate paper.

Dr. Grafton Tyler, of Georgetown, D. C., chairman of the committee on prize essays, reported that the essays received were three in number, each of which had been examined with great care; considering, first, the intrinsic merits of each essay, and then their merits in relation to each other. The first prize was awarded to "an essay on the clinical study of the heart's sounds, in health and disease," bearing the motto—"*Clinica clinice demonstrandum.*" The second prize was awarded to "an essay on vision and some of the anomalies as rendered by the ophthalmoscope," bearing the motto—"*Dux hominum medicus est.*"

Dr. Tyler then proceeded to open the sealed envelopes bearing the above-named mottoes, and containing the names of the writers of the essays. The first was written by Dr. Austin Flint, of Buffalo, New York; and the second by Dr. Montrose A. Pallen, of St. Louis, Missouri. This is the second time Dr. Flint has won this distinguished honor, and the third time that it has been awarded to Buffalo since the association was organized, eleven years ago.

On motion, the report of the committee was accepted and adopted. Doctors Flint and Pallen were then invited to give *resumés* of their essays, which they did, and each of the gentlemen was listened to with marked attention on the part of the association.

Among other gentlemen, Dr. Peter Parker, ex-commissioner to China, and assistant-surgeon Frederick A. Rose, of the British Navy, were unanimously elected "members by invitation."

The latter gentleman, Dr. F. A. Rose, of the British Navy, who so nobly volunteered his services on board the United States ship Susquehanna, at Port Royal, and who came in her to New York, devoting himself to the sick crew, was unanimously elected a "member by invitation," and invited to take a seat upon the platform. [Applause.] It was announced that Dr. Rose had left the city.

Dr. Francis G. Smith, of Philadelphia, chairman of the committee on publication, made his report, showing the expense of publishing the annual volume.

Dr. Caspar Wistar, of Philadelphia, presented his annual report of receipts and expenditures, showing a balance on hand of $806. Accompanying the Treasurer's report was a resolution providing that the back volumes on hand, when over two years old, shall be sold at two dollars a volume, and that volumes V, VII, VIII, and IX, of which there are a surplus, be sold at $5 a set to any member.

A report was made by the committee on nominations, which was accepted; and the association then elected the following officers:

President, Dr. Harvey Lindsley, of Washington City. *Vice-Presidents*, Drs. W. L. Sutton, of Kentucky; Thomas O. Edwards, of Iowa; Josiah Crosby, of New Hampshire; and W. C. Warren, of North Carolina. *Secretary*, Dr. A. J. Semmes, of Washington City. [The other Secretary will be elected when the location of the next association is selected.] *Treasurer*, Dr. Caspar Wistar, of Philadelphia.

On motion, Drs. Flint, of New York, Gross, of Pennsylvania, and Gibbes, of South Carolina, were appointed a committee to conduct the President elect to the chair.

Dr. Lindsley, having been introduced to the association by the retiring President, Dr. Eve, made a few pertinent remarks, acknowledging the honor as the highest he had ever been called upon to receive, and the highest that any medical man in America can receive. [Applause.] Unaccustomed to preside over so large a body, and having had but little practice in presiding over smaller assemblages, he must throw himself upon the forbearance of the association, and look to the members for support in the discharge of his official duties. [Applause.]

On motion, the thanks of the association were voted to the retiring

officers for the able and impartial manner in which they have discharged the duties of their respective offices. [Applause.]

On motion, the ex-presidents of the association present were invited to take seats on the platform.

The committee on medical topography and epidemics was called by States. A paper from the member from Maine stated that he will report next year. There was no response from New Hampshire, Vermont, Rhode Island, Connecticut, or Massachusetts. Dr. Smith, of New Jersey, read an able report on New Jersey, and the association then adjourned until this morning at nine o'clock.

Evening Hospitalities.—At eight o'clock in the evening the delegates and the ladies who have accompanied them paid a visit by invitation to the Executive Mansion. The East Room, with the adjacent suite of drawing rooms, were brilliantly lighted, and were filled by about five hundred gentlemen, representing all sections of the country, and a hundred or more ladies. One of the delegates had seen upwards of four score years—others have but just entered upon the practice of their profession.

The President received his guests, as they were successively presented by Dr. Cornelius Boyle, chairman of the committee of arrangements, with his accustomed cordiality, and afterwards moved about in the East Room, engaging in conversation with the gsoups there gathered. The entire cabinet was present, with J. B. Henry, Esq., Marshal Selden, and Commissioner Blake.

From the Executive Mansion the delegates generally proceeded to Georgetown, where they were hospitably entertained at the residences of Dr. Grafton Tyler, at the corner of Gay and Washington streets, and of Dr. Riley, No. 91 Gay street. A cordial welcome and good cheer awaited them at the houses of each of these distinguished practitioners.

There was a large number of arrivals at the different hotels last evening, and an interesting session may be expected to-day.

SECOND DAY.

The Association was called to order by the President, Dr. Harvey Lindsley, and A. J. Semmes, one of the Secretaries, read the minutes of the first days proceedings; which were adopted.

On motion of Dr. Watson, of New York, Dr. Delafield, of New York, one of the first officers of the association, was invited to take a seat on the platform.

On motion of Dr. Atkinson, of Virginia, an amendment to the constitution was received, providing that no person shall be recognized as a member or admitted as a delegate at meetings of the association who has been expelled from any State or local medical association, until relieved by action of such State or local association. [Applause.]

An abstract of the report on medical literature was then read by Dr. A. B. Palmer, of Michigan; which report was, on motion, accepted and referred to the committee of publication.

On motion, Dr. N. Bozeman, of Alabama, was elected a member by invitation.

The report on medical education was now presented by the chairman, Dr. James R. Wood, of New York. This is an able and judicious paper, of which we can at present only give a summary, hoping, in some future number, to transfer the whole of it to our pages. Dr. Wood, in our opinion, acted with good judgment, in referring many of the details of medical education to a convention of professors of colleges. This, certainly, instead of disfranchising the schools, as was apprehended might be attempted at the present meeting, is decidedly a step taken the other way. This measure is the more to be appreciated, coming as it does, from Dr. Wood, who, though not connected with any college, knows well how to estimate the exigencies and the requirements of medical teaching, in our country, from his long and intimate relation to this department, in the position he has so creditably filled in Bellevue Hospital.

The subjects discussed in this report are the following:—1st, primary medical schools; 2nd, the number of professorships in medical colleges; 3rd, the length and number of terms during the year; 4th, the requisite qualifications for graduation; 5th, such other subjects of a general character as to give uniformity to our medical system. Having reviewed these propositions at length, the committee have arrived at the following conclusions:

First. Primary medical schools should be encouraged; but, as office instruction will continue to be sought by students, practitioners should either give them necessary advantages of demonstrations, illustrations, and recitations, or if not prepared to do so, they should refer them to such primary schools, or medical men, as will give them proper instruction.

Second. The number of professorships should not be less than seven—viz: a Professor of Anatomy and Microscopy, Physiology and Pathology, Chemistry, Surgery, Practical Medicine, Obstetrics, and Materia Medica.

Third. There should be but one term annually, which should commence about the 1st of October, and close with the March following, thus lengthening the term to six months. The commencement of the term, in October, should be uniform in all the colleges throughout the country. During the session there should never be more than four lectures given daily.

Fourth. The qualifications for graduation, in addition to those now required by the schools, should be a liberal primary education, and attendance upon a course of clinical instruction in a regularly organized hospital.

In order to give our medical colleges an opportunity to consider the

recommendations here advanced, and that this body may have the advantage of their wisdom and their mature views, before any definite action is taken upon them, your committee submit to the association the following resolutions:

Resolved, That the several medical colleges of the United States be requested to send delegates to a convention to be held at on the day of for the purpose of devising a uniform system of medical education.

Resolved, That the present report af the special committee on medical education be referred to such convention for its consideration.

Resolved, That said convention of delegates from the several colleges of the United States be requested to submit to the meeting of this association in May, 1859, the result of their deliberations.

On motion, the report was accepted and referred to the committee on publication, the accompanying resolution being laid on the table.

The committee on nominations reported Louisville, Ky., as the place of meeting in 1859, and nominated Dr. S. S. Bemis, of that city, as second secretary. They also nominated the following standing committees:

Committee on Publication—Dr. F. Gurney Smith, Pa., chairman; Drs. Caspar Wistar, Pa.; A. J. Semmes, D. C.; S. M. Bemis, Ky.; S. L. Hollinsworth, Pa.; S. Lewis, Pa.; H. F. Askew, Del.

Committee on Medical Literature—Dr. John Watson, N. Y., chairman; Drs. L. A. Smith, N. J.; C. G. Comegys, Ohio; R. W. Gibbes, S. C.; W. M. McPheeters, Mo.

Committee on Prize Essays—Dr. J. B. Flint, Ky., chairman; Drs. M. Goldsmith, N. J.; H. Miller, Ky.; Calvin West, Ind.

Committee on Medical Education—Dr. G. W. Norris, Pa., chairman; Drs. A. H. Luce, Ill.; E. R. Henderson, S. C.; G. R. Grant, Tenn.; T. S. Powell, Ga.

Committee of Arrangements—Dr. R. J. Breckenridge, Ky., chairman; Drs. G. W. Ronald, B. M. Wible, D. W. Goodall, D. D. Thompson, N. B. Marshall, G. W. Burglass, R. C. Hewett, and A. B. Cook, all of Kentucky.

The report was accepted, the nominations were confirmed, and the committee received permission to sit again.

After considerable discussion, it was decided that the meeting go into a committee of the whole, to reconsider the acceptance of the apology presented on the day previous by Dr. Reese.

Dr. T. O. Edwards, of Ohio, now took the chair.

It was now moved, to read the remonstrance of the Philadelphia Medical Society, in which all the circumstances of the recommendation of Dr. McClintock by Dr. Reese, and his appointment to office in Blockley Hospital, were fully set forth.

Dr. Biddle, of Philadelphia, protested against the reading of the remonstrance, as a violation of plighted faith.

The remonstrance was however read. It was a long document, giving a detailed account of the recommendation by Dr. Reese of Dr. McClintock for a position in Blockley Hospital, after the last-named gentleman had been guilty of selling quack nostrums, and had thus committed an offence against the ethics of the profession.

Dr. Humphries of Indiana, moved that each member of the committee of the whole be restricted to five minutes, allowing Dr. Reese whatever time he wished to defend himself in.

Dr. Phelps showed that a ten-minutes rule was now in force. Dr. Cox moved, as an amendment, to make the time fifteen minutes; which amendment was lost, and the original motion of Dr. Humphries was then carried.

Dr. Reese then ascended the platform, and made a statement of his position from the commencement of the controversy. He considered his apology of the day previous a satisfactory one, but was willing to make it more so if it was objected to. He had not brought the subject before the association; but had been given to understand that if he made the apology which he had made, the remonstrance would not be offered. During his remarks there was a demand for the reading of the apology; which was read, as follows:

To the Officers and Members of the American Medical Association: The undersigned, one of the vice-presidents of the American Medical Association, having during the interval since our last annual meeting, certified to the professional fitness for the charge of the Blockley Hospital, at Philadelphia, of an individnal who had been expelled from this body for a violation of our code of ethies, after consultation with the other officers, and yielding to the advice of other personal friends, desires to say to the association now assembled—

1st. That in giving said certificate, he was prompted solely by motives of sympathy and humanity to a fallen brother, who had been a personal friend prior to his offence; and that he did not realize, acting under the impulse of the moment, that his individual act could be construed by the profession as indicating hostility to his brethren.

2d. That while his own mind is clear that his certificate contained only the truth, and that under his peculiar relations to the party concerned, he could not withhold his certificate, of medical qualification, consistent with conscience and duty, yet he is ready to concede that he had no abstract right to relieve the party from the censure of the association until this body had restored him to his fellowship.

3d. That so far from intending any disrespect to the association, or to its act of discipline, the undersigned had publicly sustained and defended both. He therefore disclaims the inference from his certificate

that he intended to recommend to a high professional office a man whom the association had excluded, and thereby nullify the action of this body.

And, finally, with these statements and disclaimers, the undersigned, while retaining his own opinion of the rectitude of his motives, and of his duty, under the peculiar circumstances of the case, is nevertheless prepared to defer to the judgment of those whom he knows to be his friends, that he erred in doing what he had no right to do, in view of his official position in the association, and is hence called upon to offer this explanation and apology to his brethren.

(Signed) DAVID M. REESE.

It was moved to refer the apology and remarks of Dr. Reese to a special committee of seven, to report to-morrow morning. Dr. Atlee, of Lancaster, and other gentlemen urged delay.

Dr. Condie hoped that a committee would be appointed to give the subject a careful consideration.

Dr. Cox, of Maryland, after complimenting Dr. Reese as an able practitioner and an experienced editor, whose labors have been of great value to the profession and to the country, said that he did not consider the statement full and satisfactory. The offence was not an unpardonable one, but the violation of that code of ethics which is the life of the profession should be properly atoned for. [Applause.] The apology was good enough, but it carried as its sting the mental reservation which Dr. Reese persists in. Nay, in his journal, issued simultaneously with this meeting, and circulated here, he says: "Having done right in certifying to the labors of our quandam friend McClintock, we resented the unmerited censures of our Philadelphia brethren." This completely stultifies the effect of the apology.

Dr. La Roche, of Philadelphia, explained his action and that of the Philadelphia county society in the matter.

Dr. Pain, of Vermont, Dr. Cox, and Dr. Bond made some rather sharp remarks. Dr. Davis of Massachusetts, thought that Dr. Reese had but to admit that he had done wrong, and ask pardon without any mental reservation.

Dr. Reese said that he had intended to make a satisfactory apology. Such was his earnest wish and desire, and he wished to frankly state that he had no mental reservation, neither did he attempt to conceal anything. He made the statement which had been read without reservation and without evasion. [Applause.]

Dr. Conte expressed his entire satisfaction, as did numerous other gentlemen, several crossing to where Dr. Reese was sitting and shaking hands with him.

The committee of the whole then rose, and the chairman reported to the president that the committee had heard and discussed the apology of Dr. Reese, and that they considered that it was "ample, full, complete, and satisfactory."

On motion, the report of the committee was received and adopted.

The case of Dr. Bryan then came up, when it was suggested that his apology should be in writing, he expressing a willingness to make one as ample as was that of Dr. Reese..

Dr. Reese then drafted an apology, but several gentlemen insisted that he should insert the word "regret." Dr. Reese declined, stating that no gentleman would apologize for that which he did not regret, and that he would never be dictated to by any gentleman, even if the prison-door stood open on his right hand, and the stake was at his left hand.

Dr. Wood (who was greeted with loud applause) stated that he had been with the side which had offered the apology, but he did not consider the apology complete without the insertion of the word "regret."

Drs. Bonner, Clark, of New Jersey, Hard, of Illinois, Parker, of New York, and other gentlemen participated in an exciting debate on the necessity of having the word "regret" inserted.

Dr. Reese added the following sentence, "and regrets that he has incurred the displeasure of his brethren." This was not favorably received.

Dr. Boyle, chairman of the committee of arrangements, here announced that arrangements had been made by which delegates who had purchased tickets on their way to the convention over the following roads could return free by exhibiting their cards of membership: Pennsylvania, Wilmington and Manchester, Illinois, Central, Northeastern South Carolina, and Richmond and Petersburg.

The apology of Dr. Reese was again taken up, and discussed with spirit, although there was no manifestation of bad feeling on either side. At length he presented the following:

"The undersigned regrets that he certified to the professional qualifications for Blockley Hospital, Philadelphia, of an expelled member of this body, and hereby offers this apology for his departure from the ethical code."

This was received with loud applause, and on motion of Dr. White, accepted as an ample and satisfactory apology.

Dr. Bryan submitted a similar apology, which was also accepted, and then the committee adjourned until to-day at nine o'clock, A. M., evidently well pleased that this question was finally disposed of.

THIRD DAY.

The President, Dr. Lindsley, having called the Association to order at half-past 9 o'clock, Dr. Grant, of New York, asked leave to present a

complaint against the New York Medical College, but on information by Dr. Edwards, that a Committee on Ethics would be recommended by the Nominating Committee, he withdrew the request.

The appointment during last year of Dr. George Hayward, of Boston, as a delegate to represent the American Medical Association, in kindred societies in Europe, was announced by Dr. Eve.

Medical Education.—Dr. Hamilton, from the Committee of Delegates from medical schools and colleges, to whom was referred the report of the Special Committee on medical colleges, reported the following preamble and resolution:

Fully appreciating the value and importance of the resolution under which they were appointed, but a majority of the gentlemen constituting this committee not being authorized by the medical faculties of the several colleges with which we are connected to act as their representatives in this matter, and therefore regarding it quite impossible to secure a convention of delegates in the interim of the meetings of the association:

Therefore, *Resolved*, That we recommend to all the medical colleges entitled to a representation in this body, that they appoint delegates, especially instructed to represent them in a meeting, to be held at Louisville, on Monday, the day immediately preceding the convention of the American Medical Association, for the year 1859, at ten o'clock, at such place as the Committee of Arrangements shall designate.

The report was accepted, and the preamble and resolution were passed; after which, several gentlemen claimed the floor, but the president decided that the reports of special committees were in order, the reports of committees on Medical Topography and Epidemics having previously been referred to the Committee on Publication without reading.

Dr. Foster Jenkins, of New York, read a report on the Spontaneous Umbilical Hemorrhage of the newly born; which was read and referred to the Committee on Publication.

Marriages of Consanguinity.—Dr. S. M. Bemis, of Kentucky, read an able and learned report on the "Influence of Marriages of Consanguinity upon Offspring.

Stone contributed to the Washington Monument.—Dr. John L. Atlee, from the committee appointed at the annual meeting at Richmond, in May, 1852, to procure a stone with a suitable inscription to be inserted in the Washington National Monument, made a final report. It stated that Mr. Haldy, a marble mason of the city of Lancaster, Pennsylvania, had in his employment a young man, Mr. J. Augustus Beck, a native of Litiz, Pennsylvania, who had given unmistakable evidence of genius as a sculptor. At the suggestion of the late lamented Dr. A. L. Pierson, of Salem, Massachusetts, (made at the meeting in New York, just ten days before his death,) the design of the celebrated painting of Girodet-Tricoson, representing Hippocrates refusing the presents of the

Persian king, Artaxerxes, and his invitation to leave Greece, and reside and practise among her enemies, was selected. This was sculptured upon a block of Vermont marble, with the motto, "*Vincet Amor Patriæ*," and the stone is now at the monument grounds. The entire expense was $1,000, of which one half was paid to the young artist. The amount contributed by members individually was $501.30; the balance was voted from the treasury of the society. Accompanying the report was a letter from the Secretary of the Washington National Monument Association, and a resolution of thanks to the railroad companies by whose liberality the stone was brought from Lancaster to Washington, free of charge. The report was accepted, and the resolution was passed.

Dr. Palmer, of Buffalo, read a report, made by Dr. E. Andrews, of Chicago, Illinois, on the "Functions of the different portions of the Cerebellum."

Dr. Campbell, of Georgia, read a report on "The Nervous System in Febrile Diseases," which was accepted, and referred to the Committee on Publication.

Dr. J. Marion Simms, of New York city, read an abstract of his report on the "Treatment of the Results of Obstructed Labor," illustrated with a series of magnified illustrations.

COMMITTEES FOR THE ENSUING YEAR.—Dr. Edwards, from the Committee of Nomination, offered the following list of committees for the ensuing year, which was accepted, and the committees were chosen:

Special Committee on the Microscope.—Drs. Holsten of Ohio, Dalton of New York, Hutchinson of Indiana, Stout of California, and Ellis of Massachusetts.

Special Committee on Medical Jurisprudence.—Drs. Smith of New York, Hamilton of Buffalo, Crosby of New Hampshire, Purple of New York, and Mulford of New Jersey.

Committee on Quarantine.—Drs. Harris of New York, Moriarty of Massachusetts, La Roche of Pennsylvania, Wragg of South Carolina, and Fenner of St. Louis.

Committee on Surgical Pathology.—Dr. James R. Wood of New York, chairman.

Committee on Diseases and Mortality of Boarding Schools.—Dr. C. P. Mallengly of Kentucky, chairman.

Committee on the varions Surgical Operations for the Relief of Defective Vision.—Dr. Montrose A. Pallen of St. Louis, chairman.

Committee on Milk Sickness.—Dr. Edward A. Murphy of Indiana, chairman.

Committee on Medical Eihics.—Drs. John Watson of New York, Dalton of Massachusetts, Emerson of Pennsylvania, Hamilton of New York, and Gaillard of South Carolina.

Dr. Edwards also reported from the Committee of Nomination, the following resolution, in reference to the restoration of Dr. Bailey:

Resolved, That a committee of nine be appointed by the chair to wait on the Hon. Howell Cobb, Secretary of the Treasury, and respectfully to request the restoration of Dr. M. J. Bailey, as inspector of drugs and medicines for the port of New York.

Dr. Edwards followed his resolution by an elaborate and eloquent argument, giving his opinion of the importance of the office of inspector, and urging that it was obligatory on the association to insist on the reinstatement of Dr. Bailey, as one eminently qualified to discharge its duties.

Dr. Tyler, of Georgetown, rose to reply to the remarks of Dr. Edwards, he acknowledged the important service Dr. Edwards had rendered the profession in procuring in Congress the passage of the law for the inspection of drugs and medicines, but when it was proposed to appoint a committee to wait upon an executive officer of government, and dictate to him, he felt that it would be turning aside from the purpose for which this association was organized.

A rather protracted argument here succeeded, in which substitutes were offered for the first resolution, and in which the following gentlemen engaged: Dr. Bolton of Virginia, Dr. Cox, of Maryland, who offered the following substitute:

Resolved, That the appointment of inspectors of drugs and medicines in the various ports of the United States, should, in the opinion of this association, have regard to the essential, moral, and scientific qualifications of the candidates, and not to considerations of personal favoritism or political bias.

Dr. Tyler, of Georgetown, supported the resolution of Dr. Cox as a fair compromise. He believed that the appointment of the committee would transform the association into a mere political machine, and concluded by strongly urging the passage of the resolution offered by Dr. Cox. Dr. Dunbar, of Maryland, strongly opposed the resolution of the Nominating Committee, and asked if it was the duty of that committee to nominate a candidate for inspector-general of drugs at New York. [Laughter.] The discussion of this question here became very general, and rather noisy, the following gentlemen engaging—Dr. Bachelder of New York, Dr. Parker of Virginia, Dr. Wilcox of Connecticut, Dr. Jewell of Pennsylvania, Dr. Wood of New York, Dr. Rodgers of New York, and Dr. Sayer of New York.

The resolution as amended was then carried by a vote of 79 ayes to 52 noes.

Resolved, That a committee of nine be appointed by the chair to wait on the Hon. Howell Cobb, Secretary of the Treasury, and respectfully to request the restoration of Dr. M. J. Bailey as inspector of drugs and medicines for the port of New York—at the same time disclaiming all political considerations.

Dr. Gibbs, of South Carolina, moved that Professor Henry be requested to favor the association with his views on Meteorology, at such time during the session as he may select: carried.

Dr. Campbell, of Georgia, moved that the Secretary place on record an expression of the regret with which this association has learned the death of Dr. Marshall Hall of London, Dr. Claiborn R. Walton of Augusta, Dr. S. W. Granton, Dr. T. Y. Simmons of Charleston, S. C., Dr. J. K. Mitchell of Philadelphia, and other members deceased, since the last annual session: carried.

Vote of Thanks.—On motion of Dr. Phelps, the following resolutions were passed unanimously, the members rising:

Resolved, That the thanks of this association are eminently due to the Regents and Professor Henry, of the Smithsonian Institution, for the ample and convenient accommodations afforded for the transaction of business.

Resolved, That the Committee of Arrangements are entitled to our praise and highest appreciation of their exertions to promote the comfort of the members and best interests of the association.

Resolved, That to the physicians of Washington and Georgetown and the faculty of Georgetown College we accord the homage of our sincerest thanks for their elegant hospitalities extended to the members from abroad, by which the pleasure of their sojourn here has been so greatly enhanced.

Resolved, That we feel assured that the impressions on the tablet of memory received here, in our national metropolis, in this the first year of the second decade of the association, will long remain an evidence of the urbane attentions received, not only from the Chief Magistrate and other public functionaries of our glorious Union, but of private citizens and the community at large.

Resolved, That the manifestations of union of heart and purpose in the action of this session, inaugurate a new era, and call for devout acknowledgement to Divine Providence, and presage, as we trust, not only a bright future for the association, but also as contributing to the perpetuity and prosperity of our great national confederation.

On motion of Dr. Anderson, of New Jersey, it was unanimously resolved that the thanks of the medical association be presented to Rev. Dr. McGuire and his faculty of the College of Georgetown for their very cordial reception and entertainment of the association at the College yesterday.

Dr. Arnold, of Georgia, then exhibited specimens of a new method of medical preparations of some membrane incomprehensible to the reporter, but which was evidently very interesting to the association.

On motion of Dr. Foster, of Tennessee, it was resolved that after 1860, Dr. Hamilton have the privilege of using his report on "Deformities after Fractures," published in the Transactions, for a work which he proposes to publish.

Dr. Campbell, of Georgia, was not aware, until he had just heard permission granted to Dr. Hamilton, that he had trangressed in republishing in a work a report which he had contributed to the Transactions of the association. [Cries of "regret it," "regret it."] He did regret it, and asked the sanction of the society: which was granted.

Dr. Dunbar moved to reconsider the vote appointing a committee to request the reinstation of Dr. Bailey, and Dr. Morgan seconded it, but as Dr. Parker had been invited upon the platform, the motion was ruled out of order.

Dr. Parker's Chinese Hospital.—Dr. Peter Parker, ex-commissioner to China, was then introduced, and was received with applause. He exhibited some curious specimens of *calculi*, as the results of thirty-eight operations upon Chinese. They were of various shapes and composition, and weighed from a few drachms up to three, seven, and eight ounces, his description of the operations by which these calculi were removed was deeply interesting, and it was gratifying to learn that out of the thirty eight patients all but five or six recovered perfect health.

Dr. Parker proceeded to state that he has treated in China, at the hospital under his charge, fifty-three thousand cases. Pictures of the most curious cases he had brought to this country, and they were on exhibition in the room below. At no very distant period he hopes to place in a permanent form the results of his labors, with illustrations. [Applause.] Among other cases, he had probably performed upwards of a thousand operations for cataract. On one day he operated in sixteen cases, the youngest being a mere child, and the oldest on old lady seventy-nine years of age. She came, led by a servant, submitted heroically to operations on both eyes the same day, and in a fortnight had her sight perfectly restored. [Applause.] In acknowledging a vote of thanks, Dr. Parker said he had among his patients all classes, from members of the imperial family down to beggars. His greatest difficulty had been to persuade his patients that he could not cure all diseases.

Reconsideration of the Dr. Bailey Resolution.—Dr. Dunbar claimed the floor, and urged the reconsideration of the vote appointing a committee to wait on the Secretary of the Treasury, and solicit the reinstation of Dr. Bailey.

Dr. Payne, of Virginia, opposed the reconsideration.

Dr. Tyler advocated it, and asked if this association was formed to wait on executive officers, and to dictate to them who they shall remove, and who they shall appoint. Many gentlemen around him, he was assured, had voted for the resolution without due reflection, and he trusted with confidence in their sober second thought. [Applause.] The press and the profession, he felt confident, would denounce this association if it

entered into the wide field of politics. It was instituted to promote the great cause of science, not to join issue with government. [Applause.]

Dr. Morgan also advocated a reconsideration. He was not a partisan. Although he resides in Washington, he has no personal acquaintance with the President or the Secretary of the Treasury, but he was confident that they would not have made the change without good reason, and it was not the mission of this association to criticise or to attempt to change their views.

Dr. Palmer, after stating how little regard he had for the opinions of the press, inquired as to the present incumbent of the office. Is he capable?

Dr. Watson, of New York, said that Dr. Bailey had had his circulars out since his "rotation," and the subject had been twice before the Academy of Medicine, who have ignored it.

Dr. Burns of Brooklyn, said that he was not a politician, and that he was a personal friend of Dr. Bailey, but he hoped that the vote would be reconsidered.

A member from California relates his experience there on a question as to the superintendent of a lunatic asylum. In his opinion the less the association had to do with politics, or with expressions of opinion on political appointments, the better. (Applause.)

Dr. McNulty, of New York, said that the question had been twice before the New York Academy of Medicine, and twice been voted down. The present incumbent, whom it is sought to oust, is a German by birth and education. He can read the invoices in whatever European language they may be sent, and he makes his own analyses, which it is reported the ex-inspector did not do.

After some "parliamentary" skirmishing, it was decided to reconsider by a vote of 51 ayes to 32 noes. And, on motion, the subject was then indefinitely postponed.

The association then took a recess of two hours, for dinner.

Evening and Closing Session.—The association was called to order at five o'clock, P. M., by Dr. Sutton, one of the vice-presidents, who took the chair.

The amendment to the constitution, proposed at the annual meeting at Nashville, had been made the "special order." They were

1st. Amend the third article of the constitution, in relation to meetings, by inserting after the words "first Tuesday in May," the words "or the first Tuesday in June;" and also inserting after the words "shall be determined," the words "with the time of meeting." 2d. In article 2, omit the words "medical colleges," and also the words "the faculty of every regular constituted medical college, or chartered school of medicine, shall have the privilege of sending two delegates."

Each amendment was separately discussed, and each was lost by a large vote. An amendment proposed at Philadelphia in 1856 providing for the establishment of a permanent secretaryship, was lost by a vote of 53 ayes to 84 noes.

On motion of Dr. Foster, of Tennessee, the secretary was directed to collect all the by-laws, and have them printed in the next volume.

An attempt was made to introduce a motion endorsing the accoustics and ventilation of the new Capitol extensions, but it was ridiculed by Dr. Sayer, and was withdrawn.

Various additional votes of thanks were passed, and, at ten minutes of seven, the association adjourned *sine die*.

The account of the 11th annual meeting presented in the foregoing pages, we have condensed mainly from the very accurate report found in the *Daily Washington Union*, adding such passing comments as the performance of the hurried task would allow. Many of the measures therein developed, receive our hearty approval, while others, did we have time and space, would have received from us, comments conveying a far different opinion.

Whatever may be our *opinion* of the deliberations of the association, all are constrained to admit that it has vindicated its power and influence in the profession all over the land, and the opinion which we expressed some months ago, that "to trangress its wise and benevolent counsels is to suffer loss of position," could not have been more fully verified, than by the results of the session just closed at Washington.

Books, Journals, and Pamphlets received.—We have received a large number of Books, Pamphlets and Journals, besides communications for our own pages, the notices of which, together with almost our entire miscellany, have been excluded by the space devoted to the minutes of the annual meeting of the American Medical Association. We shall endeavor to do justice to these works in our next issue.

Coffee and Lemon Juice in Ague.—M. Von. Holsbeek draws attention to a mode of treatment he has found useful. Infuse an ounce of well-roasted coffee in three ounces of boiling water, and having strained the fluid, acidulate it with lemon-juice. The whole is given at once, five hours before the paroxysm.—'*Presse Belge*,' and *Med. Times and Gaz.*

Local Application in Eczema of the Face in Children.—Dr. Behrend in a note on the treatment of eczema, recommends the employment of the following combination as a remedy for the numerous scales which frequently cover the face of children:—Cod-liver oil, half an ounce; carbonate of soda, half a drachm. Mix.—*Gaz. Hôp*, and *Dublin Hospital Gazette.*

A New Anæsthetic.—The subject of the following letter we deem of such deep interest, in a surgical point of view, that we have inserted it, although we have not space for those comments which its great importance evidently demands. Should electricity take the place of chloroform and amylene, in *Surgery*, how incalculable will be the result of the experiments here detailed.

Electricity in Extracting Teeth. By D. S. Chase, M.D., D.D.S., of Augusta, Ga.

To the Editors of the Southern Medical and Surgical Journal:

Gentlemen,—Having been experimenting with electricity in some of the more painful operations of Dental Surgery, and believing the subject to be new to most of your readers, I send you, in a few lines, the result of my observations made in extracting more than fifty teeth, for different persons, within the last two weeks.

The *First Case* in which I tried it, I removed seven teeth, all firmly set—five molars and two cuspidati or eye teeth. In extracting the first tooth, too much electricity was applied, and the patient complained of pain from the shock, but not from the removal of the tooth. In the second tooth too little was applied, and the tooth itself gave pain. After this, we were able to regulate the quantity, so that neither the electricity nor the extraction of the tooth gave much pain. Patient not at all nervous, and frequently expressed herself highly pleased with the operation. The feeling experienced during the extraction of the teeth, as she expressed it, was a benumbing sensation about the tooth, which appeared to be attached only to the gum.

Second Case.—Extracted six teeth. Patient somewhat debilitated from previous suffering with her teeth, and quite nervous. Suffered considerable pain during the operation, but would not allow one to be extracted without electricity.

Third Case.—Extracted four teeth. Patient suffered but little pain.

Fourth Case.—Extracted a molar tooth, that had been previously broken, for a highly intelligent gentleman from a neighboring village. He was much pleased with the operation, and was very enthusiastic in his praises of electricity as applied to Dental Surgery.

Fifth and last Case, that I will report at present.—Extracted *ten* teeth for an elderly lady. Expressed no fear during the operation, and seemed to treat the affair as a mere trifle, which might be attended to any morning, without much inconvenience.

The general expression by those who have tried it, seems to be in favor of electricity in extracting teeth.

In some of the cases mentioned above, the gums were lanced by the same process, by connecting one pole of the battery with the handle of the lancet, while the patient held the other—the hand of the operator being protected by a silk glove.

I would here suggest that electricity may prove a valuable agent in the hands of the surgeon, in mitigating the pain of surgical operations. Who will try it?

The machine in use by myself, at the present time, is the compound magneto-electric machine, the same as used by physicians for medical purposes; but I have no doubt that voltaic or galvanic electricity will answer the purposes of the surgeon, better than the magneto-electric current, as the shocks of the former follow each other in such rapid succession, as to appear like one continuous current, while the latter is more or less interrupted, causing some trembling, and jerking of the muscles.

How to keep Rooms cool in Summer.—Lord Rosse has denied the absurd prediction, that the approaching summer will be an extraordinary hot one. Still, it may be well that medical men should be forearmed with the means of cooling their own and their patients' rooms. A flat vessel filled with water, and on which are floated branches of trees covered with green leaves, is a very pleasant and efficacious means, and is much employed in Germany. The suspension of Indian matting, previously damped, at the open window, tends much to diminish the heat. The matting may be imitated by any kind of plaited glass.

London Lancet.

Pressure in Phlegmasia Dolens.—In relating the case of a young woman who had suffered from phlegmasia dolens, and in whom the superficial veins continued much swollen, M. Trousseau cautioned his pupils against applying in similar cases firm bandages. The deep-seated veins being obliterated, this enlargement of the superficial ones is a necessary consequence, and compressing them by a firm bandage would completely interrupt the circulation of the limb. A moderate degree of pressure, however, is admissable, as giving support to the walls of the superficial vessels, and preventing their becoming varicose.—*Ibid, and Med. Times and Gazette.*

Death of Dr. R. Q. Dickenson.—We deeply regret that it becomes our duty to record the death of our worthy and now lamented friend, Dr. R. Q. Dickenson, of Albany. The following notice, we (for want of space and on account of its late arrival) have been obliged to *condense* from a well written sketch prepared by one, who, like ourselves, knew him well and loved him well.

Obituary.—Died, recently, in Albany, Baker county, Dr. Roger Q. Dickenson, aged 61 years.

Dr. Dickenson was born in Spottsylvania, Virginia, and was a graduate of the University of Pennsylvania of the year 1826. He was one of the oldest and most successful practitioners in our State, having been for more than thirty years engaged in the humane and benevolent ministrations of our Profession. Some five years ago he was elected President of the Medical Society of the State of Georgia, the duties of which post he discharged with dignity and honor. None enjoyed the annual meetings more than he did, for his heart and soul were fully enlisted in every measure which could advance and elevate the Medical Profession. The medical men of his own community will feel, sensibly, his loss:—there, he was personally and intimately known. Being the oldest physician in the community, he was revered and honored by them all; his kind and gentle manners won their hearts, and they must feel that, in the death of their elder brother, each has lost an able counsellor—a kind and warm hearted friend.

Albany, Dougherty Co.. Ga., May 20th, 1858. S. S. C....., M.D.

SOUTHERN

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ORIGINAL AND ECLECTIC.

ARTICLE XV.

Observations on Malarial Fever. By JOSEPH JONES, A.M., M.D., Professor of Physics and Natural Theology in the University of Georgia, Athens; Professor of Chemistry and Pharmacy in the Medical College of Georgia, Augusta; formerly Professor of Medical Chemistry in the Medical College of Savannah.

[Continued from p. 398 of June No. 1848.]

In the preceding article we stated briefly, some of the difficulties attending pathological and physiological investigations, and acknowledged the imperfections of the present researches. We are about to present numerous analyses of the urine; and before doing this, we would candidly acknowledge the sources of error in attempting to determine the amount of urine excreted during any stated period, as 24 hours. When the bowels are frequently moved, it is almost impossible to ascertain, even approximately, the amount of urine excreted.

When the patient is delirious, and passes his urine and feces in the bed, it is impossible to ascertain either the amount or character of the urine. Even when the bowels are not moved, and the patient retains his faculties and a considerable amount of strength, it often happens that, during the night, the nurse will neglect to attend to the passage, and preservation of the excretions in the proper vessels.

It often happens, from a combination of such circumstances, that the urine of the most fatal, important and interesting cases escapes our examination.

These difficulties, in hospital investigations, cannot readily be overcome, and will often invalidate the conclusions drawn from individual cases. Our duty, then, is to obtain as wide an induction of facts as possible, and thus eliminate or equalize, as far as

possible, the errors, and draw our conclusions, not so much from individual cases as from the whole assemblage of facts. From our copious notes on more than two hundred cases of malarial fever, we have determined to present a condensed statement of those which presented points of interest to the physiologist, pathologist and practitioner of medicine.

Our limits will not permit us to enter into a minute account of the method of analyzing the urine. In view of the numerous excellent treatises upon this subject, accessible to all, this would involve an unnecessary consumption of space and time. We will simply state the method, with full references to the appropriate authors.

The urea was separated in the form of the nitrate,(1) and

(1) Lehmann's Physiological Chemistry, Eng. Ed., vol. i., p. 159. Amer. Ed., vol. i., p. 149.

Mitscherlich in Annalen der Physik und Chemie, Von Poggendorff, Bd. 31, S. 303.

Kidneys and Urine, by J. J. Berzelius. Translated by Boyle & Leaming, M.D. Philadelphia, 1843, pp. 66–83.

Hand Book of Chemistry, by Leopold Gmelin. Translated by H. Watts, Cav. Soc. pub. London, 1852. Vol. vii., p. 363.

Simons Chemistry of Man. Philadelphia, 1846, p. 397.

Becquerel's & Rodier's Pathological Chemistry. Trans. by Speer. Lond. 1857.

The student of medicine desirous of entering into similar investigations upon the urine and blood, will find not only all the details of analysis, but also invaluable information in the following works and articles:—Anleitung zur Qualitativen und Quantitativen Zoochemischen Analyse, Von E. Von Gorup Besanez. Nurnberg, 1854. Anleitung zur Qualitativen und Quantitativen, Analyse des Harns, Von Carl Neubauer. Wiesbaden, 1854. Heintz: Lehrbuck der Zoochemie. Berlin, 1853. Schlossberger: Lehrbuch der Organischen Chemie mit besonderer, Rucksicht, auf Physiologie und Pathologie. Stuttgart, 1854. Robin et Verdeil: Traité de Chimie Anatomique et Physiologique, ou des Principes immeditas Normaux et Morbides que constituent le Corps de l'Homme et de Mammiferes. 3 vols. Paris, 1853. "A Course of Practical Chemistry," arranged for the use of Medical Students, by Wm. Ordling, M. D.. London, 1854. Bird, on Urinary Deposits. Philad. 1854. Bowman's Medical Chemistry. Philad. 1855.

For Leibig's valuable memoir "On Certain Urea Compounds, and a new method of determining the Chloride of Sodium, and the Urea in the Urine," see Ann. der Chem. und Pharm., vol. lxxxv., pp. 289–328. See translation of this memoir in vol. vi. of the Quarterly Journal of the Chemical Society. Limpricht, on the Influence of Allantoin on the determination of Urea by the method of Liebig. Ann. der Chem. und Pharm., vol. lxxxvii., p. 99.

Kletzinsky, "On the Comparison of the Values of the Different Methods of Determining the Quantity of Urea." Heller's Archiv. für Chem. und Mikrosk., p. 252. Jahrgang, 1853.

"A New Method of Determining the Amount of Urea, by Dr. E. Davy." Phil. Mag., June, 1854. Medico-Chir. Rev., Oct. 1854. "The Detection and Estimation of Urea, by Ragsky." Ranking's Abstract of Med. Sciences, 1845. Part II., p. 90. Beiträge zur Kenntniss der Urinabsonderung bei gesunden. Inaugural Abhandlung. Von Aug. Winter. Giessen, 1852. Beiträge zur Kenntniss der Urinabsonderung bei Gesunden schwangern und kranken Personen. Inaugural Abhandlung. Von Friedr. Mosler. Giessen, 1853. Klinische Untersuchungen über den Stoffwechsel, bei gesunden und kranken menschen überhaupt und den durch den Urin insbesondere. Von Prof. J. Vogel. Gottingen, 1853. Studien zur Urologie. Von Dr. F. Fr. Beneke. (Archiv. des Vereins für gemeinschaftliche Arbeiten. Band i., Hefte 3 and 4.) Gottingen, 1853.

every care was taken to secure accuracy in the results. The amounts of the constituents in all these analyses, from the causes previously stated, will be under-rated, and never over-rated.

The urine was always analyzed a short time after its passage. This precaution is necessary in a warm, moist climate, like that of Savannah. In the heat of summer the urea is often, especially in the urine of convalescence, rapidly decomposed into carbonate of ammonia. In one case of malarial fever, where the patient was suffering with a stricture and irritation of the bladder, every trace of urea disappeared from the urine in twelve hours.

I have endeavored, scrupulously, to exclude from these papers, every analysis the result of which was influenced by changes, in the urine, subsequent to its excretion by the kidneys. Uric acid was determined in the usual manner, by precipitation with hydrochloric acid.

The inorganic matters of the urine were determined according to the simple and accurate method of M. Lecanu. The amount of the coloring and extractive matters was obtained by substracting the weights of the urea, uric acid and inorganic matters, from the solid matter of the urine, carefully and accurately determined.

The analyses of the blood were conducted according to the method previously described by the author.

CASE IX.—October 9th, 8 o'clock, P.M. Seaman: age 40, height 5 feet 10½ inches, weight 170 lbs. Auburn hair, blue eyes, florid complexion; sanguine temperament; well developed muscular man. Native of Sweden. Has been in New Orleans, Panama, and other southern ports, but has never been sick before.

This is his first trip to Savannah; has been sleeping on the bay; was taken with chill and fever two days ago, and has suffered much with pain in his head. Yesterday vomited bile. Tongue slightly coated with white fur. Now his skin is in a good perspiration. Twenty minutes ago, his skin felt very hot and dry to the touch. Supposing that his temperature was several degrees above the normal standard, I hastened to the laboratory to obtain my thermometer; I was detained twenty minutes, and when I returned, to my surprise, his skin felt moist and cool under the hand, in comparison with the previous observation.

Pulse.....86 } Temperature of Atmosphere,....72° F.
" " Hand.....100
Respiration...23 } " under Tongue....101°75′

The rise of the thermometer in his hand (the hand as usual was kept carefully closed around the bulb,) was irregular. It rose to 100°, and at this point was stationary for several minutes: it then fell gradually to 98°, and again rose gradually to 100°. In this case we see that the reduction of temperature was simultaneous with the relaxation of the skin and flow of perspiration.

Is the remission of the fever due to the restoration of the functions of the sudoriparous glands, which collectively expose a surface of tubing 1,570,000 inches, or nearly 28 miles in length? Is the morbific agent, or agents, which have disturbed the chemical actions and correlation of the forces eliminated by these glands?

If the intermission is due to the restoration of the functions of the sudoriparous glands, what excited them to action? Is the phenomena connected with the nervous system alone, or with chemical and physical changes in the structure of the morbific agents, and of the blood and secretions and excretions? If the reduction of temperature be not dependent upon the restoration of the functions of the sudoriparous glands, what retarded the chemical actions by which the physical forces are generated? If the chemical actions developing an unusual amount of heat were excited by the introduction of foreign elements, may not the foreign elements themselves have entered into these chemical actions, and been so altered, that they have been for a time rendered inert?

That a special end is accomplished, in malarial fever, by an elevation of temperature is proved by the fact that the cases which manifest the highest temperatures, are as a general rule attended with little or no danger, whilst in those cases, as congestive fever, where there is a depression of temperature, the danger is always imminent.

It is true that the sudoriparous glands have much to do with the regulation of the temperature for the water which they eliminate from the blood during its evaporation, abstracts one thousand degrees of heat from the surface of the body and the surrounding atmosphere. This heat is expended in the mechanical action of keeping asunder the particles of water, and is hence insensible to the thermometer.

The experiments of Dr. Southwood Smith, (2) at the Phœnix Gas Works, and of MM. Berger, Delaroche, (3) Fordice, Blagden, (4) and others, (5) have shown that when animals and man

(2) "Philosophy of Health," vol. II. pp. 391—396.
(3) "Experiences sur les Effets qu'une forte Chaleur produit sur l'Economie." Paris, 1805, and Journal de Physique, tomes lxxiii., lxxi., et lxxvii.
(4) "Philosophical Transactions." 1775.
(5) Magendie's Experiments upon the Influence of Hot air on Animal Life.—Am. Jour. Med. Sciences, January 1845, p. 183.
M. Constantine James, on the effects of the hot moist air of the baths, or

were subjected to great external degrees of heat, the temperature of the body was regulated by the evaporation from the surface of the skin and lungs. When the air was dry, individuals were able to endure, for a considerable length of time, a temperature of from 250 to 350 degrees, without injurious effects, and without any great elevation of temperature. The loss of water from the surface of the body was correspondingly great, and by its evaporation maintained the temperature of the interior at the normal standard. If, however, this evaporation be interfered with, by saturating the air with aqueous vapor, the temperature rose rapidly, and the individuals died in a short time.

The rapidity and force of the circulation and respiration also, have much to do with the increase or diminution of temperature in the active stages and in the intermission of malarial fever. This will be established in future by numerous examples.

Examination of Urine passed one hour after these observations, when the sweating stage was fully established. Reddish orange color, scant. Reaction acid. Specific gravity, 1028.

1000 parts of Urine contained:

Urea	25·145	The amount of Iron appeared to be slightly increased.
Uric Acid	0·661	
Fixed Saline Constituents	16·245	

Microscopical Examination.—After 18 hours, no deposit, reaction still acid. After 60 hours, a light yellow deposit of a few prismatic crystals of triple phosphate, and numerous globular acicular crystals of urate of ammonia, and small globular and elongated vegetable cells and vibrones.

When this deposit was treated with hydrochloric acid, numerous crystals of uric acid appeared under the microscope.

Has no pain upon pressure of epigastrium, but has a tendency to vomit.

℞ Apply sinapism to epigastrium. Calomel grs. xij., sulphate of quinia grs. vi., mix; administer and follow with castor oil in four hours. As soon as fever intermits, give sulph. of quinia grs. v. every three hours, up to grs. xx.

October 10th, 1 o'clock, P.M. Medicine operated well; much better, sitting up; skin and tongue normal; pulse 64; respiration 24. Has taken 20 grains of sulphate of quinia.

℞ Quassia and soda. Full diet.

8 o'clock, P.M. Had a chill one hour ago, which lasted thir-

stoves, of Nero, at Pozzuoli, Gazette Medicale, 27th Avril, 1844. W. F. Edwards on Animal Heat. Cyclopedia of Anatomy and Physioloy, vol. ii. pp. 649—684. John Davy, on Animal Temperature. Philosophical Transactions, 1814. Edinburgh Philosophical Journal, Jan. 1826. See also, Researches Physiological and Anatomical, by Dr. John Davy, London, 1839, vol. i. pp. 141—248. Experiments of Tillet and Duhamel, experiments on the servants of a baker at Rochefoucault in Angoumois. Mém. Acad. Scien. pour 1764, p. 186, et seq. Experiments of Dobson at Liverpool; Phil. Trans. for 1775, p. 463, et seq. Observations on the effects of High Temperatures, by Bell of Manchester. Manchester Mem. vol. i. p. 1, et seq. Currie on application of Water at different Temperatures. Phil. Trans. for 1792, p. 199, et seq. Experiments of Delaroche, Jour. Phys., t. lxiii. p. 207. Nicholson's Journ., vol. xvii. p. 142, 215. Jour. Phys., t. lxxi. p. 289, and t. lxxvii. 1. Lavoisier on Transpiration, Mem. Acad., pour 1790. John Reid on Respiration, Cycloped. of Anatomy and Physiology, vol. iv. pp. 325—368.

ty minutes. His extremities are just recovering their normal temperature, ℞ As soon as fever remits, give sulph. of quinia up to grs. xx. Urine light orange color, scant and concentrated. The amount was not determined on account of the action of the medicine.

October 11th, 11 o'clock, A. M. Had fever all night, and vomited three times. Fever intermitted this morning, at 4 o'clock, A.M. Suffered greatly with pain in his head during the fever. This moderated greatly after the subsidence of the fever. No tenderness of epigastrium; tongue clear and a little redder at its tip and edges than normal.

Pulse 70. Respiration 20. Has taken 10 grains of sulph. of quinia this morning. ℞ Continue sulph. of quinia up to grs. xxv. Diet, beef soup and tea.

Urine passed during fever, of a deep orange color. Specific Gravity 1020. Reaction decidedly acid.

Amount of Urine passed during the last 15 hours, 10200 grains.
" " " hourly " " " 680 "
Calculated amount of Urine for 24 hours,..... 16320 "

ANALYSIS IX.	Urine excreted in 15 hours, grs. 10200 contained, grs.	Calculated am't of Urine for 24 hours, grs. 16320, contained grs.	1000 parts of Urine contained,
Uric Acid,.....	0·800	1·280	0·078
Fixed Saline Constituents.....	97·000	155·200	9.509

We see that, notwithstanding the diminution of the uric acid under the action of the sulphate of quinia, the chill and fever returned.

After standing 40 hours, the urine let fall a moderately heavy deposit of triple phosphate and vegetable cells.

Oct. 12th, 11 o'clock A.M. Says that yesterday afternoon, between the hours of 3 and 6 o'clock P.M., he "had cold chills running over his body, which did not, however, amount to a regular shaking chill." These chilly feelings were not followed by fever, but by a profuse sweat.

Pulse 76. Respiration 20, soft and gentle. Tongue clean; skin moist and cool. ℞. Quassia and soda. Snake-root tea. Full diet.

Urine passed during the last 24 hours of a deep orange color, with a heavy light-yellow deposit of triple phosphate and vegetable cells. Sp. Gr. 1020.

Amount passed during the last 24 hours, grains 12,240
" " hourly, " 510

ANALYSIS X.	Urine excreted in 24 hours, grs. 12,240 contained grs.	1000 parts of Urine contained
Uric Acid,.....	1·200	0·098
Fixed Saline Constituents,..	48·000	3·921

The uric acid is still far below the normal standard.

8 o'clock P.M. Has no fever; skin moist and cool; pulse regular. Urine orange colored, and of high specific gravity.

Oct. 13th, 11 o'clock, A.M. Up and dressed. Says that he "had no fever last night, but did not rest well; his dreams troubled him. After rising this morning suffered with vertigo, and

vomited mucus." Tongue normal; skin cool; pulse 60; respiration 16.

Amount of Urine passed during the last 15 hours, grains 4136. } Orange color'd.
Calculated amount for 24 hours,..... " 6617. } Specific gravi-
Amount of Urine excreted hourly,..... " 275.7 } ty 1034.

Reaction, after standing 15 hours, decidedly alkaline. NO_5 and Hcl. produced a powerful effervescence by the liberation of the carbonic acid from the carbonate of ammonia resulting from the decomposition of the urea. Up to this time the reaction of the urine, after standing the same length of time, has been acid.

Uric acid in urine of 15 hours, (grs. 4136).....0·800
" " Calculated amount of urine for 24 hours, (grs. 6617) 1.280
" " 1000 parts of urine,.....0·193

A few hours after its deposition the urine let fall a heavy light-yellow deposit of penniform and prysmatic crystals of triple phosphate and globular and elongated vegetable cells. The weather has been damp and cloudy for two weeks, and the wards of the hospital are crowded with patients, and this will account for the rapid propagation of these vegetable organisms. This patient left the hospital on the succeeding day.

CASE X.—October 5th, 11 o'clock A.M. American seaman, age 16; weight 125 lbs.; light brown hair, blue eyes, florid complexion; sanguine temperament. From cutter Taney, which has been lying at the ship-yard in the low lands east of the city. Four nights ago he slept on the Savannah river in an open boat. Has not felt well since, and thinks that this was the cause of his sickness. The next morning he felt badly; had pains in his bones and back, but no chill. These uncomfortable feelings were followed by fever, which intermitted yesterday morning. This morning he had a slight chill, followed by fever.

Has high fever now. No tenderness upon pressure of epigastrium, Pulse 120. Respiration 40.

Temperature of Atmosphere, 72° F. } Skin hot, dry and pungent to the
" " Hand,..... 105°75′ } hand; lips parched and dry; tongue
" under Tongue,.... 106° } red, dry, and rough to the feeling.

Reaction of saliva acid.

Here is a bounding, rapid pulse—full, heaving, rapid respiration, and a correspondingly high temperature. These symptoms, together with the hot, pungent skin—dry, parched lips—red tongue, and flushed face, although striking, as a general rule, should never alarm the practitioner, as long as they are not complicated with obstinate vomiting, or cerebral symptoms.

In cases of malignant (congestive) malarial fever, on the other hand, there is, as far as my observations extend, a want of co-ordination between the actions of the circulatory and respiratory systems, and the rapidity and character of the chemical changes. The heart attempts to propel the blood—it beats rapidly, (flutters 140 to 160 times in a minute,) but the blood does not flow readily through the capillaries, because the chemical changes are in a great measure arrested, and in many cases perverted. In the present case, on the other hand, there is a correspondence in all the actions, the rapid circulation and respiration are attended with correspondingly rapid chemical changes and high temperature.

℞ Calomel grs. viij., castor oil in 4 hours. ℞ Bicarbonate of potassa, 3iv. Citric acid 3ij., water f℥xxiv., mix and drink ad libitum during fever. Diet—Gruel and flaxseed tea.

℞ As soon as fever remits, give sulp. of quinia grs. v. every three hours, up to grs. xx.

October 6th, 1½ o'clock, P. M. Says, that he is much better, feels very well, and has no pain anywhere. Medicine operated twice, freely. No tenderness upon pressure of epigastrium. The fever intermitted last night, and he rested well. Tongue moist, soft, and clean; papillæ slightly enlarged and distinct; skin moist and relaxed. Pulse 64. Respiration 20.

Temperature of Atmosphere, 73° F.
" " Hand.....94°5′
" under Tongue.....99°

Urine light orange color. Sp. Gr. 1022. Reaction of saliva acid. Has taken 15 grs. Sulph. of quinia.

℞ Sulph. of quinia grs. v.

October 7th, 1½ o'clock, P. M. Decidedly better, up and dressed. Tongue clean and normal. Pulse 62. Respiration 20.

Temperature of Atmosphere, 72° F.
" " Hand.....94°75′
" under Tongue.....99°20′

℞ Snakeroot tea, tablespoonful every four hours.

℞ Quassia and soda. Full diet.

Amount of urine passed during the last 24 hours, grs. 8240. Sp. Gr. 1030. Am't of urine passed hourly grs. 343·3. Reaction acid when first voided. In 16 hours the reaction changed to alkaline, and a heavy light yellow deposit was thrown down.

Octr. 8th, 2 o'clock, P.M. Continues to improve. Tongue and skin normal. Pulse 52. Respiration 24.

Temperature of Atmosphere, 73° F.
" " Hand.....98°2′
" under Tongue..... 99°5′

℞ Continue quassia and soda.

Amount of urine passed in the last 24 hours, grs. 8721. Sp. Gr. 1026. Amount of urine passed hourly, grs. 363.3. Reaction changed from acid to alkaline in 14 hours. The patient states that he ordinarily drinks but a small quantity of water, and hence the concentrated state of his urine.

CASE X.....Table 3.

Month.....	Day of Month	Hour of Day.	Medicine.	State of Skin.	State of Tongue.	Pulse.....	Respiration..	Temperature of Atmosphere..	Temperature of Hand.....	Temperature under Tongue....	Urine excreted in 24 hours...	Urine excreted hourly..	Spec. Gravity of Urine...
Oct.	5th	11 A.M.	Cal. grs. viij. Cas. Oil in 4 hrs. Cit. Potassa mixture,	Hot, dry.....	Red, dry, rough..	120	40	72° F.	105°75′	106°	.....	.....	....
"	6th	1½ P.M.	Sulph. of Quinia grs. xv.	Moist, soft & relaxed,	Moist, soft and clean,	64	20	73°	94°5′	99°	.....	.....	1022
"	7th	1½ "	Sulphate of Quinia grs. v.	Normal.....	Normal.....	62	20	72°	94°75′	99°20′	8240	343.3	1030
"	8th	2 "	Snakeroot Tea.	"	"	52	24	73°	98°2′	99°5′	8721	363.3	1026
"	9th	12 M.	Quassia and Soda.	"	"	52	24	73°	98°2′	99°5′	15912	663.8	1024
				"	"								

October 9th, 12 o'clock, M. Has been walking about the Hospital grounds. Pulse 52. Respiration 24.

Amount of urine passed during the last 24 hours, grs.....15912
" " " " hourly..... " ..... 663·8
Reaction alkaline in 10 hours. In 16 hours threw down a heavy light yellow deposit. Sp. Gr. 1024.

The foregoing table (Case X., Table 3,) will give a condensed view of the phenomena.

CASE XI.—American seaman, native of Maine; weight 140 lbs. height 5 feet 8 inches; age 19; light hair and blue eyes; fair complexion. Has been in Savannah for three weeks. Was taken with chill, followed by fever, yesterday at 12 M. Had another chill this morning at 4 o'clock A. M.

October 10th, 11 o'clock A. M. Has a high fever now, and complains of pain in his head and bones. Skin very hot, but moist. Pulse 112; respiration thoracic, labored; tongue slightly coated with fur.

℞. Calomel grs. x, Sulph. of quinia grs. vi. Mix, and administer immediately, and follow with castor oil in four hours. ℞. Soda powders.

7 o'clock P. M. The fever still continues unabated. Pulse and respiration still greatly excited. Urine clear orange colored. The urine excreted during the febrile excitement of the milder forms of malarial fever, is generally of a lighter color than that of the intermission, or of remittent fever. Specific gravity 1022. Nitrate of urea clear, silvery. Reaction of urine decidedly acid.

Amount of urine excreted during the last 10 hours, grains 9198.
Calculated amount for 24 hours,..... " 22075.
Hourly amount of urine excreted,..... " 919.

ANALYSIS XI.	Urine excreted in 10 hours, grs. 9198 contained grains	Calculated amount of urine for 24 hours, grs. 22075 contained grains	1000 parts of urine contained
Urea, ...	222·520	534·048	24·843
Uric Acid,.....	3·960	9·504	0·430
Fixed Saline Constituents,	87·300	209·520	9·492

Microscopical examination of this urine which was excreted during high fever. After standing 72 hours the urine still retained its acid reaction. After standing 72 hours, there was a small cloudy, mucus-like deposit. Under the microscope, this consisted of nothing but vegetable cells.

October 11th, 1 o'clock P. M. Medicine operated freely. Complains of great weakness. Still has pain in his head. Tongue moist, soft, and slightly coated with white fur. Papillæ red, enlarged and distinct. Skin cool and moist. Pulse 74. Respiration 26. Has taken 10 grains of the sulph. of quinia.

℞. Continue sulph. of quinia up to grs. xx. Diet, beef soup, gruel and tea. On account of the action of the medicine, the whole amount of urine was not preserved. Specific gravity 1027. After standing 36 hours, its reaction changed from acid to alkaline, and a moderately heavy deposit of vegetable cells, with a

few crystals of triple phosphate and urate of soda, were thrown down. Hydrochloric acid showed the presence of uric acid in the deposit. It is probable that these vegetable cells, in many cases, have much to do with the fermentation of the urine, for this change takes place most rapidly in damp warm weather, which is favorable to the growth of these cells.

Color of urine orange.

ANALYSIS XII. { 1000 parts of urine contained:
Uric Acid.....0·194
Fixed Saline Constituents.....16·508

October 12th, 11 o'clock, A.M. Much better, has no pain in his head; still complains of weakness. Skin cool and moist. Pulse 72, regular. Respiration 20.

℞ Quassia and soda. Snakeroot tea. Full diet.

Amount of urine passed during the last 7 hours, grs. 3580 { Sp. Gr. 1023.
" " " " hourly..... " 511·4 }

Reddish orange color. Reaction acid. After 48 hours the reaction was still acid, and it was without deposit.

Calculated amount of urine for 24 hours, grs. 12177.

ANALYSIS XIII.	Urine excreted in 7 hours, grs. 3580, contained, grains,	Calculated am't urine for 24 hours, grs. 12177 contained, grains,	1000 parts of urine contained,
Urea.....	132·068	452·729	39·207
Uric Acid.....	1·750	5·999	0·488
Fixed Saline Constituents.....	21·700	74·387	6·060

8 o'clock, P. M. Continues to improve. Skin soft and normal. Pulse 64, normal. Respiration, normal. Urine, straw-colored. Specific Gravity, 1020.

Amount passed in the last 9 hours.....grs. 5100
" " hourly..... " 566.6

Oct. 13, 11 o'clock, A.M. {
Am't of urine passed in the last 15 hours, grs. 5120
Calculated amount for 24 hours..... " 8192
Urine excreted hourly..... " 341·3
Am't of urine excreted in the last 24 hours, " 10220
" " " hourly..... " 425·8

Sp. Gr. 1024. Color normal. After 24 hours no deposit. Reaction acid.

ANALYSIS XIV.	Urine excreted in 15 hours, grs. 5120, contained, grains,	Calculated am't urine for 24 hours, grs. 10220 contained, grains,	1000 parts of urine contained,
Uric Acid.....	2·750	4·400	0·537
Fixed Saline Constituents.....	46·000	73·600	8·984

In this case, considering the conditions of perfect rest, and almost entire deprivation of food, the urea was increased in quantity, during both the fever and the intermission. The amount of uric acid was diminished under the action of the sulphate of quinia.

CASE XII.—Irish laborer; stout, well made man, remarkably large chest; brown hair; florid complexion; weight 192 lbs.; height 5 feet 8¼ inches. Has been in America five years. Re-

sided in New York city four years; and during the last twelve months has resided in Savannah. During the summer has been working along shore, and running up and down the Savannah river in a flat.

August 27th, 1857. Entered the hospital with a quotidian. For several hours after his entrance, was stupid—could not answer coherently. Pulse 104; respiratiou 24, labored, thoracic. Tenderness upon pressure of epigastrium. Tongue slightly furred, but normal in color and moist. The warm bath, cut cups to the epigastrium and a purgative, aroused him from his stupor. On the next day, his pulse was 104; respiration 38; temperature of hand 102, and skin hot, but moist. Sulphate of quinia was freely administered during the intermission of the fever. Had no retnrn, and left the hospital in a few days. Returned to the same miasmatic situation on the Savannah river.

Entered the hospital again Sept. 17th, 1 o'clock P. M., with high fever, which had been preceded by a chill last evening. Twelve grains of calomel and six grains of sulph. of quinia were administered. The fever intermitted during the night, and twenty grains of sulphate of quinia was administered, in five grain doses, at intervals of three hours. This did not arrest the chill, which came on the next day, Sept. 18th, at 11 o'clock A.M. 2 o'clock P. M. Chill is just going off.

Pulse 112. Respiration 28.
Temperature of Atmosphere,..... 90°5′ F.
" " Hand,..... 100
" under Tongue,..... 104

℞. Soda powders. As soon as fever remits give sulphate of quinia grains v, every three hours, up to grains xx.

September 19th, 2 o'clock P. M. Complete intermission of fever. During the last 38 hours has taken 46 grains of the sulphate quinia.

Pulse 68; Respiration 24.
Temperature of Atmosphere,..... 91° F.
" " Hand,..... 97°5′
" under Tongue,..... 99

Amount of Urine passed during the last 24 hours, grains 18,144
" " " " hourly,..... " 756

Reaction acid. Sp. Gr. 1008, clear, limpid—color a shade higher than normal.

ANALYSIS XV.	Urine excreted in 24 hours, grs. 18144 contained grains,	1000 parts of Urine contained,
Water,.....	17626·878	971·497
Solid Matters,.....	517·122	28·503
Urea,.....	226·980	12·584
Uric Acid,.....	2·880	0·158
Extractive and coloring matters,	231·406	12·290
Fixed Saline Constituents,.....	53·856	2·969

There was no return of fever, and the patient was discharged. He obtained employment upon a steam-tug, which plied up and down the river, and slept on board at night. Was taken with a chill, followed by high fever, on September 29th.

October 2nd. Has just entered the Hospital, 2 o'clock, P.M., and is shaking with a chill. Pulse 120 in the sitting posture. Respiration 22 in the sitting posture, labored, thoracic.

Temperature of Atmosphere....79° F.
" " Hand.....89°
" under Tongue.....102°25'

Lips and hands purplish, he is shivering violently: hands feel very cold. The intermissions between the chills have been about 16 hours. ℞ Mustards to extremities. ℞ Spts. of Mindererus and brandy and snakeroot tea, of each a tablespoonful every half hour until reaction is established. ℞ Calomel grs. xii., sulph. of quinia grs. vii., mix and administer as soon as reaction is established, and follow with castor oil in four hours. ℞ Sulph. of quinia grs. v. every three hours, up to grs. xxv., commence as soon as there is the slightest tendency to a remission.

October 3rd, 2½ o'clock, P.M. Mustards and stimulants cut short the chill, and hastened the febrile action. Medicine operated well, and he feels much better. Has taken 22 grains of sulphate of quinia. Complains of ringing and pain in his head. Pulse 100, full. Respiration 26, thoracic, labored.

Temperature of Atmosphere....77°6'F.
" " Hand.....105°
" under Tongue.....106°

Tongue red at tip, but moist and soft. Reaction of saliva, slightly acid. Skin dry.

℞ Stop sulph. quinia until the fever intermits. ℞ Soda powders. Diet, gruel.

October 4th, 2 o'clock, P.M. Has no fever: feels much better. Pulse 58. Respiration 20, regular and gentle.

Temperature of Atmosphere....76° F.
" " Hand.....96°5'
" under Tongue.....98°5'

Urine of a deep orange color, and decided acid reaction. Am't passed in the last 24 hours, grs. 14112. Am't passed hourly, grs. 588. Sp. Gr. 1008.

Says that during the night he was in a profuse perspiration. Has taken 15 grains of the sulphate of quinia this morning.

October 5th. Has had no chill.

℞ Quassia and Soda. Urine reddish orange color. Sp. Gr. 1016.
Amount of urine passed in the last 24 hours.....grs. 15290
" " " hourly..... " 635

Recovered sufficiently to act as nurse and servant about the Hospital. Although apparently well and capable of much muscular exertion, this patient complained of a continual pain in his head.

October 14th, 2 o'clock, P.M. Chill came on at 11 o'clock, this morning. Now has high fever. Pulse and respiration much accelerated, and skin hot.

℞ Calomel grs. xii., sulph. of quinia grs. vi., castor oil in four hours.
℞ Citrate of potassa mixture during fever.

October 15th, 2 o'clock, P. M. Apyrexia complete. Skin relaxed and cool. Pulse and respiration near the normal standard.

Urine excreted during the febrile excitement, normal in color. Specific gravity 1002. Amount of this urine voided during the last twelve hours, grains 35,070. Says that "during the night he

drank large quantities of water, and felt a constant desire to urinate."

ANALYSIS XVI.	Grains 35070 of Urine excreted during 12 hrs. of febrile excitement, contained grs.	1000 pts. of Urine contained
Urea,	166·005	4·743
Uric Acid,	A trace—few small crystals.	A trace.
Fixed Saline Constituents,	58·360	1·696

This attack also yielded readily to the sulphate of quinia, and up to the time that I resigned the charge of the Savannah Marine Hospital and Poor House (October 20th), this patient had had no return of fever.

This case presents several points of interest. The phenomena of the cold stage have been noticed and compared with similar phenomena in a former article. (See page 396.) At the present time we will call attention to the fact, that during the febrile excitement the uric acid diminished greatly in amount, with and without the action of the sulphate of quinia, and in the last analysis (xvi.) disappeared almost entirely, notwithstanding that only vi. grains of sulph. of quinia had been administered, and that in conjunction with an active purgative. The following cases will show that the uric acid is frequently diminished during the febrile excitement of intermittent fever, independently of the action of the sulphate of quinia.

CASE XIII.—Irish laborer, age 40; height 5 feet 8 inches; weight 145 lbs; brown hair; grey eyes; sallow complexion; occasionally indulges too freely in ardent spirits. Was in the hospital ten days ago with intermittent fever. After leaving the hospital, he obtained work along the river, at Fort Pulaski, and was much exposed to the sun. Was taken with pains in his head and back, and fever, yesterday afternoon at 4 o'clock P. M. Now, Aug. 17th, 12 o'clock M., there is an intermission. Pulse 66, respiration 20, skin moist and cool, tongue slightly furred. ℞. Castor oil.

Aug. 18th. Complains of great thirst, and pains in his head and back. Tongue coated in the middle with yellowish fur, pointed and red at the sides and tip; skin hot and dry.

Pulse 100. Respiration 36. { Temperature of Atmosphere..... 90° F. " " Hand,..... 106 " under Tongue,..... 106

℞. Calomel grs. vi, Tartrate of Antimony gr. i, Nitrate of Potassa grs. xxx. Mix, and divide into six powders—one powder every three hours. 8 o'clock P.M. Skin hot, but softer, with a tendency to moisture. Pulse 104; respiration still thoracic and labored.

Aug. 19th. Fever intermitted this morning about 2 o'clock A. M. Now, 12 o'clock M., pulse 70 to minute, soft and normal. Respiration 22, normal.

Temperature of Atmosphere, 90° F. { Tongue normal in size, papillæ not
" under Tongue,... 98 { enlarged, covered with yellowish fur.

Urine passed last evening and night, during the fever, clear, of a light yellow color, resembling the urine of hysterical females. This resemblance extended also to its density. Specific gravity 1005. Amount passed during six hours of febrile action, grains 7035. When one thousand grains were carefully tested for uric acid, only a small trace, just evident to the eye, but inappreciable in weight, was exhibited, after the most careful manipulation.

Urine passed this morning, after complete subsidence of febrile action, orange colored. Sp. Gr. 1014. When concentrated, it exhibited the extractive matter in much larger amount than in the urine of fever.

As a general rule, the extractive and coloring matters are less abundant during the active stage of intermittent fever, than during the intermission. They appear to be consumed during the active chemical changes of fever. The nitrate of urea formed from the urine excreted during the active stages of intermittent fever, is silvery white. The nitrate of urea formed from the urine excreted during the intermission is dark, discolored with coloring matter, and the crystals are not so well formed. The former kind of urine, when evaporated and concentrated, generally has a yellowish or brownish color, whilst the concentrated urine of the intermission, assumes the color of a very strong decoction of over-parched coffee.

Amount of urine passed during 7 hours of the intermission, grs. 6084
Uric Acid in " " " " " " 0.48
Uric Acid in 1000 parts of urine, 0.08

The microscopical examination of these specimens of urine resembled in most respects, the examinations of urine excreted under similar circumstances.

℞ Sulph. of quinia and snakeroot tea. ℞ Cut cups to small of back.

August 20th. Complains of pain in his back, and restlessness. Skin moist, tongue slightly coated with white fur, flat, papillæ not enlarged. Pulse 86. Respiration 27.

Urine high colored, Sp. Gr. 1017. { Temperature of Atmosphere..87°F.
" " Hand.....100
" under Tongue...101

Amount of urine passed during the last 24 hours,.....grs. 14120
" Uric Acid excreted " " " " ..... " 5.600
" " " " in 1000 parts urine 0.400

August 21st. Much better. Pulse 72. Respiration 17½.

Urine normal in color. Sp. Gr. 1009 { Temperature of Atmosphere..80°F.
Amount passed during the last { " " Hand.....96
24 hours.....grs. 14126 { " under Tongue....98

Heavy deposit of prismatic crystals of triple phosphate. When held in the sun-light, the urine appeared to be glittering with thousand particles of bright shining silver.

August 22nd. Skin, pulse, tongue, respiration, and circulation, normal. Urine normal in color. Specific Gravity 1011.

Amount excreted during the last 24 hours.....grs. 11132
Uric Acid " " " " " ..... " 5.500
" " in 1000 parts of urine..... " 0.500

Concentrated urine of a dark, almost black color.

CASE XIV.—American seaman, age 40; weight 160; height 5 feet 9 inches; florid complexion; light hair; sanguine nervous temperament. Has been in the Hospital for two months, with stricture of the urethra. There were several strictures, and the passage of the catheter painful and difficult.

The urethra and bladder were so irritable, and the sufferings of the patient so great, that the catheter could be passed only at intervals of several days. The passage of the catheter was always followed by an attack of chill and fever. During the last two months, this patient was treated for five attacks of intermittent fever, each one of which succeeded, and appeared to have been excited by the irritation of the bladder and urethra.

The Savannah Marine Hospital and Poor-house is situated in a malarious district. Three hundred yards to the southeast opens a large sewer from the city, and a short distance beyond, where this sewer discharges its contents, is a body of low, swampy land. The situation of the Hospital is also lower than that of a portion of the city, and during a hard rain, a large body of water flows down and accumulates in the street between the hospital and the park. This statement is farther sustained, by the fact, that nearly all the inmates of the hospital suffering with other diseases, even the consumptives, were attacked during this season with malarial fever. Although this patient was not acclimated, still, in health, the dose of malaria was not sufficient to produce general disturbance of the chemical actions and physical and nervous forces. Whenever his system was excited and enfeebled by the irritation of the urethra and bladder, then the characteristic phenomena of the action of the malarial poison were manifested.

October 11th. This patient left the hospital several days ago, became intoxicated, and slept all night in the open air. He was taken to the guard-house by the mounted police, and remained there until this morning, when he was sent to the hospital in a state of great febrile excitement. Says that he "had a severe chill this morning at 9 A. M., which lasted four hours, and was attended with vomiting. Pulse 140, full, bounding. Respiration 32, thoracic, panting. Skin hot, pungent; face flushed. The temperature was not determined, but it must have been at least 107° under the tongue. Urinary secretion abundant, and orange colored during the febrile action. Specific gravity 1008. After careful manipulation, with more than 1000 grains of urine, only a trace of uric acid was discovered.

The decomposition of the urea was far more rapid in this case, than in any other which I have thus far examined. Every trace of urea disappeared in 24 hours. This rapid change was due to the catalytic actions of the perverted secretions of the urethra and bladder.

[*To be continued.*]

ARTICLE XVI.

Tapping in Ovarian Dropsy. By R. McDaniel, M. D., of Laurens District, So. Ca.

Mrs. B., 34 years of age: of strong constitution—the mother of seven children—was attacked with ovarian dropsy in 1841; died the 4th of January, 1858, making sixteen years from the commencement of her disease to the termination.

Mrs. B. was treated by several experienced physicians, for upwards of two years. The accumulation, still increasing, and the disease becoming more alarming, a consultation was called November 10th, 1843, and the operation of tapping was performed, for the first time, by Dr. R. C., with the evacuation of thirteen quarts of water. From that time to the termination of the case, she was tapped two hundred and nineteen times, with the evacuation of four hundred and ninety-five gallons of water.

Dr. R. C. continued to perform the operation of tapping, for a number of times, when the instrument was given up to the Rev. Mr. B., her husband, a very intelligent man, who performed the operations up to the time of her death, and who kept a correct statement of the number of times that she was tapped, and the amount of fluid evacuated at each operation.

Mrs. B. gave birth to two daughters during her illness—the first one, March 22nd, 1843, which lived and did well; the second, was born June 19th, 1845, which lived a few hours, and expired; the operation being performed twelve times up to this date.

Four years previous to her death a tumour made its descent into the vagina, filling the whole vagina, which interfered very much with the convenience of the patient in a sitting position. A physician was called in—the tumour, or sack, was pierced, with the evacuation of eight quarts of water, to the great alleviation of the patient. During her illness, she was tapped twenty-nine times, per vaginam, yielding from five to twelve quarts of water at an operation.

For the last few years, being the family physician, and being called to see Mrs. B., who suffered much in the latter period of her disease, I found that, after the operation of tapping, inflam-

mation of the sack had ensued several times, but was combated, successfully, by a strict antiphlogistic treatment—inflammation ensuing again after the two hundred and eighteenth operation, proved rapidly fatal.

At the earnest solicitation of the patient, she was tapped a few hours before she expired.

I report this case to the Profession, on account of the frequent number of tappings, and the aggregate amount of water that was evacuated. As far as my knowledge extends, such a case is rare, if it does not exceed any on record.

ARTICLE XVII.

Remarkable Case of Malformation. Reported by WM. A. GREEN, M. D., of Starkville, Ga.

Was called to Mrs L——, Monday, January 5th, 1858. Had been in labour with her second child. Nothing unusual occurred during gestation or parturition. She gave birth to a child, over the average size, which cried lustily, seeming to indicate every function was regularly and properly performed. Upon a close examination, the following deformities were found to exist:

The spine began a curvature at the superior third of the cervical vertebræ, in a direction towards the right hypochondrium, to the top of the sacrum. The concavity of this curvature was filled with two or three sac-like appendages, containing, apparently, a fluid and gas, movable and compressible. "A want of the spinous processes of three or four contiguous vertebræ, is not a very uncommon species of monstrosity." "This constitutes *spina bifida*." "There is, usually a soft, fluctuating tumour in the situation of the malformed bones, caused by water, contained within the sheath of the spinal marrow."—Vide Ramsbothams Obstetrics. (Keating.) Appendix M. p. 622. Below, upon each side of the sacrum, were two appendages, resembling the mammæ of woman. In front, between the point where the umbilicus was attached, and the symphisis pubis, was a protrusion of intestines, within the peritoneal sac, reducible by pressure, but returning when removed. Immediately under this

hernia, the urine trickled, continuously, from two or three small openings, which could not be entered by the smallest probe. Below this, and hanging pendent from the *middle of the symphisis pubis*, were the testicles, *perfectly* formed. There was no trace, nor any portion of the penis. Behind the symphisis pubis, in juxta-contact, and at the extreme *anterior* portion of the perinæum, was an anus, well formed, through which the fæces passed. About an inch and a half behind this, at the point of the os coxcygis, was another anus, that, upon examination, proved to be imperforate—a cul de sac.

The face of the infant, when first born, was perfectly black, but is changing to a mulberry hue. Numerous marks are upon its body, such as are frequently seen upon children. Every other portion of the child seems perfectly and symmetrically developed. Its bowels are regular; it is healthy, and rapidly growing. The complete, entire, absence of the penis, or *any portion of it*—the unusual, unheard-of positions of the anus, testicles and anomalous passage of the urine, are extremely remarkable and interesting. The bladder has no urethra, through which to pass its urine, so these apertures must come in direct contact with, and even enter the fundus of the bladder.

Acclimation; and the Liability of Negroes to the Endemic Fevers of the South. By E. D. Fenner, M. D., Professor of Theory and Practice of Medicine, N. O. School of Medicine.

In the last (*March*) number of that influential and widely-circulated journal, the *North American Medico-Chirurgical Review*, we find an extract from the work of Nott and Gliddon, on the *Indigenous Races of Mankind*, expressing observations and opinions on the above subjects so entirely different from our own, and as we believe, so wide of the truth, that we have concluded to invite the special attention of Southern physicians to them, with the view of ascertaining, if possible, to what extent such opinions prevail. We do this in no captious spirit towards our talented and esteemed friend, Dr. Nott; but solely for the purpose of eliciting *truth* on a subject of vital importance. Constituted as men are, they cannot be brought to see things in the same light, nor to reason alike from given premises; yet there must be *truth* on one side or the other in all such discussions, and when it cannot be satisfactorily demonstrated, we have to receive

as truth the concurrent observations and conclusions of the largest number of equally competent observers and thinkers. The following is the extract alluded to:

"The fact is so glaring, and so universally admitted, that I am really at a loss to select evidence to show that there is no *acclimation* against the endemic fevers of our rural districts. Is it not the constant theme of the population of the South, how they can preserve health? and do not all prudent persons, who can afford to do so, remove in the summer to some salubrious locality, in the pine-lands or the mountains? Those of the tenth generation are just as solicitous on the subject as those of the first. Books written at the North talk much about acclimation at the South; but we here never hear it alluded to *out of the yellow-fever cities.* On the contrary, we know that those who live from generation to generation in malarial districts become thoroughly poisoned, and exhibit the thousand Protean forms of disease which spring from this insidious poison.

"I have been the examining physician to several life-insurance companies for many years, and one of the questions now asked in many of the policies is, '*Is the party acclimated?*' If the subject lives in one of our Southern seaports, where yellow fever prevails, and has been born and reared there, or has had an attack of yellow fever, I answer, '*Yes.*' If, on the other hand, he lives in the country, I answer, '*No;*' because there *is no acclimation against intermittent and bilious fevers, and other marsh diseases.* Now, I ask if there is an experienced and observing physician at the South who will answer differently?"

Dr. Nott here proclaims that "*there is no acclimation against the endemic fevers of our rural districts,*" and boldly asks "if there is an experienced and observing physician at the South who will answer differently?"

With all due deference we feel bound to reply that there is at least one, and we believe *thousands*, not only of physicians, but planters, too, who differ with him on this question. We were born and raised in the South, and have practiced medicine in the country, in villages, and in the city of New Orleans. We have been a planter also, and have had no ordinary opportunities to observe the effects of acclimation, not only on the white and black races of men, but also on the lower animals, and we must express the opinion, that, *but for the attainment of a greater or less degree of acclimation*, the extensive malarious region of the Southern and Southwestern States never could have reached its present state of population and improvement. So far from the fact being "glaring and universally admitted that there is no acclimation against the endemic fevers of our rural districts," as is maintained by Dr. Nott, we contend that exactly the converse opinion obtains; hence the additional value attached by all practical men

in these parts, both country and city, to the *acclimated* negro, horse, ox and milch cow. Perhaps it would not be going too far to say that even the dogs, turkeys and chickens have to undergo acclimation before they can do well here.

We thought the fact was universally admitted that all immigrants from more Northern regions to the South were very liable to suffer from the endemic fevers, for the first two or three years of their residence, but that after that period they obtain comparative immunity, and in the course of time may enjoy as good health here as they did where they came from, and some of them *much better*. They become habituated to the climate and its diseases, and may live as long as the *creoles*, or natives, who certainly make no contemptible display of longevity in the mortuary statistics of the country.

There appears to be a slight inconsistency in some of the remarks of Dr. Nott respecting the *acclimation of negroes* and their liability to the endemic fevers of the South. In one place he says negroes are "comparatively exempt from all the endemic diseases of the South." In another—"The acclimation of negroes, even according to my (his) observation, has been put in too strong a light." * * * * "They never become proof against intermittents and their sequelæ." * * * * "Whenever the whites are attacked with intermittents, the blacks are also susceptible, though not in so great a degree." And again: "Certainly negroes do suffer greatly on many cotton plantations in the middle belt of the Southern States; and I have seen no evidence to prove that they can, in this region, become accustomed to the marsh poison." Dr. Nott applies these observations to the region of country removed from the rice country, and adds: "We shall see further on that the negroes of the rice-field region do undergo a higher degree of acclimation than those of the hilly lands of the interior." Upon this he throws out the suggestion that there may be "difference in the types of those malarial fevers which originate in the flat tide-water rice-lands, and those of the clay hills, or marsh fevers of the interior."

Dr. Nott says in a note: "A medical friend, (Dr. Gordon,) who has had much experience in the diseases of the interior of Alabama, South Carolina and Louisiana, has been so kind as to look over these sheets for me, and assures me that I have used language much too strong with regard to the exemption of negroes. He says they are quite as liable as the whites, according to his observation, to intermittents and dysentery." On a closer examination of the different remarks of Dr. Nott, above quoted, we confess ourselves somewhat at a loss to decide which side of the question he has raised, they tend chiefly to support. First comes the general remark that "there is *no acclimation* against the endemic fevers of our rural districts;" then, "negroes are comparatively

exempt from all the endemic diseases of the South;" again, "negroes do suffer greatly on many cotton plantations in the middle belt of the Southern States, and he has seen no evidence to prove that they can, in this region, become accustomed to the marsh poison;" and finally, "that the negroes of the rice-field region do undergo a higher degree of acclimation than those of the hilly lands of the interior."

A reviewer of Dr. Nott, in the *Southern Medical and Surgical Journal* for January, 1858, says at page 22: "We must differ from the learned author when he affirms that negroes are comparatively exempt from all the endemic diseases of the South. Such is certainly not the case in this section of Georgia, (Augusta,) and in the adjacent portions of South Carolina and Alabama, where every planter knows that his negroes suffer, equally with the whites, annual attacks of intermittent and remittent fevers, dysentery, malarial pneumonia, etc. This writer then goes on to "out-Herod Herod" in his opposition to malarial acclimation, reaching the *ne plus ultra* when he says: "We may safely affirm the liability to *our* fevers is in a direct ratio with the length of time the individual has resided in the malaria district, and that *natives* are the most susceptible." * * * * "Negroes born and reared upon the plantations of Georgia and South Carolina are fully as liable to fever as new comers, and we think much more so." But finally, he concurs with Dr. Nott, that in the *most malarious* portions of the whole malarious region, the low country, "negroes do become acclimated and comparatively exempt from fevers." From this he infers also with Dr. Nott, "that the low-country fever, like yellow fever, must then be essentially different from any form of fever in the upper sections of the Southern States."

Now, to our apprehension, the attainment of more perfect acclimation in the latter region is more justly attributed to the *steady continuance* than to any *peculiarity* of the febrific cause; for we find no material difference in the types of fever prevailing here and the uplands.

There are malarious *seasons* as well as malarious *regions*, and it appears to us that in those climates and localities where the operation of the morbific cause is most *continuous*, the effects should be most *durable*. Thus, by the inherent conservative powers of the animal constitution, it is capable, in the course of time, of habituating itself to the deleterious influence of deadly poisons, as is actually witnessed in the use of opium, strychnine, arsenic and corrosove sublimate. The following quotations from respectable authorities will serve to show how widely different from the commonly received opinion on the subject of acclimation are the positions held by both Dr. Nott and his reviewer.

Dr. E. M. Pendleton of Sparta, Georgia, in an interesting

paper "*on the susceptibility of the Caucasian and African races to the different classes of disease,*" published in the *Southern Medical and Surgical Journal* for November, 1849, after showing the greater liability of children than adults to idiopathic fevers, remarks: "But why the adult should be less liable than young persons is not so easily determined, unless young people in miasmatic districts have to undergo a kind of acclimation, as foreigners, and afterwards become less subject. I have observed that parents seldom have fever where they have lived a long time in unhealthy sections, while their children are frequently every one prostrated at once. Inquire of them, however, and you will find that in former years they were equally as subject to it as their children seem to be in later days."

From Dr. LaRoche's valuable work "*on Pneumonia and Malaria,*" we take the following: Speaking of the *protection* afforded by acclimatization, he says: "That such a protection is thus obtained, to a greater or less extent, in regard to all malarial and some other forms of fever, no one who has examined the subject with attention will feel disposed to deny. By long habituation to infectious localities, and to the high temperature of hot regions, the system becomes acclimatized, and thereby acquires the power of tolerating perfectly and permanently the poison, or of eliminating it as soon as received, without succeeding reaction. The observation is of old standing. Pliny, nearly twenty centuries ago, called attention to the fact, *that they who are seasoned can live amid pestilential diseases,*" and the statement has been confirmed by all subsequent observations." P. 403.

Dr. La Roche goes on to show correctly that "the dangers of infection to strangers is in proportion to the coldness of their native land—that the protective influence of acclimatization is lost by a prolonged residence in cold climates—that the children of the natives and acclimatized do not enjoy the same advantage in regard to protection as their parents, but acquire them rapidly as they advance in age, etc;" the most of which he also shows to be equally true of yellow fever. P. 404–5.

Dr. Nott says: "An attack of yellow fever does not protect against marsh fevers, nor *vice versa.*" This is very true, but we go further still. We maintain that a *mere* attack of yellow fever does not protect completely against the same disease. To effect this purpose there must be a *good strong attack*—one that is capable of modifying the system and leaving a permanent impression. So, likewise, with malarious or country fevers. It requires longer exposure and often numerous attacks before the human system becomes seasoned to the deleterious influence of malaria. Yet La Roche demonstrates the fact by voluminous testimony, and it fully accords with our observation, that persons who have lived long in Southern malarious districts suffer much less from yellow

fever, when first exposed to it, than those from the North who have not been thus seasoned. What does this prove, if not that there exists a consanguinity between the types of fever?

The following extract, from *Watson's Lectures*, present this subject in its proper light:

"Another fact worthy of notice, in respect to the agency of the malaria upon the human frame, is that it affects strangers much more readily and decidedly than the natives of the place. In other words, habit mitigates the injurious effects of the poison. Persons become seasoned to it. At Walcheren, though almost every adult among the lower classes had labored, in the course of his life, under the endemic intermittent, yet they were infinitely less subject to it than strangers: and they will not believe that their beloved birthplace is unhealthy. Sir Gilbert Blane says that persons of education, and even medical men, denied indignantly that this country was less healthy than any other; and attributed the sickness which raged among our troops to some trivial circumstance of diet or habits, and not to any insalubrity of the air. This is a curious moral feature, but a very general one. In the pestilential plains of Estremadura the superstitious natives, unable or unwilling to account for a disease of a type so uncommon, among the soldiers, from any unwholesomeness of the air, declared that they had all been poisoned by eating mushroons. It was found, also, at Walcheren, that the strangers who survived the first attacks became thereafter much less liable to the endemic fevers. The French general, Monnet, who had held the command at Flushing for several years, had acquired a knowledge of this fact, and endeavored to turn it to practical account. He recommended that troops should not be frequently changed; for when it was the custom to send batallions from Bergen-op-Zoom every fourth night in succession, to work on the lines of Flushing, these men never failed, upon their return, to be taken ill in great numbers. General Monnet therefore advised, however displeasing it might be to the officers, that a stationary garrison should be retained at Walcheren, in order that the men might be habituated or seasoned to the air, (*acclimatés*) and he adduced the instance of a French regiment which suffered in the second years of its being stationed there only one-half the sickness and mortality which it suffered during the first year, and hardly suffered at all in the third year." P. 446.

Dr. Watson then speaks of the generally injurious effects of malaria, besides the violent and distinct forms of fever it produces in new comers, and gives the following testimony in respect to the exemption of negroes:

"One remarkable exception is mentioned by Dr. Ferguson. From some peculiarity or idiosyncrasy (which he conjectures may be somehow connected with the texture of the skin) the negro

appears to be proof against endemic fevers. To him marsh miasmata are in fact no poison, and hence his incalculable value as a soldier, for field service, in the West Indies. The warm, moist, low and leeward situations where these pernicious exhalations are generated and concentrated, prove to *him* congenial. He delights in them, for there he enjoys life and health, as much as his feelings are abhorrent to the currents of wind that sweep the mountain-tops, where alone the whites find security against endemic fevers."

There is doubtless much truth in the remarks of Dr. Ferguson, but his assertions are altogether too strong for our temperate region. Malaria is certainly a *poison* to the negro as well as the white, but it is less deleterious to the former, and he more readily becomes seasoned to it.

It would seem that those types of idiopathic fever which, according to Dr. Campbell's plausible theory, depends chiefly on disorder of the *cerebro-spinal system of nerves*, as all the well-marked *paroxysmal* fevers are more subject to recurrence and require a longer period for acclimation than those of the *continued types*, as yellow typhoid, typhus and the eruptive fevers, measles, scarlatina, variola, varicella, etc. Quotations on this subject might readily be multiplied to any extent, but, perhaps, to little purpose. The testimony would be found to be very conflicting, and difference in opinion would still remain.

To show that we have not penned these remarks in a spirit of captious criticism, but only for the purpose of eliciting the expression of opinion by others on the subject, we will now give our own views in regard to *acclimation*, published in our first volume of *Southern Medical Reports*, (1849.) Nearly ten years of additional observation has only served to strengthen the opinions here expressed:

"In connection, it may be expected of us to say something in regard to what is termed '*acclimation.*' This term is in very common use, and is well understood to mean *the habituation of a person to a special climate.*

"It is but reasonable to suppose, that man, 'the master-piece of his Creator,' and 'the inheritor of the earth,' was designed to live in every portion of the globe which is supplied by the hand of nature with the means of subsistence, or accessible to commerce and the arts. Yet, so great is the difference of soil, climate and attendant circumstances, in the various regions between the tropics and the poles, that no race of animals is capable, at once, of enjoying equal health in them all. There is required a certain adaptation of the constitution to each, which can only be attained through the gradual changes effected by time and exposure. Independent of the peculiarities of climate, soil, water, etc., to be found in different regions, it is presumable that there exist in the

atmosphere over certain localities, deleterious gasses, effluvia, or emanations from the earth, which exert their most powerful effects upon the living system when it is first exposed to their influence; but to which the system may become gradually inured in the process of time. To become accustomed to these peculiarities of soil, climate and noxious effluvia, is what we term being *seasoned* or *acclimated;* and it is wonderful to witness the capabilities of the human system in this respect. There are but few individuals who can make a great change of residence with perfect impunity. With the great majority of people, it is done at the peril of their lives; but the effects are very different upon different constitutions. Some do not become seasoned until they have suffered the severest form of endemic fever belonging to the climate and locality; others become gradually and thoroughly acclimated without even suffering an open or severe attack. There are persons who have resided in New Orleans twenty years without ever having had yellow fever, whilst others have had it two or three times. Strong attacks of the severest forms of our remittent, bilious and yellow fever seems to cause a modification of the system, which secures to the individual a greater or less immunity from subsequent attacks. Attacks of the milder forms, as ordinary intermittents, effect no such immunity; but, on the contrary, when frequent, lead to permanent engorgement of the spleen, and cause an increased liability to the complaint. The term acclimation is just as familiar to the inhabitants of all the Southern portions of the Mississippi valley, as it is to the citizens of New Orleans, and is used to express the same idea, viz: that persons coming from a Northern climate and settling there are very liable to have attacks of fever during the first two or three years, but afterwards become quite exempt. This fact is so well known as to cause a considerable difference in the valuation of negroes, and even horses and cattle. An acclimated negro, horse, or milch cow, commands a higher price than an unacclimated one. We shall not, at this time, attempt to explain the nature of the change effected by acclimation, nor the manner in which it is brought about; but it is a fact confirmed by long experience and common observation.

"Believing, as we do, that yellow fever is only one of the forms or types of endemic, malarious fever, witnessed almost annually in this city, and less frequently at many other places in the South, we may state the fact, that those who have suffered *severe* attacks of it, or even *mild* attacks, during severe epidemic seasons, certainly remain quite secure from subsequent attacks; especially if they continue to dwell in the same locality. But that they are equally as secure as those who have had small-pox, measles or hooping-cough, as is maintained by some physicians, we cannot for a moment admit. Our own observation, if we have seen

aright, is at variance with this position. It is a common remark among persons who thought themselves acclimated, when attacked by fever again, during a sickly season, to say, that 'if they were not certain of having once had yellow fever, they would think they had it again.' The truth is, *they did have it again*;* and if, by neglect or malpratice, the disease had run on to a dangerous stage, or to death, all doubt would have been removed. But, fortunately, the partial acclimation attained so fortifies the system against the malign influence of the morbific cause, that the tendency to death is not near so strong as in unacclimated subjects; therefore, most generally, they are easily relieved, and come to the conclusion they have not had yellow fever a second time.

"It is a common belief, both in the profession and out of it, that the creoles, or natives of New Orleans, do not have yellow fever at all; but in our accounts of the epidemics of 1847 and 1848, we have given the testimony of some of the most respectable physicians to the contrary.†

"From the foregoing remarks it follows, then—

"1. That persons coming from more northern latitudes to this have to undergo an acclimation or seasoning, before they become secured in the enjoyment of good health.

"2. That this acclimation may be attained without sickness; but that, most generally, it requires the endurance of one or more spells of the customary endemic fevers.

"3. That an attack of the endemic yellow fever effects greater security against subsequent attacks, than any form of fever seen in the country; but the remark is applicable, in some degree, to all of them, excepting the ordinary mild intermittents.

"4. That persons may have yellow fever more than once, though it is evident that those who have had one plain attack, usually have little or nothing to dread from subsequent attacks.

"5. That creoles or natives of New Orleans, may have yellow fever—though generally they have it in a very mild form.

"So much for our present views of acclimation. The subject is full of interest, and we shall probably recur to it, from year to year, as our experience is enlarged."—[*New Orleans Med. News.*

Syphilitic Inflammation of the Retina.

The revelations of the ophthalmoscope bid fair to add a peculiar form of retinitis to the acknowledged *rôle* of symptoms due to constitutional syphilis. A fortnight ago we noticed a very interesting case, in which lymph had been seen deposited on the retina of an infant, the subject of hereditary syphilis. A few

* Dr. Harrison says he had known persons to have yellow fever two or three times, but he never knew such cases to terminate fatally.

† New Orleans Medical and Surgical Journal, 1848 and 1849.

days afterwards Mr. Critchett admitted a second case, in which a girl, whose history and appearance led to the belief that she was the subject of the same kind of taint, was losing sight in both eyes, from the punctate effusion of lymph on the retina. Two other cases are attending Mr. Critchett's clinique, in which, in connection with acquired syphilis, retinitis with effusion has occurred. In one the effusion is in the form of isolated white dots; but in the other the whole visible extent of retina is cloudy and opaque, the optic nerve itself being but dimly seen. It is worthy of note, that in neither of these cases has there been any iritis or affection of the anterior parts of the globe.—[*Omodei Annali Universali*, and *Med. Times and Gaz.*

On some of the prevalent Errors in relation to the Predisposition to Hysteria. By M. Briquet.

M. Briquet believes that most writers have been indebted more to their imaginations than to the observation of facts for the pictures they have drawn of this disease. It has been attributed by most of them either to unsatisfied sexual desires, or to excessive excitement of the uterus and its appendages, and a fanciful etiology to correspond has been invented. The object of this paper is to show that these and other preconceived ideas have no solid foundation in fact.

1. The *hysterical constitution*, about which so many positive assertions have been made, has in fact no existence—the affection occurring in women having the most opposite external appearances. The author examined 425 cases of hysteria in this point of view; of these, as regards height, 127 were tall, 168 medium size, and 106 short; as to strength, 99 were strong, 36 medium, and 26 weak; as to flesh, 194 were stout, 106 medium, and 92 thin and spare; as to color, 220 were fair, and 164 dark, 27 having the hair light, 39 black, 177 light chestnut, and 188 deep chestnut. In 168 the face was pale or brownish, and in 174 fresh colored. Thus it will be seen these were the ordinary varieties met with among women in general.

2. The *temperament* is also various enough. The following is the classification M. Briquet made of 383 cases. In 143 it was lymphatico-sanguineous, in 125 lymphatic, in 91 nervous or lymphatico-nervous, in 12 bilious, and in 11 sanguineous. These are evidently very much the proportions that are found in females of 15 to 30, part inhabitants of the country, and part of the towns, as was the case with these. At all events, there is no temperament that can properly be called hysterical.

3. *Moral disposition.*—That which is not discoverable in the physical constitution of hysterical females is, however, very evi-

dent in their moral disposition. So much is this the case, that of 430 cases occurring to the author, not more than 20 at the utmost have not manifested it. The characteristic of this is marked *impressionability*, foreshadowed in childhood by great timidity, excessive susceptibility to blame, and a disposition to shed tears easily.

4. *Mode of life.*—Another of the axioms that have been laid down as undoubted, is, that hysteria is the prerogative of the wealthy and luxurious, and that poverty is a security against its occurrence. It is a complete error; the common people being the subjects of hysteria in almost a double proportion to the other classes. At a particular epoch M. Briquet visited all the female patients in the medical and surgical wards of La Charité, with the exception of those suffering from epilepsy, apoplexy, insanity or delirium. The number amounted to 203, and of these 65 were hysterical (38 with convulsive paroxysms), 49 were impressionable, and 89 only were neither hysterical nor impressionable. Thus, among the common people there was 1 woman in 5 who had hysterical paroxysms, and 3 out of every 8 were the subjects of hysteria. So far from being exaggerated the statement is rather below the truth. But where is the practitioner who meets with 3 cases of hysteria among 8 of his private patients? According to the experience of many M. Briquet has consulted upon the subject, there is about 1 in 8 or 10 in the easy classes of society, not alluding to the very highest. The charms and simplicity of a country life, too, have been sufficiently praised, and nervous diseases have been said to be the almost exclusive afflictions of civic life. M. Forget, in 1847, somewhat startled this belief by showing how frequently hysteria occurs among the simple Alsatian peasantry. M. Briquet has obtained cognizance of the place of abode and of early education in 324 cases of hysteria, and of these 168 were town born and bred, and 156 from the country—the majority of these latter having in childhood labored in the fields. In the case of 42 of these country girls their mothers had been hysterical, 29 suffering from paroxysmal attacks. Professor Lebert, of Zurich, also assures the author that hysteria is just as often seen in the poverty-stricken cantons of Switzerland as in the most flourishing ones. A too tender and luxurious education has been assigned as a predisposing cause; but of 81 cases of hysteria occurring before the age of puberty, in 21 the harsh treatment they had been subjected to was the principal cause of the disease. A third portion of the author's collection of cases had been submitted to ill-treatment or privation during childhood. In place of a tender education being assigned as a predisposing cause, it would be more just to stigmatize a harsh one.

5. *Continence* has been stated by many authors as an unnatu-

ral condition, predisposing to hysteria; but when it is remembered that the majority of cases occur between 12 and 20, we naturally ask at what age it becomes unnatural, as also for the explanation of the occurrence of the disease in 86 children under 12 years of age. Various authors since the time of Galen have deplored the fate of widows, as the necessary victims of hysteria; but in point of fact their solicitude has been little needed, inasmuch as among 375 cases collected by Landovzy, only 12 of the subjects were widows, as were only 14 in the author's own 430 cases, *i.e.*, 26 in 800 cases, or 1 in 30. Of the author's 14 cases, too, in 6 the hysteria appeared on the day of the husband's death, and in 4 during the first month after it, and should surely with more probability be referred to moral emotion. Hysteria has been said to be, on the one hand, common among nuns, and, on the other, rare among women who give free vent to their sexual desire. But in point of fact it is rare in convents, and is chiefly found in those in which there is great fasting and maceration. The reverse position so strongly maintained by authors may also be disposed of. Thus, of 300 hysterical females above the age of 15, 139 were married or kept women, and among them had 367 children, not counting miscarriages. Among the 161 remaining, very few resigned themselves to continence. At the Lourcine, where syphilitic workwomen and servants repair, among 424 patients, 169 were hysterical. As to prostitutes, of 197 applying to St. Lazare on account of syphilis, 106 were hysterical, 28 very impressionable, and 65 neither hysterical nor impressionable. It results from all this that continent women are rarely hysterical, those who do not observe continence are frequently the subjects of hysteria, while those who pursue the extreme of incontinence are the most liable of all. The reason is obvious. Among these different classes of women, the first lead peaceable lives, the second have much to go through, while the last are a prey to frequent and violent emotions. Next we may consider the effects of marriage on hysterical women, which, to judge from the statements made, have been truly remarkable. But among M. Landovzy's and the author's 800 cases, in only 29 instances did decided advantage follow marriage, notwithstanding the complex character of the modifications ensuing upon this state.

6. *Menstruation and affections of the uterus.*—This class of influences has been raised to the highest rank by those writers who are determined at placing the seat of hysteria in the uterus. 1. This has been supported by the supposed effects of normal or abnormal conditions of the menstruation. From the author's observations, however, made on 411 hysterical women, in but 136 had there been any derangement of the menses. Of 237 deliveries of hysterical women, in but 12 were there any convul-

sive paroxysms, some of which too might have been examples of eclampsia. 2. According to authors, it is common to observe hysteria in affections of the uterus. Now these diseases are exceedingly common, and the connection ought to be easily demonstrable. But this is not the case, for Landovzy and other partisans of the opinion are able to collect but some 40 cases of the affections of the genital organs giving rise to hysteria—few enough as compared with the thousands of cases daily occurring. Practitioners, moreover, having much to do with the various female diseases entirely deny such connection.

[*L'Union Medicale*, and *Med. Times & Gazette.*

Alarming Head Symptoms relieved by Quinine. By Mr. R. L. Bowles, of Folkstone.

Case.—H.W. B....., a medical man, stout, strong, and healthy, æt. 28, and married, was attacked on the evening of July 6th, on his way home from the cricket-field, with most severe headache. He had walked, in the course of the day, about sixteen miles, besides having played for two hours at cricket. The day was hot and sultry. On arriving at home, he went to bed, but the severity of the pain in his head prevented his sleeping. He had also great intolerance of light. During the next two days he continued much in the same state, with the addition of occasional delirium. It was at this time I was called in, and found my patient complaining of severe splitting pain in the forehead, which was much increased by talking or moving. He earnestly requested me to leech or bleed him, having a conviction that he was suffering from congestion of the brain. The pulse was from 46 to 48 in a minute, soft, and occasionally intermitting; the skin cool and moist; the tongue œdematous and pale, with a soft white fur on its surface; the face, which was occasionally flushed (though without a corresponding heat of skin), wore a singularly indifferent and solemn expression; the ocular conjunctiva was healthy in appearance. He had become restless and irritable, and was constantly throwing himself about in bed. His bowels had been acted upon by a seidlitz draught. A mixture of ammonia, sulphuric ether, and camphor julep, was now prescribed to be taken every four hours, and a full dose of liquor opii at bedtime.

July 9th, 8, A.M. The patient had passed a comfortable night, and appeared much relieved, his countenance wearing a more natural expression. In the afternoon, however, the symptoms returned in all their severity. The opiate was omitted at bedtime. A blister was applied to the neck.

July 10th. In the morning I found that he had been deliri-

ous, and had passed a restless night; the pain and intolerance of light were quite as distressing; and he was unwilling to take nourishment of any kind. The bowels were confined, and the tongue had now a brownish coat on the back part. The blister had risen well. A physician, a friend of my patient, called to see him; and, believing the case to be of the nature of sunstroke, advised eight leeches to the temples, which were accordingly applied, but with no relief to the symptoms. He was now a good deal depressed.

July 11th. He passed a restless night. The bowels were freely relieved by a pill of calomel and colocynth, but each action of the bowels appeared rather to aggravate the headache. The opiate was given at bedtime, and a mixture of sulphuric ether, valerian and camphor; with beef-tea *ad libitum*. This treatment afforded considerable relief, and gave him a comfortable night.

July 13th. Severe symptoms again returned, which were partially relieved by repeated doses of the stimulating mixture. Mr. Roscow (who now saw the case with me) advised disulphate of quinine, in three-grain doses, to be taken at intervals of two or three hours; care being taken to give the first dose of quinine when the headache was at its minimum. The effect was magical. The first dose prevented the paroxysmal return of headache, and, with its continuance, a rapid general improvement took place.

July 16th. My patient was convalescent, the pulse having risen to its normal standard.

Twelve months ago my patient was living in the island of Greneda, and for nearly two months he suffered severely from repeated attacks of intermittent fever, for which he had taken large doses of quinine with great advantage.—[*British Medical Journal, and Ranking's Abstract.*

On the various Tests for Saccharine Urine, and on the Varieties of Diabetes. By Dr. A. Becquerel.

Dr. Becquerel draws attention to certain fallacies that may arise in the employment of the potassio-cupric liquid of Barreswil, the solution of Trommers, or caustic potash, as tests for sugar in the urine. The following, method, he states, prevents all fallacy:—To a measured quantity of urine—say thirty parts add a similar quantity of solid acetate of lead in crystals—say two parts; heat being applied, a dirty-white precipitate is at once obtained; this liquid is to be filtered, and the filtrate treated with the sulphate of soda in excess—say four parts. The second mixture is to be again heated; the sulphate of lead is precipita-

ted, and a clear, transparent liquid remains, which contains the sugar, if any was present, the urea, and some saline matter. The potassio-cupric solution is not reduced, nor liquor potassæ turned brown, unless sugar is present in this liquid. If albumen is present in the urine, the acetate of lead carries it down with the other organic matter contained.

After various remarks on the purely chemical aspects of the question, Dr. Becquerel passes to the consideration of diabetes; which he regards either as idiopathic or symptomatic. The former is characterized by the presence of a notable amount of sugar in the urine, which is increased in quantity; there is excessive thirst and hunger, with other morbid phenomena. In the latter the presence of some sugar in the urine is an accessory symptom, following upon other diseased conditions; like albuminuria, it is associated with a great variety of diseases. In these cases the sugar is never very considerable, though it may amount to as much as 25 or 26 per 1000; while in idiopathic diabetes it rises to 60 and even 80 per 1000. In symptomatic diabetes neither the quantity nor the density of the urine is materially increased.

Dr. Becquerel divides the conditions with which symptomatic diabetes may be associated into five categories:—1. Diseases of the brain and cord. 2. Diseases of the liver. 3. Diseases accompanied by dyspnœa. 4. The presence of lactation. 5. Various diseases.

Among nearly two thousand patients, whose urine the author has caused to be examined at the Hôpital de la Pitié, he has found five cases belonging to the first category; they were respectively,—1. A case of myelitis in a woman, aged thirty-seven, who died tetanic, and had sugar constantly in her urine. 2. A case of general paralysis in a woman, aged fifty-four, with temporary convulsive affections, during which the urine was saccharine. 3. Amaurotic amblyopia, with a paralytic condition of the lower extremities, in a man, aged fifty-one; urine permanently saccharine. 4. A man, aged sixty-two, closely resembling the last case. 5. A young woman, aged twenty-two, with meningo-cephalitis, during which there were 8 to 12 grammes of sugar per 1000 in the urine. Recovery: five weeks later, return of the same symptoms, when there was no sugar or albumen in the urine. Death ensued, and the diagnosis was confirmed by the autopsy.

Dr. Becqueral reports three cases of liver disease accompanied by diabetes. 1. A man, aged fifty-three, with chronic gastritis and chronic hepatic congestions, had 20 to 28 grammes of sugar per 1000. 2. A man, aged fifty-four, with pulmonary emphysema, and consecutive chronic congestion of the liver: the sugar was detected for six months, and then disappeared.

3. A young man aged nineteen, with slight enteritis and blennorrhagia (there is no further statement about hepatic disease:) being a sugar-refiner, he consumed nearly a kilogramme of sugar (about 1¼lb.) daily. Sugar was found in his urine during the whole time of his stay in the hospital.

Dr. Becquerel expected to find sugar frequently in diseases accompanied by embarrassed breathing, but failed to do so entirely.

He found sugar in the urine of nine women recently delivered, in whom the lacteal secretion was established. It was also met with in the two following cases, which do not come under any of the preceding heads:—

1. Female, aged thirty-five, affected with cancer of the neck of the womb, not ulcerated. 2. A man aged fifty-four, affected with extreme anæmia, the result of poverty.—[*L'Union Médicale*, and *British and Foreign Med. Chir. Rev.*

Fatal Disease of the Appendix Vermiformis. Dr. Caspar Wister read the following paper before the College of Physicians of Philadelphia:—

The appendix vermiformis exists only in man and two superior species of the quadrumana, the orang and the ape. It is the type of the prolonged cæcum common to all other mammiferous animals. During fœtal life it is continuous with the cæcum, and of the same size, and is developed from the cul de-sac of the latter. Bishoff admits that the earliest recognition of its origin was by Meckel, in a fœtus seven lines in length.

The appendix is ordinarily three inches long, with a diameter of two lines, but is subject to great variety of size as well as position. Occasionally it is entirely absent, while Welga has seen it nine inches long, with many convolutions, and Autenrieth four, and as large as the colon.

It is entirely enveloped by the peritoneum, which forms for it also a true mesentery, holding it loosely in position. The muscular coat is not in bands, as in the colon, but surrounds it as in the rectum. The lining membrane is continuous with that of the cæcum, and forms a valve at the entrance, the falciform edge of which looks towards the right and downwards. This valve, in most instances, prevents the introduction of foreign bodies, but permits free exit to mucus, of which in adults there is a large supply, with rarely any admixture of alimentary matter; in infants, on the contrary, it is filled with meconium. The glands within are very numerous, and of the solitary variety. The extremity of the appendix is found at times in the pelvis, more commonly posterior to the colon; its position is entirely uncertain.

The function of this body is supposed to be similar to that of a gland; it furnishes an acid secretion which causes the chyme in the cæcum suddenly to acquire the property of reddening litmus paper.

The subject of the following notice was a boy of five years of age, fair skin, light eyes and hair, and delicate physical development, the son of a father lately dead with phthisis.

This child was visited professionally on the first of November; he was at that time out of bed and in his ordinary dress. His expression was languid; he had much fever, with a pulse of 130; his tongue was covered with a slight white deposit, through which the papillæ were projecting, the tip and edges being unusually red. He complained of pain in the abdomen, describing it vaguely as "stomach ache," without giving it any locality. This pain was spasmodic, recurring at short intervals; sharp and griping, but followed by complete relief. At this time there was no pain upon pressure, or soreness over the abdomen. On the afternoon of the day but one preceding, an ordinary walk had been followed by complaints of much weariness, and in the course of the night by the first expression of pain, and this without any chill. Throughout the following day there had been some fever and pain, but this was not thought of sufficient gravity to require medical interposition. There had been no motion of the bowels during the forty-eight hours immediately preceding the first professional visit; and at that time the case had the aspect of an ordinary slight attack of colic, with the sympathetic fever natural to a child of sensitive organization, teeming with sympathies ready to respond to any slight disturbance of the economy. A mercurial purgative wasdirected, and a febrifuge at intervals. There had been no unusual article of diet taken, except a moderate quantity of chestnuts. The night was much disturbed, with an increase of both fever and pain; the latter still in paroxysms.

The morning of the 2d, in consequence of the purgative not having operated, a copious enema was administered, which produced a large fecal discharge, none of it of a dry or impacted description, but contained distinct evidence of the operation of the mercurial. The child expressed a sense of relief; and, after a dose of oil and a fomentation adjusted over the seat of pain, he was confined to bed.

The following morning Nov. 3d, there was a spontaneous motion of the bowels, without any improvement; there was now tenderness over the abdomen although during the paroxysmal pain, pressure with the hand was grateful. This pain continued the chief subject of complaint, engrossing the child's mind, and provoking constant expression of distress. We commenced frequent doses of small quantities of calomel, with full proportions of ipecacuanha and opium, and employed gum in solution largely as a diet.

On the 4th, the symptoms were more grave, greater pain upon pressure, some tympanitis, and soreness attending all motion of the person; the spasmodic pain still, however, caused most complaint, and recurred at short intervals. Leeches were now applied over the entire abdomen, all other treatment being continued except the use of ipecacuanha; this was withdrawn in consequence of slight vomiting. After leeching there was less complaint of pain upon pressure, and soreness and nausea disappeared, while stimulation was found necessary.

On the morning of Nov. 5th, he presented excessive tympanitis, constantly recurring paroxysms of pain, great restlessness, sunken features, some tenderness upon pressure, and a pulse of 140. The child was, after consultation with Dr. Wood, placed under the full effect of opium, with an increase of the mercurial, and a blister over the abdomen. The rectum was relieved of a large accumulation of gas by the introduction of a catheter, but all motion of the bowels was in vain solicited. Under the full effect of the opiate there was less exhibition of pain and restlessness, without any arrest of disease: tympanitis greatly increased, and compressing the stomach caused regurgitation of fluid, and much depressed the vitality of the entire organism.

Nov. 6. Small quantities of oil of turpentine, with full doses of the officinal solution of morphia, were administered, accompanied by further stimulation. Gradual sinking under the unchecked march of disease, aided by the accumulation of gas, terminated in death on the 7th of the month, seven days after the commencement of treatment; this being the result of a disease deficient in symptoms sufficiently distinct for satisfactory diagnosis, and only decided in the steadiness with which it resisted treatment.

After death the abdominal cavity was found dry, with indications of peritoneal inflammation, consisting most conclusively in a few patches of pasty lymph upon the intestinal surfaces. There was an engorgement of the vessels of the intestines, but being in longitudinal bars from the diaphragm to the pubis over the entire mass, there was some doubt as to the time of its occurrence, particularly as signs of incipient decomposition existed elsewhere. The intestines, from the pyloric orifice of the stomach to the sigmoid flexure of the colon, were greatly distended with gas, and contained, besides, a large amount of fluid fecal matter. The stomach was empty and much contracted, the accumulation of gas having pressed it against the diaphragm, and in so doing caused the latter to encroach upon the thoracic viscera, thus rendering the last hours of life a most painful exhibition. The lining membrane of the intestinal canal was healthy throughout, and the cause of death was not manifest until the appendix vermiformis was examined. This was perforated at the lower extremity; the opening being large, with ragged edges, indicating ulceration, and

partially filled by a plug of concrete matter of the size and much the shape of a date-stone, composed of small seeds, many of these, from figs, associated with concrete matter deposited in layers, and arranged in concentric circles.

In this instance, the extremity of the appendix rested in the pelvis upon the rectum, immediately over the fundus of the bladder; here an effusion of the contents of the intestines had occurred, but in small quantity, owing to the plug having filled the ulceration it had caused in the appendix.

The matter effused had given rise to excessive inflammation and the formation of much lymph, an attempt having been made to form an abscess and inclose the offending fluid. This deposit of lymph extended over a surface of three inches in diameter, was dark in hue, passing into gangrene; and, although adhering strongly to the intestinal surfaces, left them, when removed, healthy in appearance. Those surfaces of the sigmoid flexure of the rectum facing each other in the natural position were strongly adherent for a distance of three inches, and consequently prevented peristaltic motion at this point. This explained the retention of gas after the peritoneal symptoms became decidedly marked, although there had been a free passage of fecal matter in an early stage of the disease.

Again, the son of a very distinguished physician of this city, twenty-two years of age, passed Sunday evening in the society of his family and a small collection of his father's friends; he was gay and apparently in good health.

A few days previously he had complained of vague pains in the abdomen, not however of a degree to attract particular attention.

He retired on the evening above mentioned without any unusual sensations, but awoke before daylight with intense colic. This increasing, his father sent for a medical friend, after exhausting his own resources and failing to procure relief. Throughout Monday the symptoms of colic continued without abatement, and as the day wore on only presented indications of peritoneal complication. There was a large, though not excessive accumulation of gas, the most prominent feature of the case being excruciating pain from which only partial relief was procured by complete narcotism. The bowels resisted every attempt to procure evacuation of their contents after the earliest stage of the disease.

On Monday night and Tuesday morning the agony of the patient began to abate, but only to be followed by collapse, with cold damp surface and failing pulse; he gradually sank, and died in the course of the morning, after an illness of thirty hours.

The abdomen was found after death much distended by gas, free from effusion, and not affording any evidence of excessive peritoneal inflammation. The effect of disease in this case could be traced with much confidence, as the examination was made on

Tuesday afternoon, a few hours after death, and but a short time was allowed for decomposition to embarrass investigation.

The appendix was much distended at its lower extremity by a concrete mass composed largely of raisin seeds. Its walls had not been perforated, and contained, with the foreign matter, an accumulation of pus, the whole forming a mass the size of a walnut. The appendix partially embraced the illium, adhering to it strongly, and completely strangulated the small intestines; which were, for a distance of six feet above, of a dark mahogany colour and passing into gangrene. At the point of strangulation there had been much inflammation with large effuion of lymph; the walls of the tumor were thin, bursting under pressure of the fingers; but, having retained its contents during life, there was no discharge of foreign matter into the peritoneal cavity giving rise to peritonitis and masking the earlier symptoms of colic, as in the case just described.

Moreau cites a case identical with this, the illum having been strangulated by adhesion of the appendix to the mesentery; while Marteau has seen the jejunum, and Scarpa the colon, embraced in the same manner and with a like effect.

Klockhof reports a case in which the appendix adhered to the colon by its extremity, thus forming a loop through which the small intestines had passed, producing strangulation.

Merling, in examining a subject, found the appendix adherent to the colon by the lower extremity, and forming a free communication between different sections of the intestine, but was unable to learn anything of the previous history of the individual, or under what train of symptoms this union occurred, evidently followed by entire recovery.

Again, the appendix is at times metamorphosed into a hydropic capsule, as reported by Rokitansky, from the presence of a concretion in the tube closing the canal and preventing escape of the mucous secretion. This causes the extremity to become dilated, and the mucus to pass into the condition of a serous membrane secreting an albuminous fluid.

Besides the foreign matter collecting in the appendix mechanically, tuberculous and typhoid deposits are laid down at times in its walls, giving rise to ulceration. When, in addition to these varieties of disease, we consider the fact, that a long time may be required to establish the existence of serious symptoms, since it is asserted that a concretion may exist and only give rise to blennorrhœa, a correct diagnosis is only equalled in difficulty by its importance. Ulceration of the appendix is not necessarily fatal, but forms abscesses at times pointing in various directions, according to the variety of directions assumed by the appendix; and it is of great moment that these should be anticipated and discharged at the earliest period possible, and the risk of an internal

rupture of their walls diminished. In the cases cited above, the earliest symptoms were of colic, excepting the obstinate constipation, the bowels having been freely evacuated without relief. In both, the earlier symptoms were overlaid by peritonitis; while in one there was an attempt to form an abscess, the constitution failing before it was accomplished.—[*Transactions of the College of Physicians.*

Treatment of Inflammatory Diseases of the Respiratory Organs.

Dr. Semple read before the Medical Society of London (January 16th, 1858) a paper on this subject. He commenced by observing that the treatment of pneumonia was formerly supposed to consist almost solely and essentially in the abstraction of blood from the arm; but that in the present day, not only in this, but in other inflammatory diseases, the use of the lancet was but seldom resorted to, and by many practitioners it was abandoned altogether. It became a question whether this great alteration in treatment was due to the varying fashion of the day, or to the fact that disease had, in fact, altered its type, and therefore required very different treatment from that formerly adopted. He (Dr. Semple) was inclined to believe that disease had really altered its type, for he and others had, at the commencement of their professional career, bled patients very constantly, and certainly with good results, but at present the operation of venesection was not so much required. He had been for the last three years connected with the Northern Dispensary, where all the usual forms of disease presented themselves to his notice, and he had recommended bleeding only once during the whole of that period in that institution. The fact appeared to be, that the sthenic inflammatory diseases were dying out amongst us, and that asthenic complaints were taking their place. The cholera which visited this country in 1832, was certainly a disease of depression, and this was immediately followed by the influenza, a disease of the same depressing class, and, like it, requiring a tonic plan of treatment. Since the date referred to, neuralgia, also a disease of depression, had become almost epidemic; carbuncles and carbuncular boils were at present decidedly so; and Bright's disease, the disease of the suprarenal capsules giving rise to the bronzed skin, and the disorders classed under the head of fatty degeneration, were all much more prevalent than formerly, even if we do not admit them to be new diseases. In fact, it now became a question whether bleeding should ever be practised at all, and he (Dr. Semple) was as cautious in ordering a patient to be bled as a surgeon would be in deciding upon the amputation of a limb. Never-

theless, although the cases which were met with in practice required in general the adoption of tonic and stimulating treatment, it was by no means proved that all forms of disease were characterized by depression; for cases of a sthenic type still presented themselves, and demanded the application of antiphlogistic measures. The remarks made upon the treatment of inflammatory diseases in general were particularly applicable to those of the respiratory organs, which are essential to life, and the inflammations of which require the most prompt and judicial medication; still it was impossible that any stereotyped rules could be laid down for the treatment of these affections, which may present the most opposite therapeutical indications.

The author then related the case of a lady in whom the treatment by bleeding, calomel, and tartrate of antimony was adopted for an acute inflammation of the larynx and trachea, extending to the bronchial tubes, substance of the lungs and pleuræ. This treatment not having at first produced a well-marked effect, the antiphlogistic plan was changed for a stimulating one, and carbonate of ammonia and brandy were employed while the acute symptoms still continued. The result was, that the patient became decidedly worse, and appeared to be on the point of death by suffocation; but on again changing the plan, and resorting to bleeding, low diet, and tartrate of antimony, the disease gradually subsided, and the patient, who is now alive and well, was restored to perfect health, without any trace whatever of the previous illness.

Dr. Semple wished that it should be understood that he had no dogmatic views to offer upon the treatment of the inflammatory diseases of the respiratory organs. He could not advocate indiscriminately large bleedings, profuse mercurialization, and repeated doses of tartar-emetic; nor, on the other hand, could he approve of the universal adoption of the plan of stimulating such cases by brandy and carbonate of ammonia; and it was difficult to determine which would be the greater error of the two. He believed that many cases of pure sthenic inflammation still presented themselves in practice, although they were by no means so common as they formerly were; and in such instances the abstraction of blood, and the administration of mercury, of the alkalies and tartar-emetic, will effect a cure. But there are in the present day a great number of epidemics, contagious, and diathetic forms of disease, which are, it is true, accompanied by inflammation, but of a low or asthenic character, and these require tonics, alteratives and stimulants. Undue depletion ought to be avoided in persons who are the subjects of the gouty, the venereal, or the scrofulous diatheses; and whenever any of these affections co-exist with, or precede inflammation, the disease ought not to be considered as of a sthenic character, and the cure

should be sought rather by correcting the prevailing morbid taint in the system than in indiscriminate depletion; and some of these constitutional maladies, especially scrofula, required cod-liver oil, iodine, iron, meat, wine, and beer.

The paper concluded with a sketch of the treatment of pneumonia as it presented itself in children, in vigorous adults, in the inhabitants of towns and cities, in persons labouring under fever, in its typhoid form, and in its complication with tubercular phthisis, in each of which cases, although the name of the disease was the same, yet the treatment required was very different, owing to the peculiar features which the malady assumed.

In the discussion which ensued, Dr. Routh, Dr. Camps, Dr. Webster, Dr. Cotton, Dr. Chowne, and Dr. Stocker took part. The debate elicited nothing very striking or novel; but it was remarkable that none of the speakers spoke in favour of the stimulating plan of treatment in inflammatory diseases of the chest.

Dr. Semple, in reply, feared that the nature of his remarks had been misunderstood by some of the speakers. So far from advocating the indiscriminate use of bloodletting, his paper had just the contrary tendency; and he believed that a medical man was bound to dispossess himself of all dogmatic opinions, and to treat his patients in such a manner as would most rapidly restore them to health. This could only be done by studying the peculiarities of every case, and paying strict attention to all modifying circumstances. However valuable statistics might be, he thought that they did not throw much light upon practice; and as to the number of cases which, it was said, recovered from pneumonia in the Vienna hospital without any treatment at all, it was not stated what the peculiar forms of the disease were, or what were their complications, and the results might be quoted to support any doctrine whatever. He thought that the subject of the modern treatment of the inflammatory diseases of the respiratory organs, and of inflammatory diseases generally, was a very proper one for debate in medical societies; and as the arguments were not by any means yet exhausted, he hoped that others would continue the discussion upon some future occasion.—[*Amer. Jour. of the Med. Sciences.*

Foreign Body retained upwards of Twenty Years in the Nasal Passage.

Dr. Hays states that the interesting case communicated to the College at its previous meeting by the president, in which a foreign body had remained four years in the lungs, recalled to his mind a case in which a foreign body had remained in the

nose for, probably, upwards of twenty years, and a brief notice of which might interest the Fellows.

Some years since I was consulted by a lady of between twenty-five and thirty years of age on account of ozæna, with which she had been troubled ever since childhood. The disease resisted various means of treatment, and I discontinued my visits and lost sight of the case.

About four years subsequently, a Fellow of the College, Dr. Wm. Darrach, inquired of me if I recollected the case, and stated that the patient had afterwards fallen under his care, and that finding it very intractable, he had determined to examine into the condition of the bones of the nose. With this object he introduced a probe through the nose into the nasal fossæ, and while moving this instrument about there, he accidentally dislodged a mass which dropped into the opening of the nostril, and by an effort on the part of the patient was expelled. On examination, it proved to be an old-fashioned glass button with a brass wire eye.

The mother of the lady stated she remembered distinctly that one of her sons, when a child, had had a coat with similar buttons.

Dr. D. supposed that the lady, when a child, had been playing with one of these buttons, had placed it in her mouth, whence it had slipped into her throat and produced strangling, and that in the effort to expel the button it had been forced up through the posterior nares and lodged in the nose. Here as a foreign body it had become a source of irritation, and produced the disease for which we had been consulted.—[*Transactions of the College of Physicians.*

Treatment of Pleuro-Pneumonia.

Dr. S. O. Habershon, Ass. Phys. to Guy's Hospital, draws the following inferences from certain cases he has observed and recorded.

1. That active mercurial, antimonial and opiate medicines are not necessary in many cases of pneumonia, even without depression, and when seen at an early stage.

2. That convalescence rapidly takes place in many instances under the saline plan of treatment, as bicarbonate of potash, as shown by Dr. Hughes Bennett and others.

3. That while some cases of pleuro-pneumonia, especially in young subjects, as several af the cases related were, may recover, even without any medical treatment, that salines appear to be of some value, perhaps by increasing the action of the secreting organs, modifying the character of the blood, and hastening the absorption of the effused product.

4. That in other instances, mercury appears to be of considerable value, as in cases where there is considerable pleuritic effusion.

5. That, in some, especially where there is much bronchitis, with great febrile excitement, without prostration or struma, antimony also is of much service; but that the indiscriminate use of calomel and antimony in very many cases retards convalescence, interferes with the return to healthy nutritive action, and should be avoided.

6. That opium alone, or as its alkaloid morphia, is also a valuable remedy in pneumonia, either combined with ipecacuanha, as in Dover's powder, or with antimony, when that is admissible; that it acts possibly by diminishing the frequency of the respiratory act, by its action on the nervous system, increasing diaphoresis, when combined as just mentioned; quieting the nervous system, relieving pain, and diminishing the excitability of the nervous system, and diminishing the excitability of the bronchial tubes.

7. That while, in some cases, general or local bleeding may be called for, such are exceptional cases now; and that many instances, on the contrary, require the liberal administration of nourishing diet, and in some cases stimulants.

8. That each case must be judged by its own peculiarities; and whilst many, from their age and other circumstances, will probably recover under most varied treatment, other cases, of which I might adduce many instances, almost invariably die, as those arising in very intemperate habits, or where it follows in the course of pyæmia and allied conditions. We have thus sought by these instances to show that, whilst calomel and antimony are sometimes of value, much more frequently they may be dispensed with altogether in cases of pleuro-pneumonia, rapidly advancing to consolidation of the lung, where a comparatively short time ago these remedies would have been prescribed.—[*Med. Times and Gazette.*

Principles of Treatment in Chronic Rheumatism.

Dr. Inman read an instructive paper on this subject, before the Liverpool Medical Society. He adverted to the frequency of the occurrence of chronic rheumatism, and the multiplicity of the plans of treatment employed for it; remarking that they all, however, possessed something in common. Difficulty as to diagnosis, and confusion as to treatment, he thought had arisen from the practice of classing all sorts of aching pains under one head, as rheumatic. The uneasy sensation experienced before the access of eruptive fevers, and during the course of malignant disease, or felt by those exposed to the action of mercury or

lead, and by those suffering from gout, gonorrhœa, or syphilis, and in cases where it was evident that bile or urea was mixed with the blood, and by children affected with struma—had all been set down as rheumatic, though due to most varied causes. The term "Chronic rheumatism," he believed strictly applicable to cases in which there is dull pain, usually coming on during the night, referred to the tendinous expansions of the muscles, the pulse not quickened, the skin warm, excepting over the seat of pain, where the temperature is usually low; the pain remitting about 4 P. M., and not recurring till some time during the night. There is usually no error of secretion, nothing visible at the seat of pain. The duration may be from one or two days to six weeks. Deposits in the joints rarely take place; and that form which causes gradual contraction of joints, and crippling of limbs is rare. The rheumatic pain is usually symmetrical; its chief seats those parts least protected by fat and integuments. Loss of motor power accompanies the pain, which is increased by action, and relieved by relaxation of the affected parts. Rheumatism is not occasioned by dry and intense cold, but by the more moderate degrees of cold, especially if the air be moist. The experience of Arctic navigators, and of the army before Sebastopol, as well as the comparative rarity of rheumatism among carmen, carters, and bricklayers, confirm this point. Firemen of ocean-going steamers appear particularly liable to it. Persons of feeble constitution and languid circulation are more obnoxious to it, than those with good circulation. It is not common in women, except at advanced ages. The vigorous action of the heart helps to remove the pain, as is evidenced by the improvement which generally occurs after dinner. In a case where there was great pain and stiffness in the arms, hands and deltoid muscles, the immersion of the arms in very warm water removed the pain for the time. Many rheumatic patients feel quite well in a warm bath; though often worse after it, from increased susceptibility. The influence of temperature on the local circulation has much power over rheumatism. Patients take cold often through sitting near cold walls, &c. The cause of the pain is probably, primarily, the contraction of the pale muscular fibres of the skin, the stagnation of blood in their capillaries; the hot aching pain which succeeds, being due to reaction and dilatation of the vessels: the one efficient cause of rheumatic pain in general, being deficient flow of blood through the affected parts. With regard to treatment, the author thought that no satisfactory results could be ascribed to colchicum, in large or small doses. Warm baths are useful in some cases. Nitrate of potash had proved useful in the hands of some, but he thought the iodide of potassium had a stronger claim to efficiency. Guaiacum, aconite, opium, steel, and cod-liver oil, all

prove useful in some cases; and the local application of heat by packing in wet sheets, blisters, sinapisms, heated irons, red flannel, and red merino, also. The indication appears to be, to restore the strength of the individual, and the vigour of his circulation. In the most troublesome form, pain in the plantar fascia, was removed by perfect rest and galvanism.—[*Liverpool Medico-Chirurgical Journal.*

Lactate of Zinc in Epilepsy.

Dr. Herpin's name is familiar to the medical profession on account of his urgent advocacy of the employment of oxide of zinc in the treatment of epilepsy. He now abandons this preparation entirely in favor of the lactate of zinc. The greater solubility and digestibility of the latter would *à priori* engage our sympathies in its favour. The following is one of the cases which have decided the author's preference, and deserves to be recorded on account of the success obtained in spite of the unfavourable prognosis which the case would have justified in the first instance.

Miss E., aged eleven and a half, consulted Dr. Herpin, February 1st, 1854. She was well made, intelligent and pleasing. Her paternal grandfather had died epileptic at forty-nine years of age; her maternal grandfather at seventy-six, after being insane for six years, and in a state of melancholy for forty years. No predisposing or exciting cause was traceable in the patient, excepting perhaps the fright caused by a fire two months previous to the first attack. She enjoyed excellent health till six years of age, when she had typhoid fever, having on the right side a tendency to slight and evanescent deafness. Three months before the first seizure she was attacked with frequent headache, generally commencing in the morning, and lasting till evening. The headache ceased in December, 1853. The first fit occurred on August 15, 1853, the second on September 5, the third on September 26; six then followed at variable intervals, making altogether nine in less than five months; they always took place during the first hour of sleep, and the evening before the attack she was observed to be somewhat excited. The symptoms, which are detailed, leave no doubt as to the attacks having been those of genuine epilepsy. The oxide of zinc had been prescribed for the patient from September to the following July, but she was unable to bear the doses which Dr. Herpin thinks necessary in order to make a proper impression upon the patient. He was once able to reach a dose of six grammes (ninety grains) per week, but he was obliged to diminish it. Still the attacks ceased, from January the 8th to July the 18th; but a return on that day, brought on by a tepid bath, induced M. Herpin to have

recourse to the lactate of zinc, which he gave for above six month, during which time the patient swallowed 306 grammes (4600 grains). The tolerance of the remedy was complete, and when she left off taking it, she was in perfect health. There was one recurrence of epilepsy two months after commencing the lactate. Three years have since elapsed, and the lady's health continues sound.—[*L'Union Médicale*, and *British and Foreign Med. Chir. Rev.*

Observations on Diabetes Mellitus, especially with regard to the Changes of Temperature occurring in this Disease. By Dr. Lomnitz.

On twenty-one successive days, 24th October to 13th November, 1856, Dr. Lomnitz carefully examined the temperature of three diabetic patients in the hospital at Göttingen, by introducing the bulb of a thermometer into the arm-pit and into the mouth. The observations were taken morning and evening, and each time the frequency of the pulse and respiration, as well as the amount of urine passed in twenty-four hours, and its specific gravity, were noted. Two of the patients were females, and respectively thirty and thirty-six years of age; the third, a young man, was nineteen years old. On comparing the average of his results with the temperature of healthy individuals as determined by Barensprung, he finds that the diabetic patients suffer an average reduction of 1·07° Réaumur (2·4° Fahrenheit) in the arm-pit, and of 0·39° Réaumur (0·8° Fahrenheit) in the mouth. The author sums up his observations thus:—1. The temperature of a person suffering from diabetes mellitus is lower than that of a healthy individual. 2. The diminution of temperature is not progressive, but persists at a definite point, acquired at a stage of the disease which has not yet been determined. 3. There is no relation between the loss of temperature and the alterations in the pulse.—[*Henle und Pfeuffer's Zeitschrift*, and *Brit. and For. Med. Chir. Review.*

On the Treatment of Menorrhagia with Ergot. By J. McF. Gaston, M. D., Columbia.

The author of this paper, after giving to Dr. Churchill the merit of having first pointed out the value of ergot in menorrhagia, relates his own experience upon the subject. He tried it at first (1846) in the case of a young lady who had suffered from profuse flow of the menses for a considerable period, and under the use of the remedy she completely recovered, married, and had a family. The ergot was given with carbonate of iron, in doses of five grains of each, three times a day. Dr. Gaston

has found the use of the ergot followed by beneficial results in every subsequent case of menorrhagia in which he has prescribed it. He has latterly given it in infusion, combined with the tincture of the sesquichloride of iron, which he thinks a preferable form of administration. When much nervousness was excited valerian was combined with the ergot; and when there was great pain, opium was added with advantage. A discharge somewhat similar to menorrhagia occasionally occurs within the second month after delivery, which, if continued, may enfeeble the patient; and in such cases Dr. Gaston has employed the ergot and iron with excellent effect. The ergot is of course contra-indicated in pregnancy, unless it should be desirable to dislodge the fœtus. In a case of hæmorrhage, about the fifth month of pregnancy, which threatened to prostrate the patient, Dr. Gaston gave the ergot in doses of five grains, with one grain of opium, every two hours, and only three doses were taken when the child was expelled and the hemorrhage ceased.

[*Charleston Med. Jour. and Review.*

Sulphuric Acid and Sulphate of Zinc as a Caustic Agent.

There is an important chemical principle involved in the application of sulphuric acid for the destruction of living tissues, which is that the acid mainly acts upon organized matters, by its powerful tendency to combine with the elements of water contained in them, so that the carbon is left free, forming the black charcoal-like mass with which we are familiar as the result of its action upon all such tissues. Now, the more concentrated is the acid, in its liquid form, the greater is its power to decompose animal or vegetable tissues by abstracting the elements of water. It is desirable, therefore, in adding material to the acid for the purpose of giving it the form of paste, that the substance employed should not be an organized matter capable of furnishing water to the acid, and so weakening its caustic power, but a substance which should add fresh caustic power, so as to produce a combination possessing the greatest possible degree of caustic force. The dried sulphate of zinc suggested itself to Mr. Henry Thompson as such a material; and upon trial it has fully answered his expectations. He prepares it as follows:

"The ordinary sulphate of zinc is to be dried in an oven or sand-bath, so that the water of crystallization is driven off, and a whitish powder remains. Enough of this is to be added to some strong sulphuric acid, in order to make a semi-fluid mass of consistence sufficient to prevent its running beyond the spot on which it is placed. The mixture should be kept in a stoppered bottle, and be applied with a small glass spatula or rod. Before using it, the surrounding parts should be protected by a

thick layer of cerate or firm ointment, so as to form an embankment limiting the surface to be destroyed, and a layer of the caustic may be made upon this of about the eighth or tenth of an inch in thickness. This is allowed to remain. As in the case of other caustics, I believe, the pain is less in the superficial than in the deeper diseased tissues."

One advantage of this combination consists in the ease with which it is prepared, and the facility with which its constituents may be obtained.—[*Lancet.*

On Obstinate Vomiting.

Various means have been proposed against vomiting during pregnancy, in hysteria and other circumstances. Several French physicians have lately tried with success, in many cases, some remedies either too neglected or quite new. During pregnancy vomiting has been stopped by the use of a portion of tincture of iodine (10 drops), iodide of potassium (10 grains), and 120 grammes (4 ounces) of water and syrup. This prescription has been employed by M. Becquerel. A physician of the south of France, M. Bacarisse, has made use of iodide of potassium alone, which he thinks to be more successful than tincture of iodine. Professor Buisson, of Montpelier, has tried three remedies: tincture of iodine with alcohol (a remedy much spoken of in Germany); iodide of potassium alone, and with tincture of iodine. With the first of these three medicines he has seen an increase of the vomiting; with the second, vomiting has hardly diminished; with the third it has completely ceased. He has made this trial three times. Dr. Martin Magron, of Paris, has employed successfully dry cupping on the spine, and in a case of obstinate hysterical vomiting, he has succeeded at every fit in stopping the vomiting by this mode of treatment. In a case of paraplegia, with convulsive fits and vomiting, he has succeeded a great many times, in stopping at the same time the vomiting and the fit, by cupping applied on the spine and slight bleeding.—[*Virginia Med. Journal.*

On the Use of Chloroform in Certain forms of Paralysis. By M. Landry.

M. Landry terminates a long series of papers with the following conclusions:—1. There exists a group of paralyses of the motor powers, offering the following general characters. There is preservation of muscular irritability and of the excitability of the nervous trunks, integrity of muscular nutrition, and absence of reflex motion, of spontaneous convulsive movements, of contractions, of fibrillary contractions, and of trembling in parts actually deprived of voluntary motion. 2. In this group may

especially be ranged hysterical paralysis and sympathetic paralysis, generally confounded together under the common denomination hysterical. 3. Some of these paralyses disappear during sleep, and immediately yield to the action of chloroform (probably also of ether) and narcotics. Others undergo no modification under such influences. 4. The former appear to belong to the category of sympathetic paralyses; the latter to that of hysterical paralysis, properly so called. 5. These phenomena constitute a means of diagnosis of true hysterical paralysis. 6. They serve to distinguish in all cases the paralyses in which they are observed from those which are dependent upon organic, nervous or muscular lesion. 7. Narcotic and anæsthetic agents may be employed in the treatment of paralysis, whether as curative agents, palliatives, or simple auxiliaries.—[*Mon. des Hop.*, and *Med. Times and Gaz.*

The Doctrine of Elimination, as propounded by recent Authors.

Dr. Thomas Inman has published (*Liverpool Medico-Chirurgical Journal*, July, 1857), a very interesting paper on this subject, in which he inquires: 1st. What the doctrine of elimination is. 2nd. The arguments in its favour. 3rd. The plan of treatment it leads to. And he endeavours to show—

"1. That the processes by which poisons are expelled from the body are passive, rather than active.

"2. That evacuations, emanations, or eliminations, are not to be considered as 'salutary efforts of nature to cure,' but as symptoms of the normal nutrition being modified by a new force.

"3. That it is dangerous in diseases of a humoral origin, to act upon an eliminant plan of treatment principally.

"4. That the mode of treating diseases, depending on the presence of poison, is to enable the system in general, or any organ in particular, to resist its action or tolerate its presence.

"5. That anything which depresses the vital powers, makes an individual more susceptible of foreign influences.

"It is not simply a pure condition of the blood that is necessary to health; for man may have the most healthy blood possible, and yet die of cold; while those whose blood is vitiated by tuberculosis, cancer, the paludal or gouty poison, may appear to enjoy perfect health, for a lengthened period, if not for the ordinary duration of life. No medicine, therefore, whose sole aim is to purify the blood, and no plan of treatment simply eliminative, can be expected to have more than temporary, or accidental success.

"There is, however, one plan for the elimination of all poisons, with which we feel bound to concur. It is that which

places the patient in the midst of pure air and lovely scenery; which takes him from the turmoil and wearing activity of business, and gives him mental repose; which supplies him with nutritious diet, and abundance of the finest water; which procures sound rest at night, without any other opiate than healthful exercise; and which does not scour out the bowels by a daily purge.

"In this way, we believe health may be regained, and poison be expelled; for there is in every living being a necessity for a constant renovation; old materials are daily being replaced by new; and when the increments are all healthy, and all old materials are being expelled, it is a necessary consequence that the body should have as sound a constitution as it is possible to attain."—[*American Jour. of the Med. Sciences.*

Perchloride of Iron in the Treatment of Erysipelas.

The use of perchloride of iron in the treatment of erysipelas has lately been brought again into notice by the publication of a thesis by M. Louis Mathey, and by some observations made by M. Aran, physician of the Hôpital St. Antoine in Paris. M. Mathey relates ten cases of erysipelas treated with this medicine, and his conclusions are contained in the following remarks:

The action of perchloride of iron on erysipelas is evident, and the course of the disease is modified a short time after its administration. In fact, on the second day, and sometimes even on the first, M. Mathey has seen the disease become limited and circumscribed, and its further progress arrested. As to the duration of the disease, the effect of the perchloride is still very remarkable: not only is the progress of the erysipelas sensibly modified from the first few hours which follow the administration of the medicine, but it is completely arrested; the radical cure of the disease is obtained in a very short time. It was observed that in ten rather severe cases of erysipelas treated by the internal use of perchloride of iron, three were cured in two days, three were cured in three days, two were cured in four days, one in five days, and one in seven days. It cannot therefore be denied that erysipelas is advantageously modified by the internal use of chloride of iron; that the cessation of the symptoms proper to erysipelas is sometimes very rapid after the administration of this medicine; that in a series of ten observations made upon varied cases, this treatment never failed; that even where its efficacy may be doubted it has never given rise to any bad symptom; and that when administered in the dose of 30 drops to a healthy subject, it has never given rise to any painful sensation, and has never produced any notable functional disturbance.

M. Aran agrees with M. Mathey in never having observed

any unfortunate result from the administration of the perchloride of iron in larger doses than those employed by M. Mathey—namely, thirty, fifty, sixty, and one hundred drops a day, in certain exceptional cases. But a wider and more extensive experience of the employment of the perchloride has shown him that there are particular circumstances which favour the action of the medicine. M. Aran believes that it would be vain to expect advantageous results from the administration of perchloride of iron in all cases of erysipelas. He is convinced that some cases of erysipelas will not yield to this remedy; as, for instance, the cases which occur in young, strong, and robust subjects of a sanguine temperament, and which are accompanied by a well-marked imflammatory action. On the other hand, the cases of erysipelas which are developed in feeble, delicate subjects, of a well-marked lymphatic or scrofulous temperament; in individuals already weakened by previous disease; the cases especially which exhibit with well-marked tendency to spread, the œdematous form; and in which, even with a marked acceleration of the pulse, the arterial throbs are weak and easily depressed, or when fever is completely wanting, as happens sometimes in old persons; these cases are remarkably modified and often arrested in twenty-four, thirty-six, or forty-eighth hours, by the administration of the perchloride. The erysipelas, which is still more atonic, and which supervenes in the course of serious diseases, around punctures, abrasions, or lacerations of the skin, at other times even without appreciable causes, are amenable to the perchloride of iron. Lastly, the cases which, even when they show themselves in strong and robust subjects, after having been reduced by various and appropriate treatment, still linger on and pass from one part to another, throwing out unexpectedly its eruptions in places where the disease appeared to have been long extinguished; such cases are often terminated in 24 hours by the perchloride of iron.

Another point connected with this subject is the propriety of administering the perchloride as a prophylactic. "There are certain epochs and years," says M. Mathey, "when cases of erysipelas of a traumatic origin are multiplied to infinity, and show themselves in such great number, that the disease is truly epidemic. The application of a seton, a moxa, or a blister, is followed by erysipelatous inflammation; and *à fortiori*, the great wounds united by sutures and bandages of diachylon are almost infallibly attacked with the disease. The surgeon who operates under these circumstances is pretty sure to see erysipelas among his patients. It would perhaps be proper to postpone the operation, but sometimes the case is urgent, and the surgeon would think himself fortunate and could act with more confidence if he could hope to put his patient beyond the reach of a trouble-

some complication; might we not, for the first few days which follow a delicate operation, and during which inflammation is to be feared, unite with soothing beverages some drops of perchloride of iron, because it is fully established that its use in moderate doses is not followed by any bad effect?"—[*Bull. Gén. de Thérap.* and *Brit. and For. Med. Chirurg. Rev.*

Experiments with Bibron's Antidote to the Poison of the Rattlesnake, &c. By WILLIAM A. HAMMOND, M. D., Assistant Surgeon U. S. Army.

Some four years since, Prince Paul, of Wurtemberg, the celebrated naturalist, communicated to my friend, Mr. De Vesey, the results of some experiments performed before the French Academy of Sciences, by Professor Bibron, relative to an antidote to the poison of the rattlesnake. According to Prince Paul, Professor Bibron allowed a rattlesnake to bite him in the lips, cheeks, etc., and by taking the antidote discovered by him, prevented all alarming symptoms, and in fact suffered no inconvenience therefrom.

The antidote in question, as stated by Prince Paul, is prepared according to the following recipe:

℞. Potassi iodidi, gr. iv.; hydrarg. chloridi corros., gr. ij.; bromini, ℥v. M. Ten drops of this mixture, diluted with a tablespoonful or two of wine or brandy, constitutes a dose, to be repeated if necessary. It must be kept in glass-stoppered vials, well secured.

Prince Paul forwarded a small quantity of the above mixture to Mr. De Vesey, who used it successfully in the cases of two men bitten by rattlesnakes near his residence in Iowa.

During a recent expedition to the Rocky Mountains, I had several opportunities of testing its efficacy, and, since my return, have performed additional experiments with it. The results have been, upon the whole, exceedingly satisfactory, and I think that, when taken in time, it may be entirely depended upon in the poisonous wounds of the rattlesnake, and perhaps also in those of other venomous serpents.

First Experiment.—Heinrich Brandt, acting hospital steward, was bitten on the 2nd of July, 1857, in the index finger of the right hand by a large rattlesnake (crotalus confluentus), which he was in the act of putting into a jar for preservation. The snake inflicted a very deep wound, and hung by his fangs to the finger for a second or two before it could be detached. About four minutes after the bite, and before much pain or swelling had ensued, I administered one dose of Bibron's antidote. The symptoms almost immediately disappeared. Forty minutes after giving the first dose the pain and swelling returned, attended

with considerable throbbing. I repeated the medicine, and in less than five minutes the finger had regained its natural appearance, and all pain and swelling had vanished. He remained perfectly well, and resumed his duties in an hour from the reception of the injury.—[*American Jour. Med. Sciences.*

Influence of Atmospherical Changes in Determining the Recurrence of Paroxysms of Asthma.

Dr. A. W. Nichols has presented, in a tabular form, the successive paroxysms of asthma occurring in a case under observation at the Buffalo Hospital of the Sisters of Charity, in the service of Dr. Flint, from December 3rd to February 17th. During this period seventeen paroxysms occurred. The date of each paroxysm—the time of the day when it took place—the degree of severity, duration, remedies employed, and the apparent effect, as well as the state of the weather, are noted in the table referred to. The paroxysms generally came on during the night or early in the morning. They did not observe any rule of periodicity. They were variable as regards intensity, and were usually much more severe after any decided change in the atmosphere. Almost all of the variations in the weather were from a cold and dry to a warmer and moister atmosphere. It is also to be noticed that no paroxysms occurred after or during certain decided atmospheric changes, as great as those which, at other times, were followed or aocompanied by asthmatic attacks. The paroxysms, even when most severe, and when not influenced by remedial agents, did not continue longer than twenty hours. The inhalation of chloroform produced more marked relief than any other measure employed. The paroxysms were apparently abridged by it; the difficulty of breathing was diminished; the patient was able to assume the recumbent posture, and natural sleep soon succeeded. This was the result in six paroxysms in which it was tried. The dry bronchial râles were diminished in a few minutes after breathing chloroform.

[*Buffalo Med. Jour.* and *North American Med. Chir Rev.*

Rules Respecting the Treatment of Primary Syphilis.

It seems to be now pretty generally acknwledged, in hospital practice, that mercury should be given only in those cases in which the chancre presents marked induration, and that in all others secondary symptoms should be waited for before having recourse to specific treatment. In a large majority of sores not attended by induration, no constitutional phenomena will follow; and to discriminate between those likely to be so followed

and the harmless class is admitted to be impossible. There is, therefore, no alternative, except we would give mercury very often unnecessarily, but to wait in these cases until the real nature of the affection shall have been made manifest. In the non-indurated class local stimulants, as sulphate of copper, lunar caustic, or the acid nitrate of mercury, are the old and still favorite remedies. If the chancre be seen within a week of its origin, whether induration have already commenced or not, we believe most surgeons would destroy it freely either by nitric acid or some other caustic.—[*Omodei Annali Universali*, and *Med. Times and Gazette.*

Influence of Pregnancy on the Development of Tubercles. By Edward Warren, M. D., of Edenton, North Carolina.

This subject is discussed by Dr. Warren in an essay to which was awarded the Fiske fund prize, June, 1856. The essay was published by request of the Rhode Island Medical Society. The author divides the investigation into three heads, thus—1. A consideration of the tubercular diathesis. 2. An inquiry into the nature of the tubercle. 3. An application of rules respecting disease already established. In view of the length of the essay, and the limits to which this review must be restricted, we can only present a summary of the several points of the argument by which the author endeavors to prove that pregnancy prevents the progress of phthisis even when fully developed.

"(1.) There is an inequality in the relations which men and women sustain to phthisis; the former being less liable to it than the latter.

"(2.) This inequality depends upon certain differences of conformation, etc., which are *plain, palpable, and conspicuous.*

"(3.) An examination of phthisical statistics should show that more women fall victims than men, and that the difference in the relative mortality of the two is as *plain, palpable, and conspicuous*, as their original dissimilarity of constitution and predisposition.

"(4.) An examination of statistics proves, that *it is not* a settled *fact* that more females are destroyed by this malady, and that there is a positive approximation toward *equality* in the effects of phthisis upon the two sexes.

"(5.) This 'approximation toward equality' shows the operation of some great equalizing cause, by which a certain amount of protection is secured to the female system that makes up for its greater original susceptibility, and affects the general result in the manner alluded to above.

"(6.) Pregnancy complies with *all* the conditions which this

cause demands for its operation, and it is fair to attribute this protecting, preventing, and equalizing effect to its influence upon the female system."—[*American Jour. of Med. Sciences*, and *North American Med. Chir. Review.*

After Treatment of Surgical Operations.

Dr. Broadbent, in a paper read before the Liverpool Medical Society, session 1855–56, referred to the object sought—that of union by the first intention. He believed one most common obstacle to this union to be the occurrence of hemorrhage, one or two hours after the operation; not to such an extent as to require the removal of the dressings, but sufficiently to form a coagulum of such a size as to seriously interfere with the union of the wound—acting, in fact, as a foreign body. The cause of this appeared to be, that in amputations, &c., when the surfaces were brought together immediately after the completion of the operation, the vessels were tied while the patient was still suffering from the shock of the operation, or it might be, was somewhat depressed by the after-effect of chloroform, whilst the more minute vessels were prevented from oozing, by their exposure to the air, and that when reaction took place, the hemorrhage came on. The author thought that those cases in which this occurred to such an extent as to necessitate the re-opening of the wound, usually terminate more favorably than others. He therefore advocated the plan of postponing the dressing until all oozing had ceased, and the cut surfaces had glazed over. The unnecessary removal of dressings, he believed to be another frequent cause of non-union. He thought that the sutures having been removed, the bandages, &c., should remain untouched till the third or fourth day, and should then be carefully cut off. The inability of the patient to maintain the required position, acted in the same way, and to obviate this, it was suggested that the patient should, before the operation, be habituated to the position in which he would have to lie after it. In the maintenance of the position of the parts, by means of pressure, the author believed that small air-cushions might be advantageously used, instead of pads of lint.—[*Liverpool Medico-Chirurg. Journal.*

Diagnosis between Cancer and Condylomata.

A young married woman is now under Mr. Lloyd's treatment in St. Bartholomew's, whose case well exemplifies the need for great care in expressing opinions as to the nature of growths which have the slightest resemblance to cancer. She was

originally admitted about nine months ago for some small indurated tubercles on one labium, not at all dissimilar from condylomata, of more than usual hardness. There were three, and they were quite distinct from each other. This fact together with the patients age and good state of health, induced many to believe them of syphilitic origin. Mr. Lloyd, however, held a contrary opinion, and determined to excise them. This was done, and on microscopic inspection the elements of epithelial cancer was detected in abundance. The woman left the hospiwell, but she has now returned, with a recurrence of undoubted cancerous ulceration in the same site. The glands in the groin, being enlarged, have been excised.—[*Med. Times and Gazette.*

EDITORIAL AND MISCELLANEOUS.

Professional Correspondence.—We are sometimes called upon to write letters of advice, and to present our views in relation to certain diseases, where an amount of reflection and consideration is required, almost equal to that which would be necessary to prepare a regular essay upon the subject in question. As these letters often occupy the time which should be appropriated to our Editorial department, we have deemed it but fair to answer some of them editorially. As they generally refer to subjects of immediate and daily interest to the practitioner, their occasional appearance in these pages may be found acceptable to the profession, more especially to our friends, the younger members, notwithstanding the informal and often imperfect manner in which the views and suggestions may be presented. Most of these letters will be written in answer to queries propounded by recent graduates of the Medical College of Georgia; if, therefore, they sometimes assume a *didactic* tone, other readers will remember that they are then, but the words of the teacher to those who were but recently his esteemed and attentive pupils.—[Edts.

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Dr. R. Campbell,

Dear Sir,—You remember sometime last winter, I requested you to give me your treatment for *Typhoid Fever*. I suppose it has escaped your memory. When I subscribed for the Medical Journal, I mentioned it to your brother (Prof. Henry Campbell); he said I would find it in the Journal, but I have failed to do so, unless it was in the April number, which I did not receive.

This is undoubtedly the worst country for typhoid fever I ever heard

of. Every case of sickness I hear of, the doctors pronounce it typhoid fever. Hoping that you will comply as soon as you conveniently can,

I remain, your obedient servant, * * *

—

Augusta, Ga., June 15th, 1858.

Dear Sir,—Your request for my Treatment of Typhoid Fever, is before me. The requirements of the case will not permit me to be very brief; yet, on the other hand, there being some limit to an epistolary communication, space may not allow me to particularize with absolute definiteness, so that what I may hereinafter say, you will please regard as *a basis of hints*, rather than a complete and thorough detail of management for this disease.

First: you must understand that this disease is of long continuance, and is also self-limited in duration. That is—start out to deal with it, under the firm and full conviction, that you *cannot cure it;* and this conviction, if honestly maintained, will save the life of many a patient. Let the patient and the disease alone, so long as they appear to agree together very well, without the latter taking advantage of the former by attacking him at any particular vital point, and you will find that generally, the patient will outlive the fever, *unless he started out to die.*

Secondly: should the disease attack with violence a vital organ, as brain, lungs or bowels; or to speak more properly, should these organs not possess sufficient force of vitality to resist the enervating and disorganizing influence of this condition, it will become necessary to fortify them by remedial means directed thereto, also by supporting the general strength, and thus assist the recuperative powers of the system.

Then, should the *brain* become the seat of congestion, you may drive it out, and keep it out, at the same time giving tone to the vessels, by the frequent, though not too severe, application of the *cold douche to the head.* Should the parenchyma of the *lungs* be the seat of engorgement, sufficient to embarrass their function, as manifested by partial or complete occupation of the air passages with mucus—as shown by auscultation and percussion, as well as by the extreme frequency of the respiration—treat the case according to Behier's plan, (see March No. of Southern Med. and Surg. Journal,) viz., with *extensive and repeated dry cupping to the chest*, and use *turpentine* to give tone to the mucous tissue of the lungs, and prevent or suppress inordinate secretion or exudation. Should the *mucous membrane of the small intestines* give way, at, or in the vicinity of Peyer's glands, which sometimes happens, though not invariably (as is supposed by some), give turpentine as the best known means of arresting the disorganization of this tissue, and to stimulate its recu-

perative energy. This can be materially assisted by keeping a small blister—the size of the hand—open, upon the right iliac region.

But if you have not the forbearance and firmness to stand by a case of typhoid fever, which is running its course harmlessly, without interfering to diminish the patient's strength, and with it, his chance of recovery, you had better forego all the reputation you may expect to gain by your professional enterprise in this quarter.

Is typhoid fever, then, a disease *not* requiring the regular attendance of the physician? Far from it. It is one above most of diseases, demanding his especial supervision and untiring watchfulness.

1st. He must guard the patient, that he does nothing himself, and that nothing be done for him or with him, by others, to jeopard his chance of recovery.

2nd. He must see that he is placed and kept in the most favorable circumstances as regards bodily comfort, temperature, ventilation, &c.; bodily wants—as diet properly and judiciously ordered, limited and adapted to the stages of the disease; also, as regards the application of stimulants and *when* to be used.

3rd. He is to watch and listen with a sentinel's eye and ear the distant approach of those insidious complications, to which we have referred, and which are sometimes the result of this disease, in one or more of the vital organs; and begin early to assist the patient's constitution to withstand or overcome them.

The patient with typhoid fever seems to me to be poised with fearful precision between life and death. If he maintains his ticklish position through this protracted crisis, he is safe; but how awful it is, to see what a little influence may jostle him from it. He may not *drop off* suddenly, but that little influence, even *one* injudicious dose of active medicine, in the beginning of the attack, may prove the source of his gradual, but inevitable decline and final *fall*.

Therefore, beware of treating this disease *actively*, even in the beginning. Especially exclude *purgative medicines*, which are detrimental in various ways.

One of the first and the most prominent symptom throughout the disease, is *weakness*, or loss of vital energy. The vitality of the fluids, as well as of the solids, is below par. Depletion increases the impoverishment of the fluids and the approach to necræmia; and from this condition of the blood, probably, results the extreme loss of nervous power in this disease. The patient seems completely enervated: very slight muscular effort seems, often, entirely to overcome him, so that rising up in bed quickens the pulse, and if frequently repeated, will often seriously damage the prospects of the case. Therefore, the mere

effort to get up to stool, frequently, should be avoided, and purgatives withheld for this reason, if other more valid objections did not obtain. I have seen a convalescent relapse for two weeks, from walking across the floor to change his bed.

Purgatives given early in typhoid fever are apt to determine to the bowels, in the latter stages, by deranging them and rendering them enfeebled and more susceptible to the influences which manifest themselves in this portion of the organism, as the most common form of complication or organic implication, occurring in this disease. And who can say, but that the bowel affection is in many instances determined by this treatment in the incipiency of the attack. If the alimentary canal requires clearing out, a simple dose of castor oil would probably accomplish it without irritation or depletion. But I would express here, my unfeigned disapprobation of the abominable plan of purging every patient, in every disease, as a necessary preliminary to any other treatment. In typhoid fever, it is productive of positive mischief, by precipitating the result of an existing predisposition, viz.—to intestinal disease: whereas, in paroxysmal fever, often, valuable time is lost in waiting for the operation of active medicines, to the delaying, or entire exclusion of the only important element of treatment.

Thus, you perceive, that as for the treatment of typhoid fever, it is a disease that requires more watching than active interference. But if there is one remedy in the catalogue of the Materia Medica, which seems to be adapted to this condition more than another—if there is anything which seems calculated to relieve the complications which generally arise in this disease, or to prevent them ere they make their appearance—it *does* seem that *that* agent is TURPENTINE.

Dr. Thomas Smith, of London, wrote ninety pages upon the good effects of turpentine, and some were disposed to smile at his credulity; but I rather think he was right.

The turpentine treatment of typhoid fever has been long in vogue. The name of Professor Wood, of Philadelphia, is particularly associated with this treatment, inasmuch as he recommends it highly, and advocates strongly its advantages above all others in certain stages.

I have used this treatment for six or eight years, and whether from its positive advantages, or from the benefit derived from the exclusion of all other medication, there has certainly been the greatest improvement in the success of my practice upon this disease during that period.

It sometimes happens that typhoid fever, in its incipiency, is mixed up with paroxysmal fever. These cases require quinine to rid them of this paroxysmal complication—which it does—leaving the continued fever to pursue the even tenor of its way. I sometimes give quinine in

moderate doses, three times a day, and continue its use for a length of time, varying the quantity with the degree of necessity for its continuance—in those cases which have a tendency to congestion, or to passive hemorrhages—because I believe that quinine acts upon the vascular tissue, to give it tone or contractility; and I have seen many good results from the continued administration of considerable doses of quinine under such circumstances.

The mode in which I have found it convenient to administer turpentine in typhoid fever, is by the following emulsion:

℞ Turpentine, ... ʒss.
Loaf Sugar, ... }
Gum Arabic, ... } *aa* ʒj.
Comp. Spts. Lavender, . . . }
Bi Carb. Soda, ... }
Camphor Water, ... q. s.
To make an 8 ounce Emulsion.

Dose—For an adult, 1 tablespoonful three times a day (well shaken), and so continue.

To begin with the turpentine early in the attack, seems to lessen the danger to the bowels, and also to the lungs.

I have often seen the bowels, discharging large watery stools before the use of this emulsion, become even constipated under its use, by relieving the local affection. I have continued the emulsion in many cases from my first visit to a patient, until he was discharged.

If there should be much diarrhœa, and the emulsion does not check it, I give 5 grains sub. nit. bismuth in a spoonful of water, after each passage. The most convenient mode of administering the bismuth, I find is in an aqueous mixture, viz:

℞ Sub Nit. Bismuth, ... grs. 80
Water, ... ʒij.
Mix in two ounce phial.

Shake until well mixed at each dose, and give one teaspoonful after each passage.

If this does not have the desired effect, I add a small quantity of laudanum—from 10 to 20 drops. I dislike the too free use of opiates in typhoid fever: I think they are calculated to bring about coma or delirium in the latter stages.

The bismuth, in connection with the turpentine treatment, will generally check the bowels as promptly, or even more speedily than opiates. When there is diarrhœa, I invariably put a small blister over the right iliac region, and keep it open if possible, until this symptom disappears. I always examine this region, whether there is diarrhœa or not, and if I

find tenderness upon deep pressure with the hand, or meteorism, I take it for granted that the diarrhœa is not far off, and apply the blister and put the patient upon the treatment above mentioned.

You will generally find that the comp. spts. lavender, in the emulsion, will prevent *subsultus tendinum* in a great measure; but if this phenomenon should appear, add to the course, a teaspoonful of the tincture of valerian (for an adult,) every three or four hours, until relieved, and repeat *pro re nata.*

I give this tincture also, to quiet restlessness, sleeplessness, and slight delirium, in these cases. Sometimes a Dover's powder (10 grains,) at night is necessary to induce sleep.

In the earlier stages, when the skin is very dry and hot, great benefit may be derived from the thorough application of lard ("bacon-rind") to the surface of the patient's body and limbs. It has a very cooling and soothing effect. This valuable fact I gained from my friend, Dr. P. D'L. Baker of Alabama. The patient may be greased all over, once or twice a day; or, whenever his skin becomes very hot and dry, or he seems very restless; that is, if it can be done without giving him the least fatigue, or causing the least muscular effort: for, recollect, that nothing should be done that requires the patient to rise up or to move. I have a patient now, who got his pulse up very high the other day, by simply fanning the flies off of himself, for a little while. I mention this forcible example to show you, how little muscular effort it would take, either by getting up to stool often, or otherwise, to kill a patient with this disease. Thus, a patient with typhoid fever, should never be allowed even to get up to stool, if it could be avoided; and there exist the best of reasons for this, but time and space forbid my entering upon the pathology here. I will, therefore, cite you to my brother's contributions upon this subject, in his volume entitled "Essays on the Secretory and Excito-Secretory System," article, "Typhoid Fever."

If the bowels should remain constipated for too long a time, they should be relieved by warm-water enemata.

At a variable length of time from the beginning of the attack, sometimes ten days, or two or three weeks, the skin will become cool, or even sometimes alarmingly cold. It is sometimes proper to give stimulants before this stage comes on, when, for instance, the adynamic character of the disease is very apparent in the first stage, or if accompanied with passive hemorrhage—i.e. *brandy with quinine:* but stimulants are generally imperatively demanded, when the cold stage has set in. Some cases only require port wine, with which I often combine comp. tincture of cinchona, three times a day, in doses of from one to two ounces of the former, to two to four drachms of the latter for an adult, diminishing

in proportion to the age of younger subjects. Other *extreme* cases require brandy almost without limit. It is astonishing sometimes to see what immense quantities of brandy may be poured down a patient in this very low condition, without his system appearing to recognize that it is a stimulant.

The dietetic and regimenial conduct of a case of typhoid fever is as important, and I believe, even more so, than the medicinal course. In the earlier stages the patient does not desire much nourishment—does not require much; and probably it would do him an injury to force him with much. Some light food, such as very fresh milk, well boiled with rice or arrow-root; grated cracker and hyson tea, &c., is as much as he will generally require; and care should be taken that he does not take too much even of these at a time.

In the latter stages, it is necessary not only to use stimulants, but a nourishing diet is demanded, both by the patient's improved appetite, and by his debilitated general condition. Sometimes the appetite is ravenous, and craving the most indigestible and injurious articles, the patient being often difficult to control, and this is a dangerous season on that account. The best form of nourishment under these circumstances is beef essence, and in the absence of this, chicken soup made with rice, seasoned with pepper. The patient should be allowed the free use of cold water—ice water, if practicable—but not to take too large a draught at a time. Sponging the body with cold water in the earlier stages, often affords great relief and improves the condition of the patient. He should never be allowed to lie upon the floor, or in an obscure corner of the room, inconvenient to be got at; but should always be supplied with a bedstead, placed in the most accessible part of the room—that he may be examined critically, in a good light, at pleasure, and without the disadvantages of a constrained position, or other embarrassments to the physician. He should be on a comfortable, soft bed, and should be turned over occasionally, or else he will have bed-sores—one of the most serious inconveniences attendant upon this protracted disease.

Above all things, he should be in a well ventilated room, and not near a fire, either in winter or summer. I believe many negroes die of this disease, from being kept in too close quarters, and exposed to the heat and smoke of a cooking-fire. The temperature of their apartments should be uniform and moderate.

When the patient is convalescent, do not allow him to indulge in any excess of diet, or exercise, for some time after his attack. I have been thus particular in dwelling upon these *minutiæ*, because in attention to

these things, which are ordinarily considered minor points, the treatment of typhoid fever principally consists.

Hoping that the hints which I have thus, so hastily and unsystematically, thrown together here, may be of convenience to yourself and benefit to your patients, I have the pleasure to remain,

Very truly, your friend,

ROBERT CAMPBELL.

Oglethorpe Medical and Surgical Journal.—In a recent number, we called attention to the prospectus of the *Savannah Journal of Medicine*; we have since received this new work, and find that it fully answers our expectations, both in the character of its productions, and the style of its typographical execution. We have now to acknowledge the receipt of the first number of the *Oglethorpe Medical and Surgical Journal*, which is to be published bi-monthly, in Savannah, under the editorship of Drs. H. L. Byrd and Holmes Steele, Professors in the Oglethorpe Medical College. The number before us presents a handsome appearance, both in the variety of its contents, and typographically. It contains 64 pages, and will be published every two months. We take pleasure in placing both the above journals upon our exchange list.

Medical College of the State of South Carolina. Resignations and Appointments.—"It is with extreme regret that we find ourselves compelled to announce the resignation of Prof. Geddings from the chair of Surgery, in the Medical College of the State of South Carolina. We understand, however, that the resignation has been proffered, and that the Faculty will, with whatever reluctance, feel themselves constrained to accept it.

"For twenty-one years Dr. Geddings has been associated with the above mentioned institution; a College which numbered him amongst the very first of its graduates, which showed its high estimate of his worth and abilities by unanimously offering him one of its earliest vacant chairs, and which has since owed a large measure of its popularity and influence to his labors and name."

In the words of the Charleston Medical Journal and Review, "we heartily wish him in his voluntary retirement from the labors of the desk, length of years, which cannot fail to bring with them coequal usefulness and honor."

The simultaneous retirement of Prof. S. H. Dickson, from the chair of Practice, constitutes a double loss to the College of two most able and popular teachers. Prof. Dickson has accepted the appointment to the chair of Principles and Practice of Medicine in the Jefferson Medical

College at Philadelphia, vacated by the death of the lamented Dr. J. K. Mitchell. This is the second time that Dr. Dickson has been called to and accepted a chair in a Northern school; we cordially wish him even more satisfaction and success in Philadelphia than he found in New York.

Appointments.—The *Charleston Mercury* reports, that at a meeting of the Trustees and Faculty of the Medical College of the State of South Carolina, held on the 19th of May, Dr. P. C. Gaillard was elected to the chair of the Institutes and Practice of Medicine in this institution, rendered vacant by the resignation of Prof. Dickson; and Dr. J. J. Chisolm to the chair of Surgery, made vacant by the resignation of Prof. Geddings. Both these gentlemen are favorably known to the profession.

University of Louisiana: Professorial change.—Professor J. C. Nott has resigned the Chair of Anatomy in this Institution, and Dr. T. G. Richardson, recently Professor of Anatomy in the Medical Department of Pennsylvania College, has accepted the chair thus made vacant. Professor Richardson is well known to the profession, as one of the able editors of the North American Medico-Chirurgical Review, and also as the author of a valuable work entitled "Elements of Human Anatomy; General, Descriptive and Practical." We wish our *confrere* every happiness in his Southern home, and should we miss him from the *North American*, we hope he may greet us some where else, still our prized and valued co-laborer in medical journalism.

Books received.—We have received the following works for review:

From Blanchard & Lea, Philadelphia—

Graham's Elements of Inorganic Chemisiry.

Miller's System of Obstetrics.

Peaslee's Human Histology.

Plates to Wilson on the Skin.

From Lindsay and Blakiston, Philadelphia—

Meigs on Diseases of Children.

Carnochan's Contributions to Operative Surgery and Surgical Pathology.

From the author—

Paine's Institutes of Medicine.

Paine's Medical and Physiological Commentaries.

Dr. Paine's Essays on Vitality and Remedial Agents.

From S. G. Courtenay & Co., Charleston—

Geddings' Lectures on Surgery, by Drs. Logan and Waring.

Besides many valuable pamphlets and minor communications, all of which shall receive due attention.

Dr. Eve's Address.—We have already expressed our high appreciation of the following address, in our summary of the proceedings of the last meeting of the Association; we now vindicate that opinion by presenting it entire thus prominently to our readers. We here copy from the Nashville Journal of Medicine and Surgery:

Gentlemen of the American Medical Association:

We meet under most auspicious circumstances, and have been welcomed to the most favorable position ever occupied by our profession on this continent. The very ground on which we stand may be considered sacred; has been set apart from a common to a special purpose, and is national. Invited as we have been to this magnificent temple, furnished and dedicated by a generous foreigner to science; in the presence of that towering monument, designed to commemorate the worth of him ever enshrined first in the hearts of his countrymen; surrounded by the glorious recollections constantly associated with this government; and before the great men and assembled wisdom of the nation; it becomes us to discharge the important duties which have called us together, with honor to ourselves and benefit to our profession. Inspired by its benevolent spirit, and invoking the aid of an ever present and omnipotent God to preside over our deliberations; we may here renew our professional obligations, learn to love each other better, and resolve henceforth to be more faithful to our high vocation, that its dignity may be maintained and its usefulness extended.

Knowing as I do full well the value of time in our short sessions, and how much is expected from this meeting, the half hour set apart for this customary address will be restricted to subjects appropriate to the occasion. From this stand-point in the history of our meetings, it is proper to recall what has already been achieved, that we may be better prepared profitably to engage in the labor now awaiting our deliberations. This summary of our transactions is the more necessary, since by a disastrous fire in 1851, the first four volumes of our proceedings have been destroyed, and are of course inaccessable to all new members: the last report of the committee on publication having announced the fact that not one complete set of them was now on sale.

The grand object of a convention of the physicians of the United States, held the previous year in the city of New York, was carried into effect in Philadelphia, May 1847, by organizing this Association; and just ten years ago, the first general assembly met in Baltimore. Since then annual meetings have been convened in our large cities for the transaction of business and the proceedings regularly published each year. Ten large octavo volumes now comprise the Transactions of the American Medical Association, being the contributions of its two thousand members delegated to represent the medical institutions of thirty States and Territories.

As set forth in convention, the ultimate purposes of this body are to cultivate and advance medical knowledge; to elevate the standard of medical education; to promote the usefulness, honor, and interests of the

medical profession; and collaterally to enlighten and direct public opinion in regard to the duties, responsibilities and requirements of medical men; to excite and encourage emulation and concert of action in the profession and to facilitate and foster friendly intercourse between those engaged in it.

In carrying forward these desirable changes, embracing as they do medical science, medical education, and medical ethics, no one believes that we have done every thing demanded for the good of the profession or that all our great designs could have been attained in the brief space of ten years. The work assumed by the Association, it was well known, would take time, labor, and united efforts. It comprehended higher requisitions for admission into a learned profession; prescribed the course of instruction; demanded a separation in the teaching and licensing power; proposed a code to regulate the intercourse between physicians, their patients and the public; and claimed that every one within its pale should assiduously cultivate the science of medicine and promote its best interests. And however extensive or radical may have been these, contemplated plans, still on the whole it can safely be assumed that the American Medical Association has been no failure.

It has advanced medical knowledge, and promoted the usefulness of the medical profession. There will be found in the ten volumes of its printed transactions, the results of the meetings held in Baltimore, Boston, Cincinnati, Charleston, Richmond, New York, St. Louis, Philadelphia, Detroit and Nashville, that no less than three hundred pages are devoted to medical education; over five hundred to hygiene, including the sanitary condition of many of our large cities; six hundred to botany and indigenous plants; one hundred and fifty to obstetrics; four hundred to medical literature; seven hundred and fifty to medical science proper; more than a thousand to surgery; and two thousand to practical medicine, including the epidemics and prevalent diseases of nearly every State in the Union.

Special reports have been made from committees appointed for the purpose, on the effects of anæsthetic agents, ether and chloroform; on the influence of tea and coffee on the diet of children and the laboring classes: on the supposed influence of the cerebellum over the sexual propensities; the results of operations for the cure of cancer; the introduction of water and gas into cities; two reports on the blending and conversion of types of fever; the action of water on lead pipes and the diseases proceeding from it; reflection of the uterus; a nomenclature of diseases adapted to the United States, having reference to a general registration of deaths; the sources of typhus fever and the means for their extinction; the permanent cure of reducible hernia; the topical use of water in surgery; the agency of refrigeration by radiation of heat as a cause of disease; the results of surgical operations in malignant diseases; the acute and chronic diseases of the neck of the uterus; the nature of typhoid fever; coxalgia or hip-joint disease; the treatment of morbid growths within the larynx; the sympathetic nerve in reflex phenomena; the medical and toxicological properties of the cryptogamic plants of the United States; erysipelas; the influence of the hygrometrical state of the atmosphere on health; the diet of the sick; pathology, causes, symptoms and treatment of scrofula; the preservation

of milk; the effects of alcoholic liquors in health and diseases; hydrophobia; the changes in milk produced by menstruation and pregnancy; the sanitary police of cities; treatment of cholera infantum; use and effects of nitrate of silver applied to the throat; strychnine; infant mortality in large cities, the sources of its increase and means of its diminution; medico-legal duties of coroners; new principle of diagnosis in dislocation at the shoulder-joint; the flora, fauna and medical topography of Washington Territory; the nervous system in febrile diseases; etc., etc.

Prizes have been awarded by the Association to the authors of the following essays, viz: On the Corpus Luteum of menstruation and pregnancy, for 1851.

On the variation of Pitch in percussion and respiratory sounds in physical diagnosis, for 1852.

On the Cell, its physiology, pathology and philosophy.

And on the Surgical Treatment of certain fibrous tumors of the uterus, heretofore considered beyond the resources of art, for 1853.

On a new method of treating ununited Fractures and certain Deformities of the osseous system, for 1854.

On the Statistics of Placenta Prævia, for 1858.

On the Physiology and chief Pathological Relations of the Arterial Circulation, for 1856.

On the Excito-secretory System of Nerves, in relations to physiology and pathology.

And on Experimental Researches in relation to the nutritive value and physiological effects of Albumen, Starch and Gum, when singly and exclusively used as food, for 1857.

Carefully prepared reports have been published by the Association of the various epidemics and diseases which have prevailed during the past ten years throughout our widely extended country, and the mortuary statististics and public health of our large cities minutely ascertained. Charts, maps, diagrams, tables and plates have been freely employed to illustrate these subjects, so important to the general welfare of the people. Every State and Territory, every large city and sick community, with scarcely an exception, has had its hygienic condition explored by this body; and dysentery and cholera, typhoid and yellow fevers have specially claimed the attention of our members. The communications on deformities after fractures, found in our eighth, ninth and tenth volumes, constitute the basis of the best monograph ever issued from the press. This work it may be predicted, will do more than all others to check the reckless and speculative spirit of suits for mal-practice against medical men; for in addition to teaching a useful lessen to the profession in the prognosis of fractures, its testimony is so conclusive in reference to the usual results of these accidents, that judicial decisions must hereafter be regulated by it.

Besides these contributions to medical knowledge, this Association has taken action to prevent the importation into our country "of worthless, adulterated and misnamed drugs, medicines and chemical preparations," for which a member of the United States Senate has publicly declared that if we had accomplished nothing else, this alone should have entitled us to the gratitude of the nation; it recommended to the different States

the adoption of a regular system of registration of births, marriages and deaths; memoralized Congress to secure steerage passengers in our emigrant vessels medical attention, and due amount of space between decks; appointed a committee to ascertain the best means of preventing the introduction of disease by emigrants into our large cities; and considered many interesting individual cases.

This is a mere index to what the American Medical Association has done for medicine during the first ten years of its existence. A simple reference to the professional facts spread out upon its pages, is abundant and satisfactory proof how extensive, varied and valuable are its contributions to medical science, and its ten volumes an overwhelming and congratulatory answer to the taunting proclamation of the Edingurgh Review of 1820,—"What does the world yet owe to American physicians and surgeons?" In September, 1854, the editors of the Association Medical Journal of Great Britian published our code, and declared that this body of physicians was the most enlightened representatives of the greatest medical constituency in the world, of which it would be presumptuous in them to speak in terms of praise. They said of the volumes of the *Transactions* already published, that the duties of the standing committees have been ably and thoroughly performed; that the progress of medical science as a whole, its prominent divisions into practical medicine, surgery and obstertics, carefully and accurately traced in a series of reports worthy of the highest praise, had been reported in a clear, concise and comprehensive manner, reflecting the highest credit upon the committees, and also upon the Assseiation in selecting them for their respective duties: and in regard to what has been done in the laborious investigation of the indigenous medical flora of the Union; examination into and reports upon the adulteration of drugs; the sanitary condition of the various States, and difference between them in the public health; the study of epidemies and of special scientific subjects; the committees, continue these European medical authors, have collected and published a vast amount of highly valuable information. They moreover assert their belief that our success, especially in ethical reform, depends solely in the moral power inseparable from a constitution based upon the principle of equal representation, which they affirm they not only greatly admire, but can scarcely refrain from envying.

Here, then, is a reply to the above invective pronounced against the medical profession of America, voluntarily called forth from the countrymen of its authors, and before he had been in his grave ten years, * by the contributions of this body to medical science within seven years of its organization. Upon such disinterested evidence, such full, free and candid confessions, and from such a source, may rest the claims of the American Medical Association for proof of the benefits it has conferred on medicine. A most active and powerful agent in disemminating useful medical knowledge on this continent, it is highly probable that no similar institution has ever been more successful in carrying out its chief object—the promotion of science—than the one now assembled in this hall.

It has done something, perhaps all it could under the circumstances,

* Sidney Smith died in 1854.

to elevate the standard of medical education. An influential motive calling forth this organization, was the proposed attempt to correct the defects in the plan of instruction and conferring the degree then generally adopted in our medical colleges; and one of the first resolutions passed, even when the profession had assembled in convention, was the creation of a committee to report at an early day on these exciting subjects. Improvement in the system of teaching medicine, and a change in the power granting the diploma, if not reformation in the schools, have ever since agitated the profession, and consumed a considerable portion of the time of our sessions. The only power to control the economy of the colleges which this body possesses is exclusively moral, advisory or recommendatory, and not legislative or legal; and while it may be true that no set of resolutions presented by the several committees have been fully carried into effect, still it cannot be denied that important changes calculated to advance medical education have nevertheless been made. At least seven professors now compose the Faculty in all our schools, the one or two exceptions to this being in those in which the science is taught nine consecutive months. Not less than a period of four full months' instruction now constitute a course of lectures, and even this is exceeded in most of the institutions. But one annual course is now delivered with scarce an exception, and an interval is thus allowed for reading or private instruction. The Association has clearly defined what shall be taught. It has inquired into the practical operations of all the colleges in the land; scrutinized the general condition of medical teaching in every State; compared it with that of the most enlightened nations; called attention to preliminary education and declared what it ought to be; advised higher requisitions and a more rigid examination for obtaining the degree; and has, by its free discussions and oft reiterated expressions in regard to the business of teaching and regulating the schools, undoubtedly prevented greater abuses. It has never ceased to urge at every meeting the pressing necessity for a more thorough preparation and greater attainments in candidates for the honors of the profession.

This subject, gentlemen, is one upon which you will be called to take action. A committee chosen at Nashville is to report here on medical education. It is composed of gentlemen from different sections, who, while familiar with the systems of teaching medicine in our country, are yet disconnected from all the colleges. It would seem to be a desirable object to settle at this meeting the future relation of the schools to this Association. Our sessions then might become less educational in character, and hereafter more scientific. And at the present stage of our proceedings, after all that has been said and done on this subject, the time has surely arrived for a decision. I cannot believe the colleges have any interested motives before this body; they of all others should be the last to oppose a more thorough cultivation of medicine, and ought by such a course to become unworthy of their trust, and unwelcome members of a great national congress of physicians, whose grand design is to promote medical science. We have now reached a period in our history when this voluntary Association is to determine what medical organizations, be they State, county or city societies; hospitals, boards or schools, are entitled to be represented in its meetings. It alone, can, of course, pre-

scribe the requisitions for its own delegates. If created to improve and advance medical education, (and this is in accordance with its own expressed declarations,) then it is quite certain the schools must be controlled. It has but to speak on this point and it will be obeyed: for it is now too late for any physician to oppose, or any medical college to set at defiance the moral power of this body.

As to the first object of an ethical nature over which the Association designed to exert its influence, that of enlightening and directing public opinion in respect to the duties, responsibilities and requirements of medical men, we are free to confess little or nothing has been done. Nor is there much probability that any great change will soon if ever, be effected. The work itself, in the very nature of things, is utopian. How is it possible to enlighten or direct the public mind on the economy of a science which it practically denies to exist? We ought to recollect that the time has not long passed since grave professors in our colleges signed certificates recommending nostrums; or what was done even last year in London at Middlesex Hospital, by its regular surgical staff: these reminiscenses, however unpleasant, may serve somewhat to moderate our indignation against those who would insult the profession, or who entertain a very low estimate of the scientific acquirements of physicians even at the present day. The profession must first fully comprehend its duties and responsibilities, and the proper and special qualifications for the practice of medicine, before any attempt can succeed to get the public to appreciate what these are, or acknowledge the ethical impropriety of employing secret remedies. If we make no distinction between the regular and irregular practitioner, between the physician and the proprietor of a nostrum, we are alone censurable that two such opposite characters are so generally confounded by the community. Until we are more honest, more united, truer to ourselves and our calling, and cultivate a proper *esprit du corps*, in vain is it to expect a change in public opinion regarding medical science. To prevent disease or relieve the sick is a most benevolent and honorable vocation, and when one conceals for selfish ends a valuable medicine, he ceases to be honest and is void of philanthropy; for by attempting to place a monied valuation upon pain and life, he becomes a trader in human physical sufferings; he estimates in dollars and cents the groans and tears of his fellow-creatures. He may profess what he pleases, but his piety is not of the Bible, and has not a jot or tittle of christianity about it, for that teaches us to love our neighbors as ourselves. Eschewing politics, and seeking no aid from State or Church, we should become a law unto ourselves, or rather act above all law save the Divine, since it is quite certain we alone must protect the honor of the medical profession. And thank God, standing this day, the proudest of my life, before this goodly assembly, and at the capital of our common country, I can announce that here, to the American Medical Association it may with safety be forever confided. By its recent acts, proclaimed throughout the length and breadth of this wide domain, this body has denounced all fellowship with irregular practices, and erected a barrier impassable to honor and respectability.

Having learned wisdom from a more careful examination of the statis-

tics and results of deformities after fractures, the question occurs if we have not ourselves unwittingly made patients expect too much from remedical agents. Disease in itself is a destructive process, which we can only prevent or relieve, and as of course, we can not create or restore, should we not therefore be more chary of the little word, "cure?" The monument erected to Ambrose Paré, the father of surgery, bears the modest inscription, in reference to the wounds he treated, * "Je les pansey et Dieu les guarit." Empirics may boast that they cure, and doctors of divinity may sustain them; but the physician knows it is God who healeth all our diseases.

On that branch of ethics which relates to ourselves, that of encouraging emulation and concert of action among physicians, and fostering friendly intercourse in the profession, the Association has been eminently successful. It has far exceeded the most sanguine expectations in overcoming all opposition; in creating an admirable code now adopted everywhere; in organizing State, county and city societies; in bringing together physicians from the remotest parts of our immense territory; in awaking the whole profession to its true interests; and in blending us into a common harmonious fraternity. Without law or authority, but by moral suasion have we been united as one man, and possess this day the power to be felt over this entire continent. There never has been a more propitious period for medicine in America; never greater evidence of vitality and extended usefulness in our ancient and benevolent calling; never better feeling or more confidence of success than now, by our united effort to do good in the great cause of suffering humanity.

We have seen, gentlemen, how much this Association has achieved in its infancy to elevate honorable medicine. A wide field for scientific investigation is before us; much territory still remains to be redeemed; the wilderness is yet to blossom as the rose; and the leaves to be gathered for the healing of nations. The hygienic condition of the nation, of such immense interest to our people; that first, all-important question, ever before the profession—the prevention of disease—is to be improved. We are to search after truth, and when found it is to be generously applied for the good of mankind. The work is a self-sacrificing and benevolent one, but it is grand and sublime, even God-like; for it has to do with pain and disease, life and death. And we rejoice to know that whenever or wherever called upon, the members of our profession and of this Association have never failed in any duty, and have been faithful to the end. Yea, many of them have stood alone between the living and the dead, and cheerfully laid down their lives to stay the pestilence and destroyer.

The very waters at our feet, as they sweep onward to the ocean, pass in sight of a city where three years ago no less than four-fifths of our profession in that community, swelled too as their ranks had been by volunteers from this body, fell manfully contending with disease and death: and on a late occasion, when one of our steam-packets having been injured by a collision, went down in an instant, carrying every soul

* Ancient French,

on board into the depths of the ocean, among the passengers was a member of this Association. To the inquiry where was he during the heart-rending scenes of a sinking ship, freighted with human lives, promptly came the affecting and sublime eulogy from one who knew him well, that so long as a woman or child remained unprovided for, he* never left the ill-fated Arctic. How near akin was his gallant spirit to that of him, who during a subsequent and similar occurrence, after seeing every woman and child committed to his care safely rescued from his foundering bark, after sending the last parting message to his family, and discharging every duty without one lingering ray of hope, calmly assumed his commanding position on the deck of his vessel, and as she glided from under him into the yawning billows, instinctively uncovered to meet his fate and his God. While the wild waves are sighing a requiem over the unseen burying places of these illustrious dead, the benedictions of a grateful people are continually ascending over the forty graves of the martyred heroes of Norfolk. These were our companions, who died in the noble service of that calling, to promote the best interests of which has assembled us together.

Gentlemen of the American Medical Association, we have convened for important purposes; great events are before us; the interests of humanity are here; the hopes of the profession are in this meeting; the eyes of the medical world are upon us. May we then so act in view of surrounding circumstances, that "The skill of the physician shall lift up his head; and in the sight of great men he shall be in admiration."

Puerperal Convulsions.—Dr. James M. Newman presented a report on this subject to the Buffalo Medical Association, at a late meeting, which is published in full in the Buffalo Medical Journal, comprising some accounts of 33 cases collected from various sources. Of these 17 were primiparæ, 9 multiparæ, 7 not stated. Recovered, 24; died, 9. Described as anasarcous, 7. The urine was albuminous in 12 cases; not albuminous in 2; dark colored in 2; no secretion of urine in 2; and condition not noted in 19. Ether or chloroform was employed after bloodletting in 19 cases—and of these, 16 recovered and 3 died; employed without bloodletting, 9—and of these, 6 recovered and 3 died. Convulsive movements modified and controlled by anæsthetics, in 23 cases; convulsions not diminished by them, in 6 cases. Two cases proved fatal in which chloroform was administered without previous treatment being indicated.—[*Boston Med. and Surg. Journal.*

Platinized Charcoal.—The power of charcoal in inducing chemical combination is greatly increased by combination with minutely divided platinum. In this manner a combination may be produced possessing the absorbent power of charcoal (which is much greater than that of spongy platinum,) and nearly equal, as a promoter of chemical combination, to spongy platinum itself. In order to platinize charcoal, nothing more is necessary than to boil it, either in coarse powder or in large pieces, in a solution of bichloride of platinum, and, when thoroughly impregnated, which seldom requires more than ten minutes, or a quar-

* Prof. Carter P. Johnson, of Richmond, Va.

ter of an hour, to heat it to redness in a close vessel, a capacious platinum crucible being well adapted for the purpose. * * * * * * Platinized charcoal seems likely to admit of various useful applications; one of the most obvious of these is its excellent adaptability to air-filters and respirators. From its powerful oxidizing properties, it may also prove a highly useful application to malignant ulcers and similar sores, on which it will act as a mild but effective caustic.—[*Ibid.*

On the Discrimination of Albumen.—The detection of albumen in urine is very simple. A small quantity of the urine is to be heated until it boils, in a test-tube, over the flame of a spirit-lamp. As soon as the temperature of the liquid becomes raised over 170° Fahr., the albumen will become coagulated; and if the test-tube be set aside for a time, it will become deposited, when it may be collected, dried, and weighed. The precipitate albumen is soluble in solution of potash, but insoluble in nitric acid.—[*Dr. Hassel's Lectures. Ibid.*

Increase of Insanity in England.—It would appear, by the following statement from the *London Lancet*, that the United States is not the only country in which insanity has been on the increase during the last few years.

"There are 1000 patients in Hanwell Asylum; the house is to be enlarged so as to accommodate 2000. There are 1200 pauper lunatics in the house at Colney Hatch. Yet there are still 1100 pauper lunatics in Middlesex unprovided for. 'A few years ago lunatics were in the proportion of one to rather more than 800 of the population, while now they are in the rate of one to 700—an increase of one eighth to an increased population.'"—[*Ibid.*

Death of Dr. Hare.—We find in the American Medical Gazette, the following notice of the departure of a distinguished man: indeed, one of the fathers of American science. Let us remember him, not as the star whose brightness was dimmed, as it sank, behind the horizon, but rather as when in the ascendant, or at his meridian, he shed a glory and a resplendence upon American Medicine.

Died, in Philadelphia, May 16th, 1858, Dr. Robert Hare, in the seventy-seventh year of his age. He was for a series of years Professor of Chemistry in the University of Pennsylvania, and by his discoveries and improvements acquired high distinction at home and abroad, ranking justly among the first chemists of the age. The latter years of his life have been beclouded by mental infirmities, terminating in senile imbecility, under the influence of which he was ensnared by the vagaries of clairvoyance, and thus led into the mysticism of the modern spiritualists, endorsing by his high name the wildest of their speculations. *Humanum est errare.*

SOUTHERN

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ORIGINAL AND ECLECTIC.

ARTICLE XVIII.

Observations on Malarial Fever. By JOSEPH JONES, A.M., MD., Professor of Physics and Natural Theology in the University of Georgia, Athens; Professor of Chemistry and Pharmacy in the Medical College of Georgia, Augusta; formerly Professor of Medical Chemistry in the Medical College of Savannah.

[Continued from p. 449 of July No., 1858.]

CASE XV.—Irishman, age 18; brown hair, brown eyes; height 5 feet 6 inches; weight 125 lbs.; well developed chest. Occupation bar-keeper in a sailor's boarding-house on the bay. Five days ago, attended a boat race at Thunderbolt, and slept for two nights in an open boat. The second morning, after waking, felt very badly, and vomited.

Sept. 11th, 8 o'clock P.M. Tongue slightly furred, not redder than normal. No tenderness upon pressure of epigastrium.

Pulse 116. Respiration, 30 thoracic. { Temperature of Atmosphere,.... 80° F. " " Hand,..... 102°5′ " under Tongue,..... 103

℞. Calomel, grs. xii. Castor oil in four hours. ℞. Soda powders, Flaxseed tea. Diet, gruel. ℞. As soon as fever remits, give sulphate of quinia grs. v. every three hours, up to grs. xx.

Sept. 12th, 12 o'clock M. Says that he feels much better; medicine acted four times. Skin cool; tongue very slightly coated with white fur; papillæ not enlarged; pulse 84, soft and regular; respiration 24, gentle. Says that the fever went off about 1 o'clock this morning.

Temperature of Atmosphere, 83° F.
" " Hand,..... 98°5′
" under Tongue,.... 99
} Has taken ten grains of the sulphate of quinia. ℞. Continue up to grs. xx.

Amount of Urine collected during the last 16 hours,.... grains 7,126
" " " calculated for 24 hours,..... " 10,689
" " " collected during each hour,..... " 445

Without doubt, some urine was lost during the action of the medicine.

Specific gravity 1018. High colored. Reaction decidedly acid. After stand-48 hours, there was only a slight deposit of vegetable cells.

ANALYSIS XVII.	Urine collected during 16 hrs., grs. 7126 contained grs.	Calculated am't of urine for 24 hours, grs. 10689 contained grs.	1000 pts of urine contain'd
Water,.....	6766·102	10149·153	949·495
Solid Matters,.....	359·898	539·847	50·505
Urea, ...	203·700	305·550	28·585
Uric Acid,.....	A trace.	A trace.	A trace.
Extractive & col. matters,	110·397	165·596	15·512
Fix'd Saline Constituents,	45·801	68·701	6·408

The disappearance of the uric acid could not have been due to the action of the sulphate of quinia, for the greatest portion of the urine had been passed before the administration of the sulphate of quinia. 8½ o'clock P. M. Pulse 100, fuller. Respiration 24.

Temperature of Atmosphere, 82° F.
" " Hand,..... 102 12′
" under Tongue,.... 103 9′
} Tongue slightly furred. Urine clear, high colored—a shade lighter than that passed this morning. Sp. Gr. 1022.

Amount of urine excreted during the last 8 hours,....grains 6138
" " " calculated for 24 hours,..... " 18414
" " " excreted hourly,..... " 767

Sept. 13th, 11 o'clock A. M. Did not rest well during the night. Tongue moist and slightly coated with fur. Pulse 98. Respiration 26. Respiration irregular, every half minute draws a long, full inspiration.

Temperature of Atmosphere, 82° F.
" " Hand,..... 102° 25′
" under Tongue,.... 103°
} ℞ Citrate of Potassa, - - ℥ss.
Water, - - - - - - f℥xvi.
Dose, wineglassful every three hours.

℞ As soon as fever remits, give sulph. of quinia grs. xx.

Amount of urine excreted during the last 15 hours, grains 7154.
" " calculated for 24 hours,..... " 11446.
Amount of urine excreted hourly,..... " 477.

High colored, clear. Specific Gravity 1020.

5½ o'clock, P. M. Pulse 90. Respiration 28. Urine high colored.

Specific Gravity 1022.
Temperature of Atmosphere,..... 85° F.
" " Hand,..... 101
" under Tongue,.....102°9′

Amount of Urine passed during the last 7 hours,....grains 4092
Calculated amount of Urine for 24 hours,..... " 14029
Amount excreted hourly..... " 584·5

September 14th, 1 o'clock, P.M. Tongue slightly coated with white fur, moist and natural in appearance. Skin moist and cool. Pulse 65, regular and soft. Respiration 24, regular. Color of urine much lighter.

Specific Gravity 1021. { Temperature of Atmosphere,..... 85° F.
" " Hand,..... 96
" under Tongue,..... 98

Amount of Urine passed during the last 20 hours, grains 10210
Calculated amount for 24 hours,..... " 12252
Amount of Urine excreted hourly,..... " 510·5

℞ Quassia and soda.

September 15th, 10 o'clock, A.M. Much better; dressed and walking about the Hospital grounds. Pulse, skin, respiration, and tongue, normal. Urine orange colored, much lighter than the former specimens passed subsequent to the first stage of febrile action. Specific Gravity 1019·7. Reaction after twelve hours, alkaline. Heavy light yellow deposit of urate of soda, and prismatic crytals of triple phosphate. The crystal of triple phosphate numerous and beautiful. Up to the present time, the reaction of the urine has been very acid, and it has remained without deposit for many hours.

Amount of urlne collected during last 20 hours, grains 11726
Calculated amount of urine for 24 hours, " 14071
Amount of urine excreted hourly, - - - " 586·3

ANALYSIS XVIII.	Grs. 11726 of urine excreted during 20 hrs., contain'd grs.	Grs. 14071.8 of urine calculated for 24 hrs contained, grains,	1000 parts of urine contained,
Water,.....	11291·344	13550·613	962·887
Solid Matters,.....	435·206	521·247	37·113
Urea,.....	161·047	200·016	13·792
Uric Acid,.....	8·624	10·350	0·735
Extractive and coloring matters,	204·291	237.109	17·332
Fixed Saline Constituents,.....	60·644	72·772	5·154

The patient left the Hospital a few hours after these observations. He entered the Hospital again on the 18th of October, with a severe attack of remittent fever.

CASE XVI.—Irish seaman: black hair, black eyes, and florid complexion; height 5 feet 11 inches; weight 175 lbs. Has been staying on board the light ship and running up and down the Savannah River, at all hours of the day and night. Says that he resided six years at Panama, but was never sick. Was taken with chill and fever two days ago, and the captain of the light ship gave him several doses of drastic medicine.

September 5th, 7 o'clock, P.M. Has fever. ℞ James' powder, grs. xviij., nitrate of potassa, grs. xxx.—Mix and divide into six powders, one powder every three hours.

September 6th, 1 o'clock, P.M. Has just had a chill, which in fact is not yet entirely off. He is still shaking. Tongue coated with light yellow fur, pale at its edges. Complains of pain in his head. Epigastrium tender upon pressure; extremities cool; head and trunk warm. Pulse 118. Respiration varies from 20 to 32.

℞ Three cut cups to epigastrium. ℞ Spts. Mindererus grs. ℥ss. every half hour.

Temperature of Atmosphere,..... 85° F.
" " Hand,..... 96
" under Tongue,..... 101°5′

6 o'clock, P.M. Cupping relieved the tendency to vomit. Skin hot, although moist. Pulse 120. ℞ Soda powders. ℞ Sulph. of Quinia, grs. xv.

September 7th, 10 o'clock, A.M. Did not rest well; "bowels are quite loose." Has taken ten grains of sulph. of quinia. Pulse 98. Respiration 28. Urine clear, high colored. Specific Gravity 1021.

Temperature of Atmosphere..80°F.
" " Hand.....100
" under Tongue...104

℞ Opium, gr. 1.

Diet, arrowroot and flaxseed tea.

The whole amount of urine passed was not collected, on account of the affection of his bowels. After standing 36 hours, there was a small deposit of crystals of triple phosphate and urate of soda.

ANALYSIS XIX.

1000 parts of Urine contained

Water,.....	936·047
Soliid Matters,.....	63·953
Urea,.....	34·995
Uric Acid,.....	0·705
Extractive and Coloring Matters,.....	21·277
Fixed Saline Constituents,.....	6·976

Sept. 7th, 7 o'clock P. M. Skin warm and moist; tongue slightly coated; no pain upon pressure of epigastrium. Has taken 15 grs. of quinine and 2 grs. of opium this morning. Bowels have not been moved since this morning. Pulse 108; respiration 24.

Temperature of Atmosphere.... 82° F.
" " Hand..... 103°75′
" under Tongue..... 105°

Urine clear, high colored. After standing 39 hours, there was a small deposit of the urate of soda. Specific Gravity 1020·8.

Amount of urine passed during the last 9 hours.....grs. 2552·
Calculated amount of urine for 24 hours,..... " 6803·
Amount of urine excreted hourly,..... " 283·5

ANALYSIS XX.	Urine excreted in 9 hours, grs. 2552 contained grains	Calculated amount of urine for 24 hours, grs. 6803 contained grains	1000 parts of urine contained
Water,.....	2402·683	6405·664	941·490
Solid Matters,.....	149·317	397·968	58·510
Urea,.....	81·660	217·705	31·976
Uric Acid,.....	1·000	2·666	0·391
Ext. and coloring matters,	54·422	144·986	21·356
Fixed Saline Constituents,	12·235	32·611	4·787

Sept. 8th, 9 o'clock A. M. Says that he feels much better. Rested well during the night. Bowels have been moved twice. Tongue clean at tip and edges, superior portion slightly coated with fur; color of tongue paler than normal; skin cool, moist and relaxed. Pulse 78; respiration 18.

Temperature of Atmosphere.... 75° F. } Urine high colored. Sp. Gravity
" " Hand..... 98°5′ } 1018·7. After standing 26 hours,
" under Tongue.....100°5′ } urate of soda and prismatic crystals of triple phosphate were deposited.

Amount of urine passed during the last 14 hours,..... grs. 12224
" " " hourly " " " " 873
Calculated amount of urine for 24 hours,..... " 20903
Actual amount of urine excreted during the last 24 hours, " 14776
" " " " " hourly, " " " " " 615

ANALYSIS XXI.	Grs. 12224 of Urine passed during last 14 hrs., contained grains	Grs. 20903 of Urine, calculated for 24 hrs., contained grains	Grs. 14776 of Urine, actual am't excreted in 24 hours, contained grains	1000 pts. of Urine contained
Water,.....	11613·180	19856·093	14015·863	950·000
Solid Matters,.....	616·220	1047·631	760·537	50·000
Urea,.....	279·360	477·705	361·020	22·852
Uric Acid,.....	3·240	5·540	4·240	0·265
Extractive and coloring matters,	272·388	466·885	326·810	22·283
Fixed Saline Constituents,	56·232	96·157	68.467	4·600

12 o'clock, M. Has just exhibited a rising upon the buttock When lanced, f ʒ ii, of fetid black matter flowed. ℞ Sulph. of quinia, grs. v. Diet, beef soup and tea.

6 o'clock, P.M. Complains of great weakness. Pulse 88. Respiration 18. Extremities are much colder than the head and trunk. The phenomena resemble those of chill. He does not, however, complain on any chilly sensation.

Temperature of Atmosphere....76° F. } Urine high colored. After twenty-
" " Hand.....93° } four hours, a heavy deposit of urate
" under Tongue.....104°5′ } of soda and triple phosphate.

Amount of urine excreted during the last 9 hours, grs.....6127
" " " " hourly..... " 680.7
" " " " during the last 24 hours, " 18351
" " " " hourly " " " " 764.4
Calculated amount of urine for " " " 16335
Hourly..... " 680
Specific Gravity 1021·2.

ANALYSIS XXII.	Grs. 6127 of Urine, passed during last 9 hrs., contained grains	Grains 16335 of Urine calculat'd for 24 hrs., contained grains	1000 parts of urine contained	Grs. 18351 of Urine excret'd during last 24 hrs., contained grains
Water, ...	5830·238	15570·075	953·165	17453·472
Solid Matters,.....	286·962	765·040	46·835	898·128
Urea,.....	113·490	302·564	18·521	392·850
Uric Acid,.....	4·320	11·517	0·705	7·560
Extractive and coloring matters,	126·498	337·244	20·647	398·886
Fixed Saline Constituents,	42·654	113·715	6·962	98·886

September 9th, 10 o'clock, A.M. Continues to improve, but complains of great weakness. Pulse 76. Respiration 20. Skin cool and moist; bowels regular; urine high colored; deposit of urate of soda and triple phosphate, after standing a few hours, and acid reaction changed to the alkaline.

Specific Gravity.....1018·2 { Temperature of Atmosphere..75° F. " " Hand.....97°75' " under Tongue....99° 5'

Amount of Urine passed during the last 16 hours, grains.....9163
" " " " hourly,..... " 572.6
Calculated amount of urine for 24 hours..... " 13745
Actual " " " " ..... " 15291
" " " hourly " ..... " 628.7

ANALYSIS XXIII.	Grs. 9163 of Urine passed during last 16 hrs., contained grains	Grs. 13745 of Urine calculated for 24 hrs. contained grains	1000 parts of Urine contained	Grs. 15291 of Urine, actual am't excreted in 24 hours, contained grains
Water,.....	8677·223	13015·850	946·903	14517·471
Solid Matters,.....	486·567	729·850	53·097	773·529
Urea,.....	237·456	356·084	25·912	351·946
Uric Acid,.....	0·720	1·080	0·078	5·040
Extractive and coloring matters,	215·955	324·032	23·568	341·453
Fixed Saline Constituents,	32·436	48·654	3·539	75·090

September 9th, 6 o'clock, P. M. Tongue and skin normal. Pulse 76. Respiration 22. Urine orange colored. Specific Gravity 1022. Slight deposit in 15 hours of urate of soda and triple phosphate.

Temperature of Atmosphere.....87° F.
" " Hand.....97°5'
" under Tongue.....99°8'
Amount of urine passed during the last 8 hours, grains.....6135
" " " hourly " " " ..... 766·8
Calculated amount of urine for 24 hours..... " 18405
Actual amount passed during the last 24 hours.. " 15298
Hourly amount of urine passed during the last 24 hours, grs.....637.4

ANALYSIS XXIV.	Grs. 6135 of Urine excreted during last 8 hrs. contained grains	Grs. 18405 of Urine calculated for 24 hrs. contained grs.	1000 parts of Urine contained	Grs. 15298 of Urine, excreted during last 24 hrs., contained, grains
Urea,.....	113.490	340·470	18.498	350·948
Uric Acid,.....	4.440	13·320	0·723	5·160

September 10th, 10½ o'clock, A. M. Pulse 68. Respiration 19. Color of urine only a shade higher than normal. After twelve hours a slight deposit of urate of soda and triple phosphate.

Specific Gravity.....1021·5 { Temperature of Atmosphere.....79° F. " " Hand.....96°5′ " under Tongue.....98

Amount of urine passed during the last 16 hours, grains.....5107
" " " hourly " " " " 319
Calculated amount for 24 hours..... " 7661
Actual amount of urine passed during last 24 hours, " 11242
Amount passed hourly..... " ..... 468·4

ANALYSIS XXV.	Grs. 5107 of Urine passed during last 16 hrs., contained grains	Grs. 7661 of Urine calculated for 24 hrs. contained grs.	1000 parts of Urine contained	Grs. 11240 of Urine excreted during last 24 hours, grains
Urea,.....	63·050	94·575	12·362	176·540
Uric Acid,.....	1·000	1·500	0.196	5·400

The diminution of the frequency of the action of the respiratory and circulatory systems, and the reduction of the temperature, have been attended by a diminution in the amount of urine excreted, and also of its constituents.

7 o'clock, P.M. Dressed himself and walked in the Hospital yard. Still feels weak; is now in a profuse perspiration. Pulse 68. Respiration 20.

Temperature of Atmosphere,..80° F. / " " Hand.....97° / " under Tongue....98°9′ } Sp. Gr. of urine 1020·4. Deposit in 12 hours of urate of soda and prismatic crystals of triple phosphate. When held in the sun, the whole mass sparkled with the crystals of triple phosphate.

Amount of Urine passed during the last 24 hours, grains.....10209
" " " hourly " " " ..... 425·3
" " " during " 9 " " 5102
" " " hourly " " " 566.8
Calculated amount for 24 hours..... " 13601

ANALYSIS XXVI.	Grs. 5102 of Urine passed during last 9 hrs. contained grains	Grs. 13601 of Urine calculated for 24 hrs. contained grs.	1000 parts of Urine contained	Grs. 10209 of Urine excreted during last 24 hours contained grains
Urea.....	63·040	169·091	12·352	126·100
Uric Acid.....	2·300	6·131	0·450	3·300

Sept. 11th, 11 o'clock A. M. Pulse 74; respiration 18.

Temperature of Atmosphere, 82° F. / " " Hand, 97 / " under Tongue, 98 2′ } Color of urine a shade higher than normal. Specific Gravity 1021·2. In 12 hrs. a small deposit of urate of soda and triple phosphate.

Amount of Urine passed during the last 16 hours,.....grs. 7148.
" " " " hourly " " " " " 446.7
Calculated amount of Urine for 24 hours,..... " 10722.
Amount of Urine passed during the last 24 hours,..... " 12250.
" " " " hourly " " " " " 510.4

ANALYSIS XXVII.	Grs. 7148 of Urine passsd during the last 16 hours contained grains	Grs. 10722 calculated for 24 hours, contained grains	1000 parts Urine contained	Grs. 12250 passed in 24 hours contained grs.
Urea, ...	137·095	205·642	19 490	200·145
Uric Acid, ...	4·200	6 300	0 587	6·500
Fixed Saline Constit.	41·195	61·792	5·037	

6½ o'clock P. M. Has been walking in the Hospital yard. Pulse 67; respiration 22. Urine normal in color. Sp. Gravity 1026·5. Fermentation proceeded so rapidly, that in the course of 24 hours, the whole of the urea was converted into the carbonate of ammonia. Deposit consisted of prismatic, stellated and plumose crystals of triple phosphate, and globular and acicular crystals of urate of soda.

Temperature of Atmosphere, ... 78°75′ F.
" " Hand, ... 97 83
" under Tongue, ... 99

Amount of Urine passed during the last 7½ hours, ... grs. 4106
" " " " hourly, " " " " " 534
Calculated amount of Urine for 24 hours, ... " 13139
Amount of Urine passed during the last 24 hours, ... " 11254
" " " " hourly, " " " " " 468 9

Uric acid in grains 4106 of Urine, (7½ hours) ..... grs. 4·720
" " " " 13139 " " calculated for 24 hours, ... " 15.104
" " " 1000 parts of Urine, ... " 1·149
" " " grs. 11254 " " excreted in 24 hours, ... " 8·920

Sept. 12th, 12 o'clock M. Pulse 60; respiration 20. Sp. Gravity of urine 1022·15. Heavy deposit of urate of soda, and prismatic and plumose crystals of triple phosphate.

Temperature of Atmosphere, ... 83° F.
" " Hand, ... 97
" under Tongue, ... 98°8′

Amount of Urine passed during the last 17 hours, ... grs. 4088.
" " " " hourly, " " " " " 240 5
Calculated amount for 24 hours, ... " 5768.
Amount of Urine passed during the last 24 hours, ... grs. 8194.
" " " " hourly, " " " " " 341.4

Uric acid in grs. 4088 of Urine passed during 17 hours, ... grs. 5.400
" " " " 5768 " " calculated for 24 " " 7.619
" " " 1000 parts of Urine, ... " 1.320
" " " " 8194 " " passed during 24 hours, ... " 10.120

Fixed Saline Constituents in grs. 4088 of Urine, (17 hours) ..... grs. 40.880
" " " " " 5768 " " (collected in 29 hrs.) " 57.688
" " " " 1000 parts of Urine, ... " 10.000
" " " " grs. 8194 " " (24 hours) ..... " 10.120

Sept. 13th, 11 o'clock A. M.

Amount of Urine passed during the last 24 hours, grs. 16.962. Sp. Gr. 1025.
" " " " hourly, " " " " " 706.7

Sept. 14th, 4 o'clock P. M.

Amount of Urine passed during the last 30 hours, grs. 31.669. Sp. Gr. 1021·6
" " " " " " " 24 " " 25.335
" " " " hourly, " " " " " 1.055

ANALYSIS XXVIII.	Grs. 31669 of Urine, passed during 30 hrs. contained grs.	Grs. 25335 of Urine, passed during 24 hrs. contained grs.	1000 parts of Urine, contained
Water,	29965·178	23971·943	945·455
Solid Matters,	1703·822	1363·057	54·545
Urea,	630·470	504·376	19·940
Extractive, Col'g Matters, and Uric Acid,	690·510	552·406	22·484
Fixed Saline Constituents,	382·842	306·275	12·121

In this case the uric acid was diminished during the active stages of the malarial fever, and increased during convalescence. The temperature of the body was slightly depressed below the normal standard, during convalescence, and this depression was attended by a corresponding diminution of all the urinary constituents, except the uric acid.

The phenomena, during the cold stage, resembled in all respects, those previously described. The consideration of many other points of interest is deferred until we institute a general comparison of all the various forms of malarial fever.

The annexed Table No. IV. (on pages 516–17), will present a view of the foregoing results.

CASE XVIII.—Frenchman: age 45; weight 130 lbs.; thin and spare; nervous temperament; complexion pale. Has been in Savannah three weeks. Has been acting as nurse in the Hospital for the last two weeks. Occupation, nurse in an insane asylum.

September 15th, 12 o'clock, M. Was taken with a chill this morning, at 8 o'clock, A.M., which was attended with vomiting and followed by high fever. Urine passed during the height and decline of the fever, orange colored, and diminished in amount.

September 16th, 12 o'clock, M. Apyrexia. Amount of urine passed during the last 24 hours, grains 4086. Sp. Gr. 1021·5. Amount of uric acid passed during the height and commencement of the intermission of the fever (24 hours), grains 0·400.

1000 parts of urine contained—

Urea,	20·425
Uric Acid,	0·097

TABLE IV.

Month	Day of Month	Hour of Day	Pulse	Respiration	Temperature of Atmosphere	Temperature of Hand	Temperature under Tongue	Amount of Urine excreted during 24 hours	Amount of Urine excreted hourly	Water excreted during 24 hrs.	Solid Matters excreted during 24 hours	Urea excreted during 24 hrs.	Uric Acid excreted during 24 hours	Ext've and Colg. Matters excreted during 24 hours.	Fixed Saline Constituents excreted during 24 hours.	Amount of Urine excreted in Hours	Hours	Specific Gravity	Water
								GRS.	GRS.	GRS.	GRS.	GRS.	GRS.	GRS.	GRS.	GRS.			
Sept'r,	6	1 P.M.	118	20–32	85°	96°	101°5′	.....	....	.....	....	....	.....	....	....	.....	..	.....	....
..	6	6 "	120	.....	.....	.....	.....	.....	....	.....	....	....	.....	....	....	.....	..	.....	....
..	7	10 A.M.	98	28	80°	100°	104°	.....	....	.....	....	....	.....	....	....	.....	..	.....	....
..	7	7 P.M	108	24	82	103°75	105	.....	....	.....	....	....	.....	....	....	2552	9	1020.8	240
..	8	9 A.M.	78	18	75	98-5′	100°5′	14776	615	14015	760	361	4.24	326	68.0	12224	14	1018.7	1161
..	8	6 P.M.	88	18	76	93	104°5′	18351	764	17453	898	392	7.56	398	98.8	6127	9	1021.2	583
..	9	10 A.M.	76	20	75	97-75	99°5′	15291	628	14517	773	351	5.04	341	75.0	9163	16	1018.2	867
..	9	6 P.M.	76	22	87	97-5′	99°8′	15298	637	.....	....	350	5.160	....	....	6135	8	1022	.....
..	10	10½ A.M.	68	19	79	96°5	98	11240	468	.....	....	176	5.400	....	....	5107	16	1021.5	.....
..	10	7 P.M.	68	20	80	97	98°9′	10209	425	.....	....	126	3.300	....	....	5102	9	1020.4	.....
..	11	11 A.M.	74	18	82	97	98°2′	12250	510	.....	....	200	6.500	....	....	7148	16	1021.2	.....
..	11	6½ P.M.	67	22	78°75′	97-83	99	11254	468	.....	....	....	8.920	....	....	4106	7½	1026.5	.....
..	12	12 M.	60	20	83	97	98°8′	8194	341	.....	....	....	10.120	...	....	4088	17	1022.15	.....
..	13	11 A.M.	...	.....	.....	.....	.....	16962	706	.....	....	....	.....	....	....	.....	..	.....	.....
..	14	4 P.M.	...	.....	.....	.....	.....	25335	1055	23971	1363	504		552	306.	31669	30	1021.6	2996

ANALYSIS XXIX. Sept. 17th.	Grs. 6641 of Urine, excreted during 24 hours, contained	1000 parts of Urine contained
Urea, - - - - -	252·200	38·001
Uric Acid, - - - -	2·275	0·342
Specific Gravity, - -	1021·700	
Am't excreted hourly,	276·800	

ANALYSIS XXX. Sept. 18th.	Grs. 6640 of Urine passed during 24 hrs. contained	1000 parts of Urine contained
Urea, - - - - -	136·188	20·470
Uric Acid, - - - -	13·845	2·082
Specific Gravity, - -	1023·000	
Am't excreted hourly,	277·000	

Sept. 18th. Temperature of Atmosphere, 88°. Temp. of Hand, 93°5′. Temp. under Tongue, 99°.

Sept. 19th. Amount of Urine in 24 hours, grs. 7530. Amounnt hourly, grs. 314. Temp. of Atmosphere, 89°5′. Temp. of Hand, 96°5′. Temp. under Tongue,98°.

Continued to improve, and was discharged from the hospital Sept. 23rd.

October 7th, 3½ o'clock P. M. Has returned. Says he has been "keeping bar" on the bay, and was taken with a "dumb

TABLE IV.

Urea.....	Uric Acid.....	Extractive and Coloring Matters.....	Fixed Saline Constituents....	Calculated amount of Urine for 24 hours.....	Calculated amount of Water for 24 hours.....	Calculated amount of Solid Matter for 24 hours.....	Calculated amount of Urea for 24 hours.....	Calculated amount of Uric Acid for 24 hours.....	Calculated amount of Extractive and Coloring Matters for 24 hours.....	Calculated amount of Fixed Saline Constituents for 24 hours.....	Water in 1000 parts of Urine ...	Solid Matters in 1000 parts of Urine.....	Urea in 1000 parts of Urine.....	Uric Acid in 1000 parts of Urine	Extractive and Coloring Matters in 1000 parts of Urine.....	Fixed Saline Constituents in 1000 parts of Urine.....	Amount of Urine excreted hourly.....
GRS.	GRS.	GRS.	GRS.	GRS.	GRS.	GRS.	GRS.	GRS.	GRS.	GRS.							GRS.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...	....	.....	.....	.....	.....	....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...	....	.....	.....	.....	.....	....
81.6	1.00	54.4	12.235	6803	6405	397.9	217.7	2.666	144.9	32.61	941	58.5	31.9	0.391	21.35	4.78	283
279.3	3.24	272.3	56.2	20903	19856	1047.	477.	5.54	466.	96.15	950	50.	22.8	0.265	22.283	4.600	566
113.4	4.32	126.4	42.6	16335	15570	765.	302.5	11.507	337.	113.7	953	46.8	18.5	0.705	20.6	6.962	680
287.4	0.72	215.9	32.4	13745	13015	729.	356.	1.08	324.	48.6	946	53.0	25.9	0.078	23.5	3.539	572
113.4	4.440	.....	.....	18405	.....	.....	340.	13.32	.....	.....	.....	....	18.4	0.723	.....	.....	766
63.0	1.000	.....	.....	7661	.....	.....	94.5	1.50	.....	.....	.....	....	12.3	0.196	.....	.....	468
63.0	2.300	.....	.....	13601	.....	.....	169.0	6.131	.....	.....	.....	....	12.3	0.450	.....	.....	566
137.0	4.200	.....	41.19	10722	.....	.....	205.6	6.300	.....	61.792	.....	....	19.49	0.587	.....	5.037	446
.....	4.720	.....	.....	13139	.....	.....	.....	15.104	.....	.....	.....	....	.....	1.149	.....	.....	534
.....	5.400	.....	.....	5768	.....	.....	.....	7.619	.....	.....	.....	....	.....	1.320	.....	.....	240
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	706
630.	.....	690.0	382.	.....	.....	.....	.....	.....	.....	.....	945	54.5	19.9	.....	22.4	12.1	1055

ague" on the 5th inst., which lasted two hours. The "dumb ague" has returned at the same hour, 11 o'clock A. M., on the succeeding and this day. Now has fever, with pain in all his limbs, and vomiting. Calomel, grs. xii., sulph. of quinia, grs. v. were administered, and followed by castor oil. 20 grs. of the sulphate of quinia were also administered. This delayed the chill until Oct. 9th, 3½ o'clock, (27½ hours.)

The following tables will present the most important phenomena observed:

October 9th, 3½ o'clock P. M.—PHENOMENA OF COLD STAGE.

Pulse 92, very feeble, resembles the vibration of a fine thread—with difficulty counted. Respiration accelerated and irregular. Lips and fingers blue.	Temp. of Atmosphere, . . 75° F. " " Hand, ... 83 " under Tongue, . . . 101 5′ ℞. Mustard to extremities. Brandy & snake-root tea, until reaction.

6½ o'clock P. M.—HOT STAGE.

Pulse 96; much fuller than during the chill. Respiration fuller. Pulse not so full as in milder cases.	Temp. of Atmosphere, . . 70° F. " " Hand, ... 101 8′ " under Tongue, . . . 102 8′ ℞. Citrate of Potassa mixture.

Oct. 10th, 11 A. M. Febrile excitement has almost entirely subsided. ℞. Sulph of quinia, grs. xxv.

5 o'clock P. M.—APYREXIA.

Pulse and respiration near the normal standard.	Temp. of Atmosphere, . . 70° F. " " Hand, ... 97 5′ " under Tongue, . . . 98 5′

Oct. 12th, 3 P. M. Pulse, respiration, skin and tongue, normal.

ANALYSIS XXXI. Oct. 10th, 11 A.M.	Am't of Urine excreted during 15 hours of febrile excitement, grs. 8687. Sp. Gr. 1022. Am't excreted hourly, grs. 579. Grains	Grs. 13899 calculated for twenty-four hours, contained grains	1000 pts. of Urine contained
Urea, - - - -	342·167	547·388	39·388
Uric Acid, - - -	5·950	9·520	0·684
Fixed Saline Contit's	28·050	44·880	43·228

ANALYSIS XXXII. Oct. 12th, 3 o'c. P.M.	Amount of Urine passed during the last 24 hours of Apyrexia, grs. 15330. Sp. Gravity 1022. Am't passed hourly, grs. 638. Grs.	1000 pts. of Urine contained
Urea, - - - -	349·200	22·678
Uric Acid, - - -	11·250	0·733
Fixed Saline Conslit's	76·500	4·990

Urine was high colored, like new Madeira wine. The appropriate tests exhibit the presence of iron in abnormal amount. The coloring matters were in such abundance that hydrochloric acid changed the color of the urine into a purplish black. When evaporated to the consistence of a syrup, the urine assumed a dark brown, almost black color. After standing 50 hours, prismatic crystals of triple phosphate, vegetable cells, urate of soda, and carbonate of lime were deposited.

This patient had no return of fever, but suffered for some time with great weakness, and exhibited in his pale lips, pale gums, and sallow complexion, the effects of the malarial poison on the colored blood corpuscles.

In this case the uric acid was not diminished during the hot stage.

If we compare the first with the second attack, it is evident that the urea was more abundant in the second, than the first. The first attack of intermittent fever was slight, while the second was severe. When we consider the weight and condition of rest, and almost complete starvation of this patient, it is evident that the urea was greatly increased.

CASE XIX.—English seaman: age 25; weight 160 lbs.; height 5 feet 6 inches; black hair; florid complexion; muscular system well developed; powerful chest; short stout neck. Has just returned from Jacksonville, Fla. Has been sick one week.

August 18th, 11 o'clock, A.M. Skin hot and dry; face very red; pulse 106; respiration thoracic; temperature of atmosphere 88°; temperature of hand 105°. Complains of pain in his head. Urine high colored. Specific gravity 1021. ℞ Bloodletting in the standing posture to produce relaxation of the system.

2 o'clock, P.M. Preparations were made for blood-letting. The patient appeared to be alarmed by the preparations; and when I appeared with the specific gravity bottles, beaker glasses and capsules, to receive the blood, he fell back into the arms of the assistant, and in a few moments before the lancet was applied, the perspiration stood in large drops upon his face and hands. During the bleeding, he perspired freely, and fainted before f ℥ x, were abstracted. The pulse and respiration were diminished in frequency and force, and the patient fell into a profound slumber, during which his clothes were completely saturated with a profuse perspiration.

Examination of Blood.—Blood of a dark, almost black color, commenced to coagulate in about ten minutes. After remaining for two hours exposed to the atmosphere, the surface of the blood exposed, changed to a bright red arterial hue.

Specific gravity of blood, 1042; Specific gravity of serum, 1018. Serum of a light golden color. The color was not so deep as in severer cases of malarial fever.

ANALYSIS OF BLOOD, I.

Water,		Solid Matters,	
In 1000 parts of Blood,	830·509	In 1000 parts of Blood,	169·491
" " Serum, -	929·287	" " Serum, -	70·713
(1) " " Liq. Sang.	927·194	(1) " " Liq. Sang.	72·806
(2) " " Liq. Sang.	887·328	(2) " " Liq. Sang.	112·672
		Sol. Matters in Serum of 1000 parts of Blood,	64·158

Fixed Saline Constituents.

In 1000 parts of Blood, - - - - - - - -	7·532
" " Serum, - - - - - - - -	5·000
(1) " " Liq. Sanguinis, - - - - - - -	5·332
(2) " " Liq. Sanguinis, - - - - - - -	8·245
" " Solid Matters of Blood, - - - -	44.439
" " " " " Serum, - - - -	77·931
" " " " " Liq. Sanguinis, - - -	73·345
" " " " " Blood Corpuscles, - -	28·500
" " Moist Blood Corpucles, - - - -	7·258
In Blood Corpuscles of 1000 parts of Blood, - - -	3.002
In Serum of 1000 parts of Blood, - - - - -	4.530

1000 PARTS OF BLOOD CONTAINED,

Water,			830·509
Dried Blood Corpuscles,	103·433	Organic Matters,	100·431
		Mineral "	3·002
Fibrin,			1·900
Albumen,	54·186	Organic Matters,	54·426
		Mineral "	2·760
Extractive and Coloring Matters,	8·972	Organic Matters,	6·902
		Mineral "	2·070

1000 PARTS OF BLOOD CONTAINED,

Moist Blood Corpuscles,	413·732	Water,	310·219
		Organic Matters,	100·431
		Mineral "	3·002
Liquor Sanguinis,	586·268	Water,	520·210
		Albumen, Organic Matters,	51·426
		Albumen, Mineral "	2·760
		Extractive and Color'g Matters, Organic Matters,	6·902
		Extractive and Color'g Matters, Mineral "	2·070
		Fibrin,	1·900

1000 PARTS OF MOIST BLOOD CORPUSCLES CONTAINED,

Water,	749·996
Organic Matters,	242·746
Mineral Matters,	7.258

(1) 1000 PARTS LIQUOR SANGUINIS CONTAINED,

Water,			927·194
Albumen,	59·809	Organic Matters,	56·762
		Mineral "	3·047
Fibrin,			2·093
Extractive and Coloring Matters,	10·904	Organic Matters,	7·619
		Mineral "	2·285

(2) 1000 PARTS OF LIQUOR SANGUINIS CONTAINED,

Water,			887·328
Albumen,	92·424	Organic Matters,	87·717
		Mineral "	4·707
Fibrin,			3·242
Extractive and Coloring Matters,	15·310	Organic Matters,	11·772
		Mineral "	3·538

8 o'clock, P. M. Much better; pain in his head has disappeared; in a profuse perspiration; skin much cooler. Pulse 96 to the minute, soft and natural. Respiration regular and normal.

August 19th, 10 o'clock, P.M. Skin moist; urine high colored; Pulse 82; Respiration 24. Temperature of Atmosphere

89°F. Temperature of Hand 100°. Temperature under Tongue 102°25′.

August 20th, 12 o'clock, M. Skin and tongue normal; urine high colored. Specific gravity, 1015. Pulse 80; Respiration 21. Temperature of Atmosphere 85°F. Temperature under Tongue 101°.

August 21st. Pulse 80; Respiration 20. Temperature of Atmosphere 80° Temperature under Tongue 98°8′.

This case yielded readily to the action of sulphate of quinia, and the patient was discharged on the 23d. This has been a mild attack of malarial fever, and the blood corpuscles were but slightly diminished.

At first sight this case would seem to prove the efficacy of blood-letting in malarial fever. The fact that the mere preparations for bleeding, caused the patient "to break out into a profuse perspiration," demonstrated that the sweating stage was nigh at hand and the bleeding was the occasion and not the cause of its appearance.

It is probable that this patient would have done just as well, without, as with this bleeding. The next patient suffering with malarial fever, which I bled, was a stout German, with high fever, scarlet face, and "distracting pain in his head," presenting similar only severer symptoms. This case terminated fatally. I have used local blood-letting (cut cups) in scores of cases of malarial fever, and always with apparent benefit. Over the epigastrium it often arrests obstinate vomiting, and over the temples and back of neck, and over the spine, it often relieves distressing pain. Local differs from general blood-letting, in two essential degrees. First, the quantity of blood abstracted is much less, and second, the number of colored blood corpuscles is less in proportion to the amount of blood abstracted, in local than in general blood-letting. The colored blood corpuscles rush along principally in the centre of the streams, and in general blood-letting they are lost, more rapidly than the other elements of the blood. The malarial poison, whatever it be, destroys rapidly the colored blood corpuscles. Whatever therefore diminishes the colored blood corpuscles acts in concert with the malarial poison. The malarial poison reduces rapidly the forces. General blood-letting reduces rapidly the forces. The two, in this particular, again act in concert. These views will be substantiated by facts, and more fully discussed hereafter.

CASE XX. Frenchman, laborer; height 5 feet 8 inches; weight, 110 lbs., in health, 140 lbs. Has been in America, ten years, and in Savannah, six months. Has been living and working in a low miasmatic situation on Thunderboldt road,

one mile from Savannah. Has been sick with chill and fever five weeks, and has had no medical attendance. He is much reduced in flesh and strength. Complexion sallow, anæmic. Lips and gums pale—the effects of miasmatic fever are well marked.

August 19th. Pulse 72; Respiration 24. Temp. of Atmosphere, 90°F.; Temp. under Tongue, 98°. Complains of great weakness, and constant pain in his head.

August 22nd. *Examination of Blood.*—The blood coagulated in the usual time, and the clot was firm. After standing four days in a stoppered bottle, in the heat of summer, the clot appeared firm, undecomposed, and the serum was clear. The blood of a patient who was suffering from the effects of remittent fever, and severe salivation, placed by the side of this, in the same time, and under the same circumstances, had its clot completely disintegrated, and commenced to putrefy.

ANALYSIS OF BLOOD II.

Specific gravity of Blood, - - - 1034

WATER,		SOLID MATTERS,	
In 1000 parts of Blood,	850.888	In 1000 parts of Blood,	149·112
" " Serum,	920·820	" " Serum,	79·180
(1) " " Liq. Sang.,	918·072	(1) " " Liq. Sang.,	81·928
(2) " " Liq. Sang.,	892·859	(2) " " Liq. Sang.,	107·424
		In Serum of 1000 parts of Blood, - - -	73.167

FIXED SALINE CONSTITUENTS,

In 1000 parts of Blood, - - - - - - -	7·692
" " Serum, - - - - - - -	5·119
(1) " " Liquor Sanguinis, - - - - -	5·120
(2) " " Liquor Sanguinis, - - - - -	6·696
" " Solid Matters of Blood, - - - -	51·586
" " " " " Serum, - - - -	64·648
" " " " " Liquor Sanguinis, - -	62·493
" " " " " Blood Corpuscles, - -	40·351
" " Moist Blood Corpuscles, - - - -	10·087
In Blood Corpuscles of 1000 parts of Blood, - - -	2·962
In Serum of 1000 parts of Blood, - - - - -	4·730

1000 PARTS OF BLOOD CONTAINED,

Water, - - - - - - - - - - -			850·888
Dried Blood Corpuscles, - -	73·405	Organic Matters,	70·411
		Mineral "	2·962
Fibrin, - - - - - - - - - -			2·540
Albumen, Extractive and Coloring Matters, - - - -	73·167	Organic Matters,	68·405
		Mineral "	4·730

1000 PARTS OF BLOOD CONTAINED,

Moist Blood Corpuscles, - -	293·620	Water, - -	220·215
		Organic Matters,	70·411
		Mineral "	2·962
Liquor Sanguinis, - - -	706·380	Water, - -	630·705
		Organic Matters,	68·405
		Mineral "	4·730
		Fibrin, - -	2·540

(1) 1000 PARTS OF LIQUOR SANGUINIS CONTAINED,

Water, - - - - - - - - - -	918·072
Albumen and Extractive Matters, - - - - -	74·050
Mineral Matters, - - - - - - - -	5·120
Fibrin, - - - - - - - - - -	2·748

(2) 1000 PARTS OF LIQUOR SANGUINIS CONTAINED,

Water, - - - - - - - - - -	892·859
Albumen and Extractive Matters, - - - - -	96·838
Mineral Matters, - - - - - - - -	6·696
Fibrin, - - - - - - - - - -	3·890

1000 PARTS OF MOIST BLOOD CORPUSCLES CONTAINED,

Water, - - - - - - - - - -	750·000
Organic Residue, - - - - - - - - -	239·803
Fixed Saline Constituents, - - - - - -	10·087

This analysis confirms the statement, that the malarial poison (either directly or indirectly) destroys the colored blood corpuscles. They are diminished one half, the dried corpuscles being only 73·405, and the moist corpuscles 293·620, whilst in health the dried corpuscles generally average 135·000, and the moist corpuscles 540·000.

This patient improved very slowly under the action of sulphate of quinia, chalybeates, and alteratives, and on the 2nd of September had a return of chill and fever.

September 3rd, 12½ o'clock, P.M. Chill has just commenced; he is shaking violently. Pulse 96, very feeble, can scarcely be felt. Respiration 32–40, irregular, spasmodic. Extremities cold; trunk warm. Temp. of atmosphere 83°; temp. of hand 93°75′; temp. under tongue 100°5′.

3½ o'clock, P.M. Skin hot and dry; pulse 108; respiration 28; temp. of atmosphere 85°F.; temp. of hand 104°; temp. under tongue 105°.

7 o'clock, P.M. Fever is subsiding; pulse 90; respiration 26; temp. of atmosphere 78°F.; temp. of hand 101°5′; temp. under tongue 103°.

September 4th. Apyrexia.

September 5th. No return of fever.

September 6th. Pulse 76; respiration 20; temp. of atmosphere 80°F.; temp. of hand 98°; temp. under tongue 100°.

Examination of Urine passed during the febrile excitement and the intermission, Sept. 3rd.

ANALYSIS XXXIII.	Grs. 7084 of Urine passed during 16 hrs. Sp. Crav. 1012·4. Am't pass'd hourly, grs. 442·7. Grains	Grs. 10613, calculated for 24 hours, contained grains	1000 parts of Urine, contained
Urea, - - - -	151·077	226·616	21·086
Uric Acid, - - -	2·243	3·365	0·326

CASE XXI. Irish laborer; light brown hair, brown eyes; has been in America seven years, and in Savannah three years; age 22, medium height. Has been living and making bricks in a low miasmatic situation. Says that he has suffered with chill and fever for six weeks. Complexion sallow and anæmic; lips, gums, and tongue pale. He is exhausted by slight exertions, and complains of great weakness.

Sept. 16th, 12½ o'clock P.M. Pulse 88, respiration 24. Temperature of atmosphere, 87°5′ F.; Temp. of hand, 100°5′; Temp. under tongue, 101°25′.

Sept. 17th, 11½ o'clock P. M. Pulse 72, respiration 20. Has just awoke from sleep, in a profuse perspiration. Temperature of atmosphere, 86° F.; Temp. of hand, 90°; Temp. under tongue, 98°

ANALYSIS XXXIV.	Grs. 16027 of Urine excreted in 24 hours. Sp. Gr. 1001·7. Clear, limpid. Amount excreted hourly 667·7. Grains	1000 parts of Urine, contained
Water, - - - - -	15958·568	995·730
Solid Matters, - - -	68·432	4·270
Urea, - - - - - -	42·680	2·664
Uric Acid, - - - -	1·280	0·079
Extractive and Coloring Matters,	18·776	1·171
Fix'd Saline Constituents	5·696	0·356

The reduction of the nervous and physical forces was attended by a reduction in the amounts of the solid constituents of the urine. ℞. Snake-root tea, 1 pint; brandy, f℥vi.; sulph. of quinia, grs. xv. Mix. Take a wine-glassful six times a day. ℞. Citrate of Iron, grs. iv. three times a day.

Sept. 17th, 12 M. Pulse 72, respiration 20. Temp. of atmosphere. 88° F.; Temp. of hand, 98°5′; Temp. under tongue, 99°5′. Amount of urine excreted during last 24 hours, grs. 14645. Amount excreted hourly, grs. 610. Sp. Gr. 1010. Urea in grs. 146459 of urine, 196.910; Uric acid in grs. 146459 of urine,

7.975; Urea in 1000 parts of urine, 12.445; Uric acid in 1000 parts of urine, 0.544

The snake-root tea and sulph. of quinia and citrate of iron, have produced an increase of the solid constituents of the urine.

Sept. 19th, 2 o'clock P. M. Pulse 76, respiration 24. Temp. of atmosphere, 89° F.; Temp. of hand, 98°; Temp. under tongue, 99°. Sp. Gr. of urine, 1012; Urea in 1000 parts, 10.270; Uric acid in 1000 parts, 0.247.

Sept. 20th. Pulse 96, respiration 24. Temp. of atmosphere, 83° F.; Temp. of hand, 100°; Temp. under tongue, 102°. Amount of urine passed during last 24 hours, grs. 20400. Specific Gravity 1010.

Examination of Blood, No. II.—Blood watery in appearance, and coagulated slowly. Reaction decidedly alkaline. After standing twenty hours, the clot contracted but little, and it was soft, possessing but little consistency.

In the specific gravity bottle, the colored blood corpuscles gravitated towards the bottom, and left above a light yellow, transparent clot. Serum of a light yellow color. Specific gravity of blood 1030·5; specific gravity of serum 1021·3

Water,		Solid Matters.	
In 1000 parts of Blood,	877·553	In 1000 parts of Blood,	122·447
" " Serum,	927·757	" " Serum,	72·243
(1) " " Liq. Sang.	925·725	(1) " " Liq. Sang.	74·275
(2) " " Liq. Sang.	911·124	(2) " " Liq. Sang.	88·876
		Serum of 1000 pts. Blood,	68·435

Fixed Saline Constituents.

In 1000 parts of Blood,	3·316
" " Serum	3·326
(1) " " Liquor Sanguinis,	3·328
(2) " " Liquor Sanguinis,	3 965
In Serum of 1000 parts of Blood,	3·141
" 1000 parts of the Solid Matters of Blood,	27·083
" " " " " " " Serum,	45·901
" " " " " " " Liquor Sanguinis,	44·790
" " " " " " " Blood Corpuscles,	3·240
" Blood Corpuscles of 1000 parts of Blood,	0·175
" 1000 parts of Moist Blood Corpuscles,	0 841

1000 Parts of Blood Contained,

Water,			877·553
Dried Blood Corpuscles,	51·987	Dried Organic Residue,	51·812
		Fixed Saline Constituents,	0·175
Fibrin,			1·925
Albumen, Extractive and Coloring Matters,	68·335	Dried Organic Residue,	65·194
		Fixed Saline Constituents,	3·141

1000 PARTS OF BLOOD CONTAINED,

Moist Blood Corpuscles,	207·948	Water,	155·861
		Organic Residue,	51·812
		Fixed Saline Constituents,	0·175
Liquor Sanguinis,	792·052	Water,	721·692
		Albumen, Extractive & Coloring Matters,	65·194
		Fixed Saline Constituents,	3·141
		Fibrin,	1·925

1000 PARTS OF MOIST BLOOD CORPUSCLES CONTAINED,

Water,	749·519
Dried Organic Matters,	249·154
Fixed Saline Constituents,	0·841

(1) 1000 PARTS OF LIQUOR SANGUINIS CONTAINED,

Water,	925·725
Albumen, Extractive and Coloring Matters,	68·817
Fibrin,	2·032
Fixed Saline Constituents,	3·326

(2) 1000 PARTS OF LIQUOR SANGUINIS CONTAINED,

Water,	911·167
Albumen, Extractive and Coloring Matters,	82·312
Fibrin,	3 965
Fixed Saline Constituents,	2·430

This analysis shows that the continued action of the malarial poison has reduced the colored blood corpuscles to 51.987 dried, or 207.948 moist, which is a little more than one-third of the normal standard.

The fixed saline constituents of the colored blood corpuscles are also, not only correspondingly, but absolutely diminished in amount. I have derived much benefit in the treatment of the effects of malarial fever, from the phosphates of iron, lime, soda, and potassa. It is probable that they act beneficially by supplying those salts which are deficient. If the hypophosphites of lime, soda, potassa and ammonia, act with as much power and in the manner asserted by Dr. Churchill,* they will prove valuable remedies in the latter stages of malarial fever. I have employed them upon myself, this winter, after an attack of intermittent fever, with apparent benefit.

*. "On the Proximate Cause and Specific Remedy of Tuberculosis," by Dr. John Francis Churchill. Dublin Hospital Gazette, Aug. 15th, 1857. Ranking's Abstract, No. 26. July to Dec., 1857, p. 47. Dr. Churchill has employed the hypophosphites, in the treatment of tuberculosis, with success, and asserts that they increase nervous force, and are infinitely superior to all other medicines as hæmatogens.

CASE XXII.—German laborer, age 30; height 5 feet 5 inches; weight, in health, 112 lbs.; light hair, blue eyes; small, delicate man. Has been in the United States three years and in Savannah three months. Has been "keeping store" on the river, near the rice mill. Was taken sick with chill and fever two months ago. Complexion anæmic. Complains of great weakness. Lips, gums and tongue pale; tongue coated with white fur.

Sept. 10th, 11 o'clock A. M. Says that he had his chill yesterday. ℞. Sulph. of quinia grs. v. every three hours, up to grs. xv.

Sept. 11th, 12 o'clock, M. Skin cool; in a profuse perspiration. Pulse 76; respiration 19.

Temperature of Atmosphere, ...	85° F.
" " Hand, ...	94
" under Tongue, ...	98
Amount of Urine excreted during last 17 hours.	grs. 5072
" " " " hourly " " "	" 298·9
Calculated amount for 24 hours,	" 7157

Specific gravity 1014·5. Color a shade higher than normal.

ANALYSIS XXXV.	Grs. 5072 of Urine, excreted in 17 hrs., contained grains,	Grs. 7157 calculated for 24 hours, contained grains,	1000 parts of Urine contained,
Water, - - - - -	4886·160	6895·783	963·462
Solid Matters, - -	185·340	261·514	36·538
Urea, - - - - -	65·475	92·385	12·907
Uric Acid, - - -	2·750	3·880	0·552
Extractive & Coloring Matters,	102·485	144·607	20·225
Fixed Saline Constit's,	14·631	20·642	2·884

In this case, as in the preceding, we see that the depressed state of the forces, consequent upon the continued action of the malarial poison, was attended by a marked diminution of the solid constituents of the urine.

Sept. 12th, 12½ o'clock, P. M. Pulse 72; respiration 19. Skin cool.

Temperature of Atmosphere, . . .	84° F.
" " Hand, ...	97 25′
" under Tongue, ...	99 9
Amount of Urine excreted during the last 24 hours, .	grs. 13652
" " " " hourly " " " " . .	" 568·8

Specific gravity 1011·3. After 16 hours, a copious deposit of urate of soda and triple phosphate.

ANALYSIS XXXVI.	Grs. 13652 of Urine, excreted in 24 hours, contained grains,	1000 parts of Urine contained,
Water, - - - - - - - -	13242·437	970·000
Solid Matters, - - - - -	409·563	30·000
Urea, - - - - - - - -	209·520	15·316
Uric Acid, - - - - - - -	19·710	1·443
Extractive and Col'g Matters,	158·485	11·676
Fixed Saline Constituents, -	20·265	1·567

Under the action of the sulphate of quinia, the urea, uric acid and extractive and coloring matters, have been increased in amount.

Sept. 13th, 12 M. Much better. Amount of urine passed in last 24 hours, grs. 10,100. Amount of urine passed hourly, grs. 420·8. Sp. Grav. 1010. ℞. Quassia and soda, and snake-root tea.

Sept. 14th. Amount of urine passed in 24 hours, grs. 14084. Amount of urine passed hourly, grs. 587. Sp. Gr. 1006.

Sept. 15th. Pulse 64; respiration 18. Temp. of atmosphere, 85° F.; Temp. of hand, 98°; Temp. under tongue, 99°. Specific gravity of urine 1007·1. Grs. 13631 of urine contained, urea 96·400; uric acid 6·151. 1000 parts of urine contained, urea 6·003; uric acid 0·446. Urine excreted in 24 hours, grs. 13631; urine excreted hourly, grs. 568.

CASE XXIII. Irishman; height 6 ft; black hair, black eyes. This patient had been in the Savannah Poor House for three months, suffering with phthisis pulmonalis in its advanced stages. For the last two months he had been confined to the ward and recently he had been confined to his bed.

August 23d. During the night, was taken with chill, followed by fever. Had chill and fever four nights in succession, until the paroxysm yielded to the action of the sulphate of quinia. The chill and fever returned several times after this. Under the combined actions of pulmonary consumption and intermittent fever, the patient lost strength rapidly, and died Sept. 4th.

(1.) AUTOPSY 12 HOURS AFTER DEATH.

Exterior.—Body much emaciated, universal sallow color, marked cadaverous rigidity.

Head.—When the skull cap was removed, about f ℥ iss. of serum and blood escaped from the base of the brain. Dura-mater normal. Arachnoid membrane slightly opalescent in several spots, especially in the neighborhood of the larger blood vessels. The greatest part of this membrane, however, was transparent and normal in appearance. Subarachnoid fluid appeared to be more abundant than usual. Bloodvessels of pia mater filled with blood. The venticles of the brain contained small

quantities of serum. The cortical and medullary substances, the cerebellum, pons varolii, the medulla oblongata, and the spinal marrow, appeared natural to the naked eye.

Chest.—Tubercles of various sizes, in various stages of development and disintegration, were deposited throughout the substance of both lungs. Many of the largest were broken down into a pus-like matter, mingled with portions of the cheesy tuberculous substance.

Heart normal in size; weight grains, 6557. Portions of the right heart showed the commencement of fatty degeneration. The right auricle was filled by a large light yellow clot, which was attached to the tricuspid valves and cordæ tendinæ, and sent a large cylindrical branch down the vena cava. The surface and whole structure of this clot was of a light yellow color and appeared to be entirely free from colored blood corpuscles. In the right auricle and venticle were several other smaller clots, which resembled ordinary coagulated blood, and must have been formed posterior to the light yellow fibrinous clot. The lower portion of the vena cava contained coagulated blood. No clots were found in the left auricle and ventricle. The carotid arteries contained flattened cylindroid, light yellow clots, which sent off branches to the smaller arteries. These clots appear to have been formed before death, when the circulation was greatly diminished in force.

Abdomen.—Stomach small, contracted; small intestines and colon inflated with air. Mucous membrane of stomach of a purplish red color, in spots, presenting a mottled appearance. Blood-vessels upon the exterior filled with blood. The small intestines contained fecal matters colored by bile. Internal surface of a dark purplish and reddish yellow hue. Blood vessels upon the exterior and through the structures of the intestines were filled with dark blood. Glands of Peyer, normal, not enlarged. Brunner's glands did not attract attention.

Liver.—The form of the liver was abnormal; it had no left lobe, and in its general shape resembled a spleen. The color was purplish red. The structure was unusually firm. It required considerable force to tear it asunder. It cut toughly under the knife, and the lobules started out from the cut surface, as if they had been bound down. The fibrous capsule surrounding the exterior of the liver, forming a sheath for the large vessels lying in the portal canals, was thickened. The individual lobules of the liver were surrounded with fibrous tissue. The lobules of the liver have been described by Malpighi, (1) Kiernan, (2) Mūl-

(1) Malpighi. De Viscerum Structura Bologna. London: 1699.
(2) The Anatomy and Physiology of the Liver, by Francis Kiernan. Philosophical Transactions of the Royal Society of London. 1833. P. 714.

ler, (3) Leidy, (4) and others as isolated from each other, and each invested with a layer of areolar or fibrous tissue. In the pig, in which these lobules were first noticed, and in the Polar bear according to Müller, and in the octodon cummingii, according to Hyrtl, (5) the lobules are invested by fibrous tissue, but in the liver of the human subject, and in that of vertebrate animals generally, the lobules are not separated from each other by a fibrous partition, and there is no areolar or fibrous tissue or prolongation of Glisson's capsule between them or in their interior. Vogel, Henle, (6) Bowman, (7) and Beale, (8) have failed to detect any fibrous tissue in the interlobular fissures of the normal human liver.

In cirrhosis of the liver, on the other hand, there is a remarkable development of fibrous tissue in the parenchyma of the liver, and the individual secreting segments become prominent, or even form isolated lobules. The increase of fibrous tissue in the liver of this subject, was manifest to the eye, and especially when the liver was subjected to the action of a stream of water, and gently mashed between the fingers. The softer parts were washed out, and the fibrous tissue remained. The character of this was determined by microscopical examination. The portions of the liver surrounded by the indurated fibrous tissue appeared to be but little altered and could be readily scraped away.

The cirrhosed condition of the liver was not the result of malarial fever, for the microscopical examination showed that the fibrous tissue was abundant and well formed. The whole structure of the liver could not have been pervaded by fibrous tissue in the course of a few days. It is reasonable to conclude with Dr. Budd, (9) that the remarkable changes in cirrhosis, are mainly the consequence of adhesive inflammation in the areolar tissue about the small twigs of the portal vein, and in the areolar tissue of the portal canals, by which serous fluid and coagulable lymph are poured out. In this stage, the liver may be enlarged. The serous part of the effusion is next absorbed, the lymph contracts, becomes converted into dense fibrous tissue, which divides the lobular substance of the liver into well-defined masses, and gives great density and toughness to the organ.

(3) Müller. De Glandularum Seceinent Struct. Penit, Berlin. 1830. Elements of Physiology, by J. Müller, M.D. Translated by Wm. Baly, M.D. Lond., 1840. Vol. 1, p. 493.

(4.) Researches into the Comparative Structure of the Liver, by Joseph Leidy, M.D. American Journal of the Medical Sciences, new series, vol. xv., 1848, p. 18.

(5) Hyrtl. Lehrbuch der Anatomie des Menchen. 1850.

(6) Hufeland's Journal. 1838. P. 8.

(7) Article, "Mucous Membrane," in Todd's Cyclopœdia of Anatomy and Physiology, by W. Bowman. Vol. iii., p. 497. The Physiological Anatomy and Physiology of Man, by Todd & Bowman. Philadelphia: 1857, p. 773.

(8) On Some Points in the Anatomy of the Liver of Man and Vertebrated Animals, by Lionel S. Beale, M.D. London: 1856, pp. 13, 16, 19, 72.

(9) On the Diseases of the Liver, by George Budd, M.D. London: 1857, p. 143.

Finally, this fibrous tissue, compresses the small twigs of the portal vein and the small gall ducts, and thus impeding the escape of the bile and the flow of blood, induces great atrophy of the original hepatic tissue, and causes by a deprivation of blood and the admixture of this dirty white fibrous tissue, marked changes in the color of the liver. If these views of Dr. Budd be correct, it is evident that this condition of the liver could not have resulted from an attack of malarial fever, which had commenced only twelve days before death. The weight of this liver was 22968, troy grains, or 52½ ounces avoirdupois. According to the researches of Dr. John Reid, (10) the liver weighed in 43 cases, out of 82, between 48 and 58 ounces in the adult male; and in 17 cases, out of 36, its weight in the adult female ranged between 40 and 50 ounces. It may then, in general terms be stated that the weight of the liver in health varies from 3 to 4 pounds, according to the quantity of blood which it may contain at the time it is examined. The weight of this liver therefore, was normal. It was however far more engorged with blood than is usual in cirrhosis. If this patient had died from tuberculosis and not from malarial fever, it is probable that the liver would have weighed less than in health.

This patient was an Irish laborer. This class are addicted to the free use of ardent spirits, and the true cause of this cirrhosed condition of the liver, was the action of the alcohol in the portal blood, absorbed directly from the stomach and intestines, upon the bloodvessels and secreting apparatus of the liver. We know that this form of disease is most frequent in large manufactoring towns, among the poorer classes who drink large quantities of ardent spirits. All the cirrhosed livers which I have had an opportunity of examining, have been taken from the bodies of those who have been accustomed to the free use of spirits. So common, and well known is this cause, that cirrhosis is familiarly termed by the English practitioners, gin-drinkers' liver.

The color of the liver of this patient was very different from that generally presented in cirrhosis. Upon the inferior surface of the liver, there was a small portion of a dark slate inclining to bronze color, resembling the color of the malarial fever liver, and forming a striking contrast with the surrounding purplish red color. In cirrhosis, owing to the admixture of fibrous tissue and the impediment to the circulation of the blood, and the passage of the bile, and the compression of the capillaries and secreting apparatus, the normal dull-reddish brown color of the liver

(10) London and Edinburgh Monthly Journal of Med. Science, April, 1843. See also Comparative Weights of the Liver of Animals, by Joseph Jones, M.D. Smithsonian Contributions to Knowledge. 1856, p. 113.

is altered sometimes to a bright canary yellow, sometimes to a brownish or greenish, and occasionally to a reddish color. A section of the liver upon a general view presents the greyish and yellow color of impure bees-wax.

The researches of Dr. Thomas Stewardson, (11) in the Philadelphia Hospitals, confirmed by those of Dr. Wm. T. Howard, (12) in the Baltimore Alms House, of Dr. Swett, (13) in the New York Hospital, of Drs. Anderson, (14) and Frick in the Baltimore Almshouse and Infirmary, and of Dr. Richard D. Arnold, (15) in the Savannah Marine Hospital and Poor House, have shown that the color of the liver in malarial fever, is changed from the normal reddish brown, to a slaty or bronze, or mixture of bronze and olive. The observations of the author, which we hope to present in subsequent numbers of this journal, confirm the statements of these observers.

In this case, owing to the pathological conditions of cirrhosis, the admixture of fibrous tissue, impediment of the circulation of the blood, and flow of bile and the compression of the capillaries and secretory apparatus, the color of the liver was not so marked as in those cases of malarial fever, in which the liver was normal before the introduction of the malarial poison. Allowing due weight to the pathological changes of cirrhosis, it is evident that the change in the color of the liver, was similar in all respects to the slate or bronze color of livers which were normal before the onset of the malarial fever. This change in the color of the liver in malarial fever is due to changes in the amount, and physical and chemical constitution of the blood in the capillaries of the liver, and to physical and chemical changes in the bile and the contents of the secretory apparatus. The blood which issued from the cut surface of the liver, remained of a dark purplish color, and did not change to the arterial hue upon exposure to the oxygen of the atmosphere. The loss of this power to change from the venous to the arterial hue is significant of profound changes in the constitution of the colored blood corpuscles.

In this, and many other cases of malarial fever, I have observed the bile to be of high specific gravity—thick, concentrated, and of a greenish black color when seen in mass, and of a gamboge yellow, when spread in thin layers. I have always found

(11) Stewardson, on Remittent Fever. American Jour. Med. Sciences, April, 1841, new series, vol. i., p. 289. Elliotson's and Stewardson's Practice of Medicine, p. 338.

(12) Communicated by Dr. Stewardson. Am. Jour. Med. Sciences, Jan. 1845.

(13) Swett, on Pathol. of Remit. Fever. " " " " " "

(14) Published by Dr. Alfred Stille. " " " " April, 1846.

(15) "An Essay upon the Relation of Bilious and Yellow Fever, prepared at the request of, and read before the Medical Society of Georgia, April, 1856," by Richard D. Arnold, M.D.—Southern Med. and Surg. Journal, vol. xii., p. 515.

the filtered decoction of malarial fever livers, to be of a brownish yellow color, whilst the decoction of normal livers is of a light yellow, whilst that of yellow fever livers is of a bright golden yellow. The color alone, would seem to point to pathological changes in malarial and yellow fevers, differing in each disease. The amount of blood contained in the capillaries of the malarial liver has always appeared to be greater than normal. The combination of these three causes will account for the peculiar color of the liver in malarial fever.

The liver of yellow fever on the other hand, as far as my observations extend, is of a bright yellow color, (readily extracted by water and alcohol,) firm texture, and contains much less blood than the malarial liver. The yellow fever, liver although resembling fatty degeneration in color, as far as my observations extend, gives no evidence of such a change under the action of chemical re-agents. A solution of liquor potassa readily dissolves the liver of malarial fever, but acts very slowly upon the yellow fever liver.

These facts are sufficient to show that the patholigical changes are widely different in the two diseases. The liver of this patient who had died with phthisis pulmonalis and intermittent fever, was carefully tested for grape sugar, with Moore's and Trommer's tests. Not a trace of grape sugar was obtained. The absence of the grape sugar was not due to the cirrhosed condition of the organ, for I have detected grape sugar in the cirrhosed livers of patients who had died from other causes than malarial fever. Diabetes mellitus, has existed when much of the lobular substance of the liver had been destroyed by cirrhosis, and the secretion of the bile defective and the passage of the blood through the liver much impeded. Such a case occurred in King's College Hospital, under the care of Dr. George Budd.([16]) From numerous chemical examinations of the livers of patients who had died with the different forms of malarial fever, I am convinced that the absence of grape sugar is due to the action of the malarial poison upon the special ferment of the blood.

When tested for glycogenic hepatic matter (animal starch), after the method of Bernard, an abundant precipitate was obtained. When the fibrous capsule of the liver was torn off, spread upon a glass slide, partially dried and treated with tincture of iodine, the cellular tissue was not altered by the tincture of Iodine, but wherever a particle of liver adhered to the fibrous tissue, there a purple and blue color was produced. Under the microscope the fibrous tissue of the liver generally, and of the portal canals, were found to be completely infiltrated with this animal starch. Under the microscope the liver cells appear-

(16) "On the Diseases of the Liver," by George Budd, M.D. London: 1857.

ed to be paler and have fewer oil globules and granules than usual, but otherwise, they were normal. When single cells were treated with tincture of iodine under the microscope, I was not able to demonstrate satisfactorily whether they contained animal starch. When, however, a number of them, in mass, were treated with tincture of iodine, the characteristic blue color was produced.

In this case of intermittent fever, the special ferment in the blood which transforms animal starch into glucose, had been destroyed, whilst the power to manufacture starch from both nitrogenized and non-nitrogenized materials, was exercised by the liver, and hence the absence of glucose and the accumulation of glycogene. From chemical examinations of the livers of the different forms of malarial fever, from the summer of 1856 to the present time. I have obtained similar results—an abundance of animal starch, without a trace of grape sugar. Livers were set aside and examined after intervals of 12 hours. The last examination was made 36 hours after the first. At every examination the result was the same—an abundance of animal starch, without a trace of grape sugar.

The mere presence of starch in the liver is not peculiar to malarial fever—it is not a pathological condition. In the month of September 1856, I had an opportunity of examining chemically the liver of a patient who had been under the care of my friend and former colleague Dr. J. B. Read. This patient had black vomit, and all the symptoms of yellow fever, and the liver presented the yellow box-wood color peculiar to this disease. Drs. Read and Arnold, who have had extensive experience in the treatment of yellow fever, pronounced it a genuine case of yellow fever. ([17]) Chemical examination gave decided evidence of the presence of animal starch in the structure of the liver. The liver of a yellow fever patient brought from Norfolk by Dr. J. B. Read, ([18]) presented a similar appearance, and also yielded animal starch.

I have detected this substance in the human liver, in normal condition after sudden death, from diseases of the circulatory apparatus, and appoplexy, and phthisis, and in abnormal states, as cirrhosis, fatty degeneration, and cirrhosis and fatty degeneration combined. I have examined the livers of numerous vertebrate and invertebrate animals, injected and uninjected, and in every instance animal starch has been found. Whether the elaboration of this product is confined specially to any one of

(17) For report of this case, see Addendum to Dr. Richard D. Arnold's Essay on Bilious and Yellow Fever, p. 3.

(18) Chief Physician of the Savannah Volunteers, who went on to Norfolk in 1855, and rendered medical service during the terrible epidemic of yellow fever.

the anatomical elements of the liver, I have not as yet been able to determine with certainty, for it has been found in the fibrous tissue of the portal canals, in the hepatic ducts and in the secreting cells. We would naturally infer that it was formed in and by the secreting cells of the liver, and was deposited in other positions by endosmosis. The exact point at which it is converted into grape sugar, is also unknown. Bernard has shown that this change is due to the action of a special ferment contained in the blood. Experiments have shown that the liver cells contain grape sugar as well as the hepatic veins. If the starch is formed in the secreting cells, and grape sugar is formed in them also, then the special ferment of the blood must be absorbed by the secreting cells. A portion of the animal starch may be absorbed by the hepatic veins, and be acted upon by the ferment, partially, if in large quantities, and finally be deposited in the organs and tissues. This view is sustained by the fact that this substance is not confined to the liver. I have found it in considerable abundance in the malarial fever spleens, and in normal spleens taken from patients who had died from cirrhosis and fatty degeneration of the liver combined, and in one case where the patient (an aged negro man) had died suddenly from apoplexy.

A carbo-hydrate, similar in its composition and properties to vegetable cellulose, has been found in some of the lower classes of animals. C. Schmidt, (19) discovered cellulose in the mantle of phallusia mammillaris (one of the mollusca,) and Lowig (20) and Kolliker, have discovered it in the outer tube of salpæ, in the leathery mantle of the cynthiæ, and in the cartilaginous capsule of the simple ascidiæ. The researches of Odier, (21) Lassaigne, (22) Payen, 23) Children, (24) and Danniel, and especially of C. Schmidt, (25) have shown that a body closely resembling cellulose, (vegetable fibre, which C. Schmidt, regards as composed of a carbo-hydrate and of a nitrogenous body having the composition of the muscular fibre of insects,) forms the true skeleton of all insects and crustacea. This substance, called chitin, constitutes not only the external skeleton, the scales and hairs of insects, but it also forms their trachæ, and even one of the layers of the intestinal canal. Cellulose or animal starch

(19) Zu Vergl. Physiol. der Wirbellosen Thiere. 1845, S. 62. See also "Contributions to the Comparative Physiology of the Invertebrate Animals, being a Physiologico-Chemical Investigation," by Dr. Carl Schmidt. Taylor's Scientific Memoirs, vol. v., part xviii. 1852, p. 34.

(20) Ann. de Scienc. Nat., 3d series, T. 5, pp. 193–232.

(21) Mémoiré de la Societé d'Historie Naturelle, tom. 1, p. 29, et. sq.

(22) Comptes Rendus, tom. xvi., p. 1087 Journ. de Chim. Med. 1—9. p. 379.

(23) Comptes Rendus, tom. xvii., p 227.

(24) Todd's Cyclopædia of Anatomy and Physiology, vol. ii., p. 882.

(25) Zur Vergleichend, Physiol. der Wirbellosen. Thiere. 1845. S. 32—69. Trans. in Taylor's Sci. Memoirs, vol. v. 1852. pp. 14–28.

has been discovered by Rudolph Virchow, (26) in the brain and in some of the higher nerves of sense. These observations were subsequently confirmed by those of George Busk. (27) In 1853, Virchow (28) announced the discovery of corpuscles presenting the same reaction as the corpora amylacea of the brain, in the malpighian corpuscles of diseased human spleens—in the condition termed waxy spleen. Virchow, Bennet and Carter have also pointed out the existence of a peculiar amyloid substance in the liver, in some chronic forms of disease, as waxy or fatty degeneration.

Notwithstanding that much time and labor were expended upon the microscopical and chemical examinations of the liver in this case, and in many others which we hope to record in future, and notwithstanding that several facts of value to pathology have been discovered, still the whole subject is open for investigation and presents an inviting and untrodden field to the investigator. These imperfect results are presented with the hope that others may be excited to enter the same field, and not only prove their truth or falsity; but also remove the uncertainty and obscurity, and establish a clear knowledge of the pathology of malarial and yellow fevers. Those who enter upon this field of investigation will soon be convinced, that chemical and microscopical examinations of the liver are tedious, and to a great extent uncertain and vague, on account of the complexity and delicacy of the structures, and secretions.

The accuracy and value of pathological investigations, depend upon the state of anatomy and physiology. If anatomists and physiologists are not agreed with reference to the minute anatomy of the liver, and the mode of formation, and offices of its secretions, how can the pathologist arrive at accurate and definite conclusions, when he has to investigate not only the complex anatomical structures and secretions, but also examine the morbid physical and chemical alterations, and if possible, discover the character and mode of action of the morbific agent or agents? The difficulty of correct microscopical examination of the liver is strikingly shown by the differences of opinion amongst the most distinguished anatomists, with reference to the connexion of the liver cells, with the hepatic ducts. Kierman, (29) Schröder Vander Kolk, (30) Krukenberg, (31) We-

(26) Virchow's Archiv. b. vii., h. 1, p. 135.
(27) Journal of Microscopical Science, No. vi, p. 101.
(28) Comptes Rendus, No. 23. December 2, 1853.
(29) The Anatomy and Physiology of the Liver, by Francis Kiernan. Philosophical Transactions. 1833.
(30) In Backer's Essay. De Structura Subtilori Hepatis Sani et Morbosé.
(31) Untersuchungen ueber den feineren Bau der Menschichen Leber, in Müll. Archiv., St. 318.

ber, (32) Retzius, (33) Theile, (34) Backer, (35) Leidy, (36) and Beale, (37) have advocated the existence of a tubular basement membrane, continuous with the ducts, within which lie the liver cells. Kolliker, (38) describes the hepatic cells as so arranged in the lobules, as to form a net work, by the simple apposition of their flat surfaces, without the assistance of any foreign connecting intermediate or investing coat. Not a trace of biliary ducts is to be observed in this net-work, and it is impossible to make out any connection between the biliary ducts and hepatic cell net-work, which is undoubtedly the secreting portion of the liver. Dr. Handfield Jones, (39) asserts that the ducts terminate in blind extremities, on reaching the lobule, instead of forming a plexus within it, and that the chief agents in the secretion of bile, and the cells lining these ducts, and not the cells in the lobular substance. These facts, show the necessity for careful and laborious research, and the importance of having a large number of careful investigators engaged in this field. (40)

Spleen.—Color of spleen, dark slate, resembling in all respects that common to the severer forms of malarial fever. Weight, grains, 6343. According to the observations of Dr. John Reid, the weight of normal spleens ranges from 2187 to 3062 grains. This organ then was enlarged. It was partially disorganized; its fibrous capsule was torn upon the slightest pressure, and the cellular framework was readily ruptured when the substance of the spleen was pressed between the fingers. The pulp (mud) of the splen was of a dark reddish brown color, and changed very slowly and slightly, when exposed to the atmosphere. After 12 hours exposure to the atmosphere, although the color became a

(32) Annot. Anat. et Physiolog., Prol. vi., vii., viii. Lips. Zusätze zu seinen Untersuchungen über den Ban der Leber, in Berichte der K. Sachs. Ger. d. Wissench, zu Leipzig, St. 151. Programmatar Collecta, Fasc. 11. Lips.

(33) Uber den Bau der Leber, Müll. Archiv. 11. p. 141.

(34) Art. Leber, in R. Wagner's Handw. der Phys. 11, St. 308.

(35) De Structura Subtiliori Hepatis Sani et Morbosé, Diss Inaug. Trajecti ad Rhenum.

(36) Researches into the Comparative Structure of the Liver. American Jour. of the Medical Sciences, Jannary 1848, p. 18.

(37) "On some points in the Anatomy of the Liver of Man and Vertebrate Animals," by Lionel S. Beale, M.D. London: 1856.

(38) Manual of Human Microscopical Anatomy, by A. Kolliker. Translated by G. Busk and T. Huxley. Philadelphia: 1854, p. 532, et. seq.

(39) C. Hanfield Jones, on the Secretory Apparatus of the Liver. Philosophical Transactions, 1846, p. 473. On the Structure and Development of the Liver. Phil. Trans. 1849. 1. p. 109. Further inquiries as to the Structure, Development and Functions of the Liver. Phil. Trans. 1853, Part i. p. 1–29.

(40) Of all anatomists, Dr. Lionel S. Beale appears to have examined the liver with the greatest care, and to have arrived at the most accurate results, and I would recommend his recent work "On some points in the Anatomy of the Liver of Man and Vertebrated Animals. London: 1856," to the young members of the medical profession who may enter upon similar investigations. This work contains minute and valuable directions for the injection and preparation of the liver for microscopical examination.

little lighter and redder, still it by no means assumed an arterial hue, as is usual with normal spleens. This spleen was not however as much enlarged and disorganized, as in severer cases of malarial fever. When the fibrous capsule was torn off, spread upon a glass slide, and treated with tincture of iodine, the fibrous tissue was simply colored red by the iodine, whilst in the meshes of the fibres were seen irregular blue and purple masses, resembling in all respects the animal starch of the liver. When the spleen was subjected to a stream of water, and the pulp washed out of the cells, and the cellular frame-work and bloodvessels thus cleansed, spread upon a glass slide, and treated with a solution of iodine, numerous small irregular blue and purple masses were seen in the meshes of the fibrous tissue of the frame-work, and also of the blood-vessels.

Kidneys—normal in appearance. Bloodvessel filled with blood. Weight, grains 4156.

Bladder—contracted, contained no urine.

(To be continued.)

ARTICLE XIX.

Emulsions. By ROBERT BATTY, M. D., of Rome, Georgia.

[The following excellent suggestions on *Emulsions*, received some months since, have not appeared hitherto, for the want of space. We gladly find a place for them in the present number.

The writer, it seems, has paid considerable attention to pharmaceutical combinations, and lays great stress upon the neatness and beauty which those compounds should present. He gives some good hints as to the mode of preparation by which these desirable qualities may be secured.

As regards his reference to our Formula for Dysentery, published some months ago, we would simply say, that we gave it to the Profession in the exact form in which it occurred to us, and in which it gained our confidence by its marked effects, and just as it has been used ever since, not only by ourselves, but by many others, with the most gratifying results. We would prefer, therefore, to retain the amount of each ingredient intact, rather than to sacrifice, in any degree, the success of the treatment to pharmaceutical neatness, or agreeableness of taste.

We see that THE LONDON LANCET, a most critical and fastidi-

ous Journal, in transferring this formula to its pages, did not see fit to suggest an alteration.—EDTS.]

There is, perhaps, no class of preparations in the dispensing practice of country physicians, so badly done up as emulsions. A few practical suggestions, from one who has spent some years in the drudgery of a dispensing shop, will, I trust, not be devoid of interest to those who desire to furnish their patients with nauseous remedies in this most eligible form.

An emulsion may be defined to be a combination of oil, fat, or resin, with water, through the intervention of an alkali, gum, albumen, or casein. It is, in other words, an artificial milk, of which nature has given us a perfect type in the milk of animals, the juices of the garden lettuce, the poppy, the asclepias syriaca, the ferula assafœtida, and a large number of both indigenous and foreign plants, are samples or copies furnished us for our study and imitation.

In attempting to arrive at the points of a good emulsion, we cannot do better, perhaps, than take cow's milk as our standard of comparison; and first, we notice that it is, when fresh, an opaque, homogeneous liquid—such should be the character of the well-formed emulsion. The milk, upon standing for a time, throws up its cream to the surface—the emulsion, by age, will do the same; but as we do not find masses of butter upon the milk, neither should we have globules of free oil on the top of he emulsion—the latter, like the former, should admit of free dilution with water, without any separation or decomposition. Like milk, while it should not be too thin and watery, it is by no means thick and viscid; in color, pure white, if possible—if tinted, let it be cleanly and agreeable to the eye; in odor and taste, as little repugnant as the nature of the remedy will permit.

Let us now inquire how these indications are to be carried out in practice. We will take, for illustration, the recipe upon page 163 of this Journal—a recipe medicinally admirable, but pharmaceutically bad. We have here, of oils $2\frac{1}{2}$ ounces, solid materials 3 ounces, tincture 1 ounce, and water $3\frac{1}{4}$ ounces—a preparation entirely too concentrated, thick and viscid—a teaspoonful of which forms a more nauseating dose than four times

the quantity of a well made milky emulsion. When diluted with an equal bulk of water, it separates into three distinct layers—a dirty looking fluid, with a curdled precipitate at the bottom and an oily layer upon the top: in both respects, then, most unlike its prototype—milk. In this case, the quantity of water has been insufficient to prevent the curdling action of the lavender upon the mucilage; it should therefore be increased; and this may best be done by using a portion of aqua menth. pip. as a corrigent, and also to conceal the flavor of the turpentine. The quantity of soda, upon the other hand, is excessive, its saponifying properties being unnecessary—so much only should be used as is medicinally requisite.

Salts should enter into emulsions only when clearly indicated in the case, and then in small quantity; for, with the exception of the alkaline salts, they impair the permanence of the preparation—while the alkaline salts, themselves, in large quantity, offend the palate and stomach. The use of ordinary spts. turpentine should be avoided if possible—fresh camphine or pine oil is preferable; and when this cannot be obtained, the spts. turpentine may be put in a retort or flask, with a little water, and one half of it distilled off for medicinal purposes: as prepared in this manner, it is so nearly free of taste and odor, as to be scarcely recognizable in the emulsion. The castor oil should be clear and limpid, and wholly soluble in alcohol; and the powdered gum arabic, when rubbed upon a pill tile, with a little water, should form a bright and clear mucilage, free of color.

Upon remodeling the formula, in accordance with the views above indicated, we have a handsome preparation, as little repugnant to the taste as the remedies will admit, and the recipe will read somewhat as follows:

℞. Ol. Ricini Opt. . . . f℥ij.
" Terebinth, Recentis. . . f℥ss.
Sodæ Bi Carb. . . . ʒij.
Pul. Acacia Opt. . . .
" Sacch. Alb. . . . *aa* ℥i.
Sps. Lavendul Comp. . . f℥i.
Aquæ Camph. . . .
" Menthar Pip. . . *aa* f℥vj.

M. Ft. Emulsio. Sig. a tablespoonful to be taken every two hours.

It is not sufficient, however, that we have a well devised formula: skillful manipulation in combining the ingredients is also of prime importance, if we would have a handsome product. The simple mixture of the materials in a bottle, gives us a heterogeneous mass, utterly devoid of form and comeliness; and even when well begun, a single false step in the process will often wholly defeat the end proposed. Yet the process, when once understood, is by no means a complicated or difficult one.

In compounding the above formula, the first step is to weigh the dry materials—soda, gum and sugar—and combine them in a suitable mortar, capable of containing a pint—then add of the camphor water sufficient to form a thick mucilage, which gives a crackling sound under the pestle. Mix well the turpentine and oil in a graduate, and add it in successive portions of 5 or 10 drops, triturating thoroughly after each addition, until about one-fourth has been thus combined with the mucilage, which will be found to have thickened in the process. It will now be necessary to add a few drams of the camphor water to attenuate the mixture to its former consistence, when it will be proper to add the remainder of the oils, slowly, as before, and with constant trituration. The camphor water may now go in, dram by dram, followed by the mint water; and lastly, the sps. lavender, which should be added cautiously, drop by drop, continuing the trituration constantly throughout the process.

I have been accustomed in past years to compound an emulsion of Copaiba, extensively and favorably known to the Profession here as "No. 310." The recipe, obtained from Prof. Miller, of the Augusta College, is as follows:

℞. Copaibæ,
Tinct. Cubebæ,
*Syr. Uva Ursi, . . *aa* f ℥ ij.
Pul. Acaciæ Opt. . . ℥ ij.
Aquæ Cinnam. . . . f ℥ xvj.

M. Ft. Emulsio. Sig. Dose, a tablespoonful three times daily.

I use, in my own practice, a formula, as I think it somewhat more elegant than the above—

* Syrup Uva Ursi contains the active matter of four ounces of the leaves in each pint of syrup.

℞. Copaibæ, ... f℥ss.
†Ext. Dios. Fl. Comp. . f℥iv.
Ol. Menth. Vir. . . gtt. viij
Pul. Acaciæ Opt. . . ℥ss.
Aquæ Font. . . . f℥v.

M. Ft. Emulsio. Sig. Tablespoonful three times daily.

In comparing the two recipes, three points are worthy of notice: First, the use of mentha virida to couch the taste and odor of the copaiba, as being much better fitted for this purpose than the cinnamon; secondly, the use of ol. menth virida, in place of aq. menth vir., saving the unnecessary trouble of preparing the latter for the purpose; thirdly, the use of fluid ext. of buchu, in place of the tr. cubebs and syrup uva ursi. The buchu contains a notable quantity of sp. nitre, oil cubebs and oil juniper, and is altogether a more eligible preparation for this use.

In typhoid fever, and indeed all febrile cases where I have a dry, parched tongue to contend with, I use the following formula:

℞. Ol. Terebinth Recini, . . . f℥ij.
Sodæ Bi Carb. . . . . ℥j.
Pul. Acaciæ Opt. . . . .
" Sacch. Alb. . . . . *aa* ℥ss.
Sp. Lavendul. Comp. . . . f℥ss.
Aquæ Camph. . . . . f℥iv.
" Menth. Pip. . . . f℥iij.

M. Ft. Emulsio. Sig. Tablespoonful every two hours.

To this, tinct. opii. or tinct. verat. viride may be added, if indicated.

In digesting a formula the following suggestions will be found useful:

1st. The quantity of the active ingredient must, of course, be governed by the case. For one pint of emulsion, two to four ounces of castor oil—one half to one ounce of oil turpentine, and one to two ounces of copaiba, will usually be found desirable limits.

2nd. The quantity of gum used may be one ounce for four of castor oil, two of copaiba, and one of oil turpentine—unless it should be desirable, as in the case of copaiba, to render the

† Each pint represents, of Buchu 2½ ounces; Sp. Nit. Ether 2½ ounces; Oil Cubebs and Oil Juniper, of each, 21 drops.

preparation more mucilaginous. When sugar is used, the gum may be a little curtailed, if desired.

3rd. Syrups may be added freely, if indicated; but with tinctures and spirits it is advisable that the quantity do not exceed an ounce in the pint.

4th. No insoluble powders should be added to an emulsion; nor should soluble salts be used in large quantity.

The rules for the preparation of emulsions may be briefly summed up in the order in which the materials are to be used.

1st. All dry materials.
2nd. Watery menstruum to a crackling mucilage.
3rd. The oils, until the mucilage thickens.
4th. Watery menstruum to attenuate.
5th. Remainder of the oils.
6th. " " watery menstruum.
7th. Simple or fluid extracts, if any.
8th. Tinctures, or spirits.

Clinical Lecture on Dyspepsia. Delivered at the Hotel Dieu, by M. TROUSSEAU.

Of the patients at present in the wards of our service, you may every day see some who complain of disordered digestion. You have seen me give trial to various therapeutic means, and perhaps an accusation of empiricism has planted its germ in your minds; but do not deceive yourselves. I have, it is true, been groping my way; but if to some I have prescribed bi carbonate of soda, carbonate of magnesia, carbonate of lime, and seltzer water; to others cinchona wine, infusion of quassia, or of nux vomica; and to others again, opium or hydrochloric acid, it is because I would ascertain in what cases one or other of these medicines is more particularly indicated, and more especially useful. This premised, let me now enter into some details, for dyspepsia is a question on which it will be worth while to bestow some pains.

There are circumstances in which the physician, furnished with therapeutic agents, may bring his patients into particular conditions of adjustment, and impress, for instance, on the stomach a co-adaptation necessary to the regularity of its actions. The organism readily accommodates itself to a new impression. Man certainly was not born under the 50th degree of latitude;

his body which is protected neither by hair nor by feathers, unlike the bodies of other animals, shows clearly that it was placed at first by its Creator under a sky so mild as to render unnecessary that clothing which, in our climate, is indispensable to the preservation of life. When the earth became too narrow for him, man directed his steps towards other regions, and thanks to the wonderful aptitude he possesses, after turning his back on equatorial countries, he now lives under the pole. As with these climatic variations, so it has been with his food; from a regimen the most elementary, consisting with the Hindoos of scanty rations of rice, milk, and water, man has at last arrived at the copious table of the nations of the north. Now, what we have said of individuals is just as applicable to the organs.

What is seen occurring in the animal on which there has been practised stomachic fistula? It is only necessary, you know, to introduce into the stomach a glass tube in order to excite the mucous membrane of that bag, and produce an abundant flow of gastric juice. Under the influence of such irritation—of this impression, which the nerves transmit to the ganglionic nervous centres—there is produced an extra physiological secretion of a perfectly normal fluid. Carry the excitement to a higher degree, produce inflammation, and there is no longer any flow of gastric juice: the fistula now gives exit only to mucus. But such perturbations manifest themselves independently of mechanical irritation. Let a man have fever, and let the fibrile state be accompanied with a certain modification of the innervation, and you have suspension of the gastric secretion. M. Cl. Bernard has repeated the experiment a thousand times, by exciting, in his way, fever in animals. Let the stomach be no longer in concert with the cerebral nerves and brain, let the pneumogastric nerve be divided, and the same instant the glands of Lieberkuhn become powerless and inert. If, on the other hand, you touch the ganglia of the trisplanchnic system, that furnish nervous filaments to the stomach, a phenomenon of another order arises: the gastric secretion becomes more abundant. The results, therefore, are thus essentially different as the disturbance produced in the nervous system has its seat in the encephalorachidian system, or in the ganglionic system.

We see every day exemplified in man the influence which moral emotions have, if considerable, after a repast; indigestion supervenes just as it would do had the pneumogastric nerve been divided. Long continued mental affections may greatly change the functions of the stomach; hence dyspepsia is frequently occasioned by sadness. Keep these etiological details in remembrance: they may be singularly useful to you in the treatment of an affection sometimes so obstinate, and which will form the subject of several of our conferences.

The stomach secretion is modified also by local pain and neuralgia. As neuralgia of the eye augments, ophthalmic congestion increases the temperature of the organ, and causes an overflow of tears, so neuralgia of the stomach brings with it analogous effects, and exaggerates the acid secretions to such a degree that they occur not only during digestion, but also when digestion is at an end.

Dyspepsia is observed in most persons who experience difficulty in evacuating the bowels. Is constipation a cause or an effect of dyspepsia? This question to me does not seem of easy determination; for you may just as readily suppose an individual may become constipated because his food is too sparing, as that he is constipated because he is dyspeptic.

When you irritate the lower extremity of the large intestine you bring on a diarrhœa that has its source in the ileum. The anal impression thus communicates itself to the small intestine. A very evident proof of the sympathy which connects the rectum with the other parts of the intestinal tube may be seen in fact that an enema administered after a meal gives rise to indigestion. A suppository, which is never introduced beyond four or five centimetres, very often produces results identical with those caused by the enema. This at least is sufficient to provoke alvine evacuation, at first of the form of the large intestine, then demi-liquid, and containing matters in part from the cœcum or last portions of the small gut. There is then a participation of action, a synergia, by which the whole muscular apparatus of the alimentary canal is preserved in harmony with the large intestine. These considerations conduct you to an explanation of the fact that constipation may cause dyspepsia; the muscular apparatus of the rectum, when this gut is indolent, contracts feebly, the movements of the rest of the tube are weakened, and digestion becomes more difficult. It is the reverse of what takes place in diarrhœa; so much is this the course of things, that with some patients it is only necessary to procure regular evacuations, whether by enemeta or ascending douches, so as to awaken harmonious intestinal action, in order to cure the dyspepsia.

There is a multitude of circumstances in which *colic* pains are taken for *stomachic*. The transverse colon lies, in fact, in the epigastric region, and is found in contiguous relation with the stomach. To that organ the patient invariably refers the pains he feels in this situation—an error into which the physician too, it must be remarked, often falls. Of pains in the hypochondria the same thing may be said; whether they affect the ascending or the descending colon, on account of their proximity to the liver and spleen, they are confounded with hepatic and splenic symptoms.

In constipated individuals, accumulation of fecal matters occurs in the transverse colon, giving rise to a feeling in that part, of fullness and distension, which the patient never fails to refer to the stomach, though innocent of the evil. It will not be long ere you are convinced, if you interrogate carefully, that the pains complained of are not coincident with the first digestion, but rather with the time when it is all but accomplished. When you pursue your examination actively, you discover that such individuals are liable to obstinate constipation, followed often by diarrhœa, with a more or less abundant excretion of mucus, to be recognized by small whitish bands, sometimes mistaken for fragments of tape-worm. Such persons, in the end, have attacks of colitis, and of intestinal neuralgia, and are yet supposed to suffer from affections of the stomach—dyspepsia—but, in its more general sense, dyspepsia in such has no existence. Nevertheless, the attacks of colitis may give rise consecutively to that affection.

Morbid states of the liver occasion painful dyspepsia. The hepatic gland has with the stomach a relation so intimate, and the physiological part it plays is of so great importance to digestion, that it is easy to see how disease of the liver may influence the gastric apparatus, and disturb the course of its action. Hepatic pains, on the other hand, are sometimes mistaken for gastralgic phenomena; but the diagnosis is not difficult. The Patient refers all his sufferings to the region of the stomach, but medical investigations show that they extend to the entire right hypochondrium.

The uterus exerts on the stomach an influence not less remarkable; and you know what perturbations are often excited in the stomach by pregnancy, an ordinary symptom of which is vomiting, in some cases quite incorrigible. If you admit the action of the uterus, physiologically modified, on the alimentary canal, you must also admit that the organ of gestation may act in the same manner when it is the subject of pathological lesions; hence the dyspepsias that arise in the course of leucorrhœa and the leading diseases of the generative system. The same, moreover, may be said of diseases of the kidneys, and of other organs.

I thought it would be interesting to speak to you of those dyspeptic states that depend upon distinct functional disorders, and organic lesions. These dyspeptic difficulties always recur with increased or diminished activity of the movements and secretions of the stomach; and it is essential to establish the differential characters that distinguish symptomatic or sympathetic affections from such as are idiopathic. For the latter, address yourselves to the stomach; for the former, you will be obliged to have recourse, not only to the distant cause, but also to the momentary

morbid phenomena, and the organic lesions. Unless you do this, you will find therapeutics impossible.

At the beginning of the present century gastritis came to overturn all our received notions in pathology. The celebrated chief of physiological medicine, exaggerating the facts he had observed, and in his march retrograding back to Van Helmont, whose archœus sat enthroned in the centre of the epigastrium, pretended to establish an etiological relation between the mucous membrane of the stomach and diseases the most dissimilar and discrepant, and would have inflammation of that tunic to be the source of almost all the phlegmasiæ. You have no doubt heard of the scientific combats that were carried on at that time, and the struggles which that doctrine had to sustain. Broussais, doubtless, went too far; but it must be said, also, that physicians of the present day allow themselves to be led away by a contrary exaggeration when they deny to the mucous membrane of the stomach a capability of becoming inflamed. Why, then, do they admit that inflammation may attack the mucous linings of the nostrils, pharynx, trachea, bronchi, uterus, vagina, and even that of the intestines? Why, because Broussais abused the subject of gastritis. Would they have the internal coat of the stomach alone exempt? This is just, in fact, what we always do; from one evil we fall into a greater.

In vitium ducit culpæ fuga si caret arte.

Gastritis, then, has an existence, and there are satisfactory reasons why it should. As the chronic states is that in which it is most frequently seen, so also is it sometimes masked; but still it is there, and excites serious disturbance in the process of digestion. Under the influence of this inflammation, the movements of the muscular fibres of the stomach become irregular, and the secretions no longer take place, but in an abnormal manner. Hence you see dyspepsia accompanied by inappetency, and the tongue covered with a salivarial coating; the patient finds his food taste bitter, nausea occurs after meals, and so do inodorous eructations, retchings, and vomiting. Commence your inquiries into the etiology of this form of dyspepsia, and it will not be long ere you discover that the origin of the disease, its symptoms, and physical signs, are all referable to some permanent irritation; to chronic grastritis. There is a variety of dyspepsia, in which bulimia takes the place of inappetency. The patient experiences in his stomach a constant feeling of emptiness. Scarcely has he finished eating ere appetite returns with imperious craving, compelling attention to its factitious wants; eructation, flatulence, and constipation are, in such cases, exceptional phenomena; but diarrhœa is frequent. The reason of this you will soon comprehend. In order that

digestion take place physiologically, each of its phases must be accomplished in a given time; but should the stomach contract with too much energy, the alimentary mass is protruded with undue celerity into the duodenum, and before it has acquired a state of elaboration sufficient for fitting it for the second digestion. The intestine thus brought into contact with a foreign body—if I may use the expression—hastens its expulsion, exciting an abnormal state of activity, both in its secretion and contractions. Hence the diarrhœa, and often, also, dysentery.

Let us go on to another form of dyspepsia. You will often be consulted by individuals whose stomach, after meals, become distended with air to such an extent that the patient has to undo his clothes. You are told that this phenomenon is due to the rapid fermentation of amylaceous food, or else to an abundant production of carbonic acid, the result of fermentation going on in the stomachic bag, analogous to that of wine in a vat. But such is not the way the thing occurs. As Graves has well remarked, if you substitute meat for amylaceous food, the patient taking animal food almost exclusively, gas nevertheless appears, and with the same importunity. Now, would you say in this case, that the gas is a product of fermentation? There is here a peculiar secretion that has nothing to do with digestion of the food. In hysterical women, tympanitis sometimes shows itself in less than ten minutes; the abdomen may be felt enlarging under the hand. Assuredly fermentation will not suffice for the explanation of such a phenomenon. Under the influence of nervous disorders there occurs an exaggerated gaseous secretion, which recalls those other secretions, the lachrymal, salivary, renal, &c., the quantity of which is often extraordinary.

These facts are not without their importance. In fact, if you reason as the chemists do, and consider the stomach a sort of crucible, the excess of carbonic acid which comes from the pretended fermentation you must combat by every sort of means that chemistry affords. Well, I can tell you beforehand, that, if you thus proceed, you will accomplish nothing to the purpose. But, on the other hand, if you pursue the path of the true practitioner, if you prescribe baths, effusions, a few drops of ether, or any other means in which experience has taught you to confide, you will succeed in mastering the symptoms. But on this we shall say more when we come to the treatment.

In certain cases the acids of the stomach are in quantity enormous, and the patient has scarcely finished a meal before he is assailed by eructations in great number, and so acid as to set the teeth on edge. There was lately in the *Salle St. Bernard*, No. 27, a young woman, a prey to sufferings of this kind. When taken with vomiting—it was frequent—and using a copper basin, as they do in all the hospitals, lactate of copper was im-

mediately produced, easily recognized by its green color. The chemists have not been behind hand in endeavoring to find out the cause of this acidity. It is a transformation, say they, of glyclose into alcohol, and of alcohol into vinegar. Unfortunately, the explanation falls to the ground before the fact that the production of acid is often more abundant when animal food is exclusively used. The contrary, no doubt, takes place in many cases, but can this weaken in any measure, the former results? No; the acids of the stomach are not produced by a chymic operation, but are due to a particular secretion. Graves said in 1823, and Berzelius repeated in 1830, that this acidity consists principally of lactic acid, which may be formed in no inconsiderable quantities under the influence of nervous action and excitation peculiar to the mucous membrane of the stomach.

I have now passed in review with you various forms of dyspepsia. But can it be said that in practice you will be able, with as much precision, to seize on all the various shades of the disease? That is often impossible. In order to convey my thoughts I am obliged to reassemble facts, give form to statements, and describe genera and sub-genera, but I express nothing that is absolute. Classification is in natural history a very simple thing, and to take only an example from botany, vegetable species are distinguished by well marked differential characters. But the case is by no means the same in nosology. Diseases in general, and the dyspepsias in particular, are far from being always identical with themselves. In their manifestations there is confusion; they are crossed one with another, and rest on data too shifting and unstable for one to attempt here to lay the foundations of a sure classification. Take warning then; and when, in the treatment of some obstinate case, your minds are left to their own resources, be not too ready to accuse therapeutics should success not promptly follow your efforts; for so you might soon be brought to deny medicine altogether, the worst evil that could befall you in the practice of your art. If on the contrary, you bear in mind this form of dyspepsia may usurp the attributes of another, and that both may occur simultaneously, then you will not delay having recourse to the mixed treatment I shall presently point out to you. Discouragement will no longer then have any hold on you.

Dyspepsia causes its influence to be felt throughout the whole system: a fact to which M. Bean was the first to direct the attention of practitioners. He has shown that there are very generally in dyspepsia anæsthetic conditions analogous to those seen in many cases of hysteria, insensibility taking possession of an arm, or a hand, or the face. Of our experiments in confirmation of this you have yourselves been witnesses; and you have seen me pinch, prick, and make holes with a needle in certain parts

of the skin, without the patient being at all aware of what had been done, while the other parts of the body were perfectly sensible. Nor do the moral and intellectual faculties escape its influence. The difficulties of the stomach, moreover, become a clog upon labor, interfere with the exercise of thought, and prepare the way for hypochrondriasis. The various influences which dyspepsia exerts on the general health are attended with the most serious consequences. Thus, disorders of digestion are a cause of imperfect nutrition; and the almost perfect inanition, which results from this state, changes the composition of the blood, and plunges the patient into a state of physiological wretchedness.—[*Medical Circular, American Med. Monthly.*

Clinical Lecture on Pulmonary Hemorrhage. By James Alderson, M.D., Senior Physician to St. Mary's Hospital.

Gentlemen—There are at this time a number of cases in the wards, which form a group, displaying all the same formidable symptom of hemorrhage from the lungs. Separately examined, these cases will also afford so many subjects for tracing the various causes whence that formidable symptom may arise. I shall preface what I have to say by a few general remarks on medical study which I conceive to bear especially on the interesting subject before us.

There are two methods by which we may study disease: one to consider the pathological condition of the organ in fault, and having fully understood it, then to observe the various symptoms consequent on the pathological change; the other is to bestow your primary attention on the symptoms of the case, and afterwards to investigate the several morbid conditions which may give rise to them. The first is a safe course of study, in which, as diligent pupils, you can scarcely lose your way. The second is a course still more needed for perfect information, but many students fail to gather the full reward of their industry by becoming unduly absorbed in the contemplation of symptoms; thus, by neglecting to seek for the original causes, they will fail to learn that there may be many for the same phenonenon. The danger of falling into this error is increased by the mode of pursuing medical science continually coming more in vogue—viz., the subdivision of medical labour, leading to what are called specialities. It is obvious that the eye long exercised on given subjects may perceive those points more clearly than a less diligent direct organ, but it is a psychological fact, that the mind, too much absorbed in one limited field of investigation, becomes narrowed in perception, and incapable of wider trains of reasoning. Now, we know that natural science is linked together by primary laws,

some known, some yet to be discovered. It is plain, therefore, that comprehensive views of phenomena and their causes are needed in order to make any advance towards realizing truth. In practice, I would not deprecate undivided close attention to the nature and treatment of such organs as the eye and ear, because their special knowledge and special manipulation are required; but in the vast subject of internal disease, the habit of taking a wide view of all the distinctive features, and reasoning on them as a whole, cannot safely be surrendered to the narrower course of choosing some essential but limited train of symptoms for favourite contemplation. The progress of fashion is unfortunately dividing every organ, and even some particular derangement of the particular functions of every organ, into a separate subject for exclusive study. By this process, secondary symptoms are being continually exalted into primary diseases, tending in many cases, to the neglect of vital phenomena, and in all to the obscuration of much pathological truth. The practical result is, the adoption and laudation of specifics.

The second course of study which I have alluded to, and which has given rise to these remarks on specialities, is, however, that which strictly belongs to clinical teaching. We will therefore pursue it, endeavoring to avoid the error of classing diseases too much by symptoms, and too little by the causes.

The popular view of hemorrhage from the lungs refers it to the rupture of a bloodvessel; it is also the common belief that such hemorrhage is the beginning of consumption. Now, it is not always the breaking of a bloodvessel; and whether it is or is not so, consumption does not always follow. It is not denied, as we shall see hereafter, that hemorrage may take place from a ruptured or ulcerated vessel in the lungs, but this form of hæmoptysis is the exception to the general rule.

Hemorrhage from the lungs most frequently occurs by means of exudation through membranes or the coats of vessels. Exudation of blood may also result from a constitutional derangement, of which I shall presently describe an instance in one of the cases before us. They are also exceptional cases, the cause of which I shall presently refer to; but by far the greater number are to be referred to the existence of tuberculous deposit. It is not difficult to understand how the presence of tuberculous matter will cause blood to be exuded from the vessels. As all the blood of the body has to pass through the lungs, for the purpose of purification before being again transmitted to the system, it is plain that the presence of any foreign body in the lungs must offer obstruction to the free transmission of the blood, and cause delay and congestion. The greater the quantity of blood present in the lungs, the greater must be the necessity of the presence of air to purify it; and the forced accumulation of both occasions the

blood to exude from the surface of the membranes and vessels. Hence we account, not only for the symptom before us, but also for the dyspnœa, or difficulty of breathing. It must also be borne in mind that the structures and vessels are altogether impaired in tubercular constitutions, and therefore admit more easily of transudation.

In the latter stages of pulmonary consumption, the hemorrhage results not only from exudation, but from ulceration of smaller vessels in the immediate neighborhood of softened tubercles. In the progress of the disease this hemorrhage is small in quantity, though frequently repeated; but in advance cases of a particular class it is profuse and generally fatal, having resulted from the ulceration of a large vessel. This lesion is still essentially different from what is termed the breaking of a bloodvessel, as, for instance, in the brain or its membranes, whether as in apoplexy, or as the result of an injury.

If we now briefly review the general character of spitting of blood, we shall find that it occurs under two forms—the one severe, the other slight. In the first, several ounces of blood will be brought up at once—six or seven or more ounces at a time. In the other, only specks or streaks may be seen in the expectoration; both forms being referable to exudation from obstruction; and although it is only the larger quantity which terrifies the patient, both forms equally reveal to the physician the existence of a diseased condition of the lungs,

When profuse, the blood is usually of a florid colour, frothy from the admixture of air, and clots of dark blood will be occasionally spit up, or sometimes apparently vomited, when a sort of convulsive action of the diaphragm accompanies the expectoration of the blood. A difficulty of breathing almost universally attends it, as well as pain, which is usually referred to the sternum, though sometimes to the side affected.

You will now follow me through the case of J. F——, in Albert ward. He was received into the hospital having a severe attack of spitting of blood, which had come on suddenly to such an extent, that in a few hours he had expectorated six or eight ounces. He was not in the slightest degree emaciated, the arms and chest being well covered with flesh; though he admitted that he had some slight difficulty of breathing, and a little cough, there had not been sufficient distress before the hemorrhage began to warn him that there was anything wrong within the chest.

The patient is twenty-one years of age, and by trade a bootmaker; and in the course of his employment he had to use strong exertion, and whilst thus at work the spitting of blood came on. His pulse was 100 in a minute, but he had no fever; his bowels were confined. On examining the chest we perceived that he did not expand the right side as well as the left; on percussion,

at about a couple of inches below the clavicle, over the upper lobe of the lung anteriorly, there was a decided dullness, very perceptible when compared with the sound on percussion on the left side; some degree of dullness was also found posteriorly by percussion. By the stethoscope the respiratory murmur over the left side was clear and good; over the right side, a crepitation or crackling over the upper lobe, together with here and there increased resonance of the voice. For treatment, he was immediately ordered a dose of calomel and colocynth, followed by sulphate of magnesia in infusion of senna; he was also ordered acetate of lead with morphia, and diluted with acetic acid at intervals; for drink, lemonade; enjoined perfect rest; simple diet, to be taken cold.

The use of the dilute acetic acid is to keep the lead in the state of superacetate. The aperient treatment had for its object to divert the flow of blood to the bowels. When constipation exists, the active treatment of this symptom is of great value, and is often found of itself sufficient to stay hemorrhage.

I have the following notes of his state on the third day:—

The pulse still 100 in a minute; the cough not troublesome, but still existing. Great relief had followed the action of the aperient. His expectoration clear and frothy, but free from blood. On examining the chest by the stethoscope, the air was found to enter freely and rapidly on the left side, but a hesitation or delay occurred to the passage of air into the cells on the right side, conveying an idea of some obstruction to its admission, as if resisted by some foreign body, the expiratory murmur being longer than the inspiratory. The pulse soon after this fell to 80, but in a day or two again rose to 100, when the expectoration again showed a few specks and streaks of blood. He complained of pain and weight over the upper part of the right lung where the breathing was a little tubular, indicating again some consolidation from tubercular deposit. A few leeches and a cupping glass were applied; the aperient was repeated, and for the lead were substituted nitrate of potash and digitalis, with a view to act on the kidneys, and to control the heart's action; and the opiate was discontinued to avoid confining the bowels.

This appears to be a case of tubercular deposit in its earliest stage, the deposit being confined to the right lung, and being at present so limited in extent as not to have set up alarm in the constitution, the processes of nutrition not having as yet been interferred with. This man will be liable to returns of hæmoptysis, the severity of which would probably be heightened by any violent or unusual exertion. He will, sooner or later be the subject of pulmonary consumption. His intervals of troubled health will be regulated by the favorable or unfavorable circumstances which may attend his life, and in a great measure on the care and treatment of symptoms as they arise.

A certain degree of relief for a time from his alarming symptoms may result from the equilibrium of the circulation through the lungs being, in a measure, restored. It is possible that the tubercular deposit has taken place rapidly, presenting a sudden obstacle to the transmission of blood through the lungs. A large withdrawal of the functional powers of a vital organ may be compatible with continued life, when the change takes place gradually, and the system has time and power to accommodate itself; but sudden interferences of a much slighter character will destroy life before the system has had time to accommodate itself to the change.

I shall now direct your attention to a case in which hæmoptysis occurred in a later stage of pulmonary consumption—that of S. B——, in Carlisle ward. This young woman, aged nineteen, has been received into the house more than once during the last year, with symptoms of phthisis so obviously marked that "he may run that readeth." On receiving partial relief she has been discharged. During her former admissions there were some appearance of spitting of blood, and this symptom has now become more grave and constant. The blood she spits is still only small in quantity at a time. It appears in specks and streaks, mixed with much purulent and offensive expectoration. The blood is florid. Her cough is most distressing, loud, and frequent, and she suffers from the constant effort to vomit during the paroxysms. The case last considered was one of obstructed circulation through the lungs, and consequent exudation of blood through the membranes; in this case the blood is not only obstructed by tubercular deposit, but also escapes from the vessels in the immediate neighborhood of the tubercles, the vessels being perforated by means of the ulceration which has taken place in the process of the softening of the tubercles and the breaking up of the lung. The chest in this young woman is nearly immovable, and to this circumstance may, perhaps, be attributed the slow progress of the disease. Adhesion of the lungs to the chest controls the movement of the lungs during respiration, keeps the organ quieter, and thus avoids irritation of diseased surfaces. The vomiting is a usual and marked symptom of pulmonary consumption. This may be referred partly to the expectoration dwelling about the fauces, but arises chiefly through the medium of the association, by nervous influence, of the throat, lungs, and stomach, which is effected by the pneumogastric nerve, and is a reflex act.

In the treatment of this form of hemorrhage, palliatives are the only resource. Opiates to allay the irritation, and occasional local means to repress the attacks of pleuritic pain; a single leech to relieve the action set up at points where tubercular matter reaches the pulmonary pleura, exciting and giving rise to adhesion; or a liniment of chloroform and opium may also be used to

subdue the pain till adhesion takes place. To restrain the hemorrhage, and to prevent as much as possible the offensive character of the expectoration, alum is excellent. Creasote is also found useful: it seems especially indicated in these cases. It is not only a deodorizing agent, but stays sickness, and seems generally to paliate symptoms. If one searches for a reason for this palliation, I should give the following: The lung having lost its power from want of space to throw off the carbon of the blood, the oxygen present during respiration remains free to damage the structure; creasote, therefore, being chiefly carbon, is offered to the oxygen, neutralizing the bad effects of the latter. Creasote is, in another form, the old tar water of the last century, which had a fashion without an explanation. Many remedies are taken up from good experience, but laid down because they are not explained. I only deprecate the present fashionable quackeries, as cod-liver oil, &c., because they can be explained, and the reason has been found insufficient.—[*Lancet.*

Clinical Lecture on the Diagnosis of Idiopathic from Rheumatic Arthritis, and the Pathology of these Diseases. By E. A. Lloyd, Esq., F. R. C. S., Surgeon to St. Bartholomew's Hospital.

Gentlemen—The subject on which I wish to treat to-day in a "Clinical Lecture," so called, is one on which a good deal of obscurity seems to hang, yet one on which you may be asked to give an opinion very often.

The great object of clinical lectures I believe to be to teach practical therapeutics and diagnosis; some say to teach general surgical principles; but these you will receive in your lectures on "Surgery," and the less of sameness and repetition we have in a school like this the better. The subject of treatment—that is the corner-stone of all the edifice. I never knew a surgeon to get on properly in after-life who was not *au fait* as to the little details of therapeutics and good general treatment. The great secret of success is to put yourself in the patient's place, and to treat all cases well.

How often do I find old pupils of St. Bartholomew's regretting that they neglected therapeutics? Students are, by the present Examination Boards, encouraged to go to "grinders;" encouraged, indirectly, to make themselves "up" on fixed questions of delicate anatomy or histology—of no conceivable importance. But therapeutics! how to order the commonest mixture or lotion, or what lotion or mixture is valuable in a specific surgical case, is thought *infra dig.* It is when you have "passed" the College you will find this. "Clinical" lectures are a step in the right direction; but, then, they are only another name for lectures on

therapeutics and diagnosis. As such also you should not neglect them if you wish to get on in practice.

The case I propose to speak of to-day is one of what was called "Rheumatic Arthritis," but where we have now reason to see the diagnosis was confused and uncertain for a long time—at least, out of hospital. The poor man told us the disease commenced with a dull, heavy pain of the joint, which led his surgeon in the country to pronounce it "rheumatic;" a dull, heavy pain that prevented him going about his work; he could tell us very little else about it. About the end of August, you remember, I left town, and the patient was then under Dr. McWhinnie's care. The patient was sixty-eight years of age, and the disease had existed fifteen months prior to admission; it was called rheumatism. An abscess formed under the knee-joint, which was discharging pus profusely, the joint was swollen, and some sinuses were observed around it; on passing a probe, I found necrosis of the tibia—in fact, there was a hole in the tibia, with a piece of loose necrosed bone. It was, therefore, very clearly not rheumatic arthritis, but a case, probably, of idiopathic disease of the tibia. The patient's health was not suffering much, there was very little pain. When I again saw him, pus had got into the cavity of the joint, and very fœtid matter was let out, which is always an indication of loose or diseased bones. How the case was mistaken for rheumatism before it came to us, I am not in a position to say.

Well, after this the knee-joint increased again in size, and now severe pain also came on, with signs of a new attack of inflammation. I was obliged to allow exit to more matter; the man then rallied, the fever diminished, but subsequently he had tedious suppuration again, and he sunk. I dwell on this case to-day, as you all had excellent opportunities of watching it from the time of its admission. We often learn a good deal also that is retained in the mind from errors of diagnosis rather than from plain sailing.

I now show you the diseased parts—and this is what I call practical diagnosis of cases. The man died a few days ago, and we have the knee-joint here well preserved, and full of instruction. There is a cavity posteriorly communicating with that of the knee-joint; the cancellous structure of the head of the lower bone is engaged, and even in the medullary cavity we see here fragments of diseased bone; there is a large cavity, in fact, in the head of the tibia; the articulating surfaces are destroyed, but the condyles of the femur have escaped. Now this is a state, I need not tell you, that we do not find in rheumatism; it explains the great tediousness and intractableness of the case. Some might say, why not try resections, &c.? But mind you, the man was sixty-eight years of age, and worn down by suffering.

Now, the diagnosis of rheumatic diseases of joints is sometimes very difficult. We have had some cases sent into our surgical

wards from medical wards over the way. The fever in these cases was so great that they misled the physicians; but they were cases of acute synovitis of the hip-joint, and immediate relief was obtained by opening the joint—Mr. Gay's method over a case of a woman. She went out of hospital improved, and entirely altered for the better after this operation. It is of course, a very formidable proceeding, and not to be undertaken too lightly; but in some cases the relief afforded is something wonderful

In a private case, not long ago, treated by one physician, and then by another, for articular rheumatism—for I do not know how long—I was sent for, and I found it common synovitis with purulent deposit in the joint. This case took two years, but ultimately got well with stiff joint, better perhaps than so-called resections or amputations, and death. I saw at once it had nothing, in fact, to do with rheumatism; it puzzled the two physicians exceedingly. If treated properly at first, all such cases are rendered more amenable to professional skill; this is what I call proper diagnosis, for it is obvious to every one if we form a wrong diagnosis, and use wrong therapeutical agents early, we only confuse the case; and many of these cases, as they reach us in hospital, are sadly confused. In a case at present in "Colston" ward, sent to me also as rheumatism, the disease was thickened periosteum over the os calcis. I divided this, and the patient has gone on well. Now the treatment of the two diseases is not at all the same; so you will do well to take a note of the differences.

The question you are all this while asking yourselves is, how is rheumatic to be diagnosed from common or idiopathic disease of articulations? In rheumatism it is very rare to find pain in *one* single joint; there is also some history, more or less obscure, of previous rheumatism of various joints, pericarditis, &c., or of some affection probably yielding to rheumatism medicines. Again—rheumatism is very seldom, if ever, complicated with suppuration in or about joints. Rheumatism is also a very common disease.

Now, the disease we are speaking of is a very rare and very tedious disease. In diseased bone there is dull, heavy, protracted pain, without effusion at first, but soon we get effusion of pus. Now, I never saw suppuration in rheumatic disease; on the contrary, the slightest amount of idiopathic synovitis leads very often to suppuration. Again, in pyæmia you may find rapid suppuration into joints and in internal parts, but you can scarcely call them abscesses. In acute idiopathic inflammation, the cases are not so tedious in their previous history, as this form of disease goes through its stages more quickly than chronic rheumatism. If you find "rigors" have set in, you may be almost sure there is suppuration going on, and that it is not rheumatism you have to deal with. Anchylosis is very rare, or entirely unknown in rheuma-

tism; joints get stiff, but there is no true bony anchylosis. In chronic rheumatism of joints, too, the fibrous and synovial tissues are thickened, nay, the cartilage may be removed, but the ends of the bones do not anchylose—they become polished. How different all this is from strumous disease of joints with anchylosis, so easily brought about, I need not to-day stop to describe.

I believe that opening a diseased knee-joint with pus in it, is not at all the same thing, or so formidable as opening a healthy knee-joint. I have now done it very often. I believe it a good operation. A great deal consists in a good diagnosis of the case.

There are other forms of disease that may be confounded with this "Rheumatic Arthritis;" I mean malignant disease of joints. Here we have the well-known cachexia, attended with quick pulse and pains at night, as well as other diagnostic points to lead us—which time will not permit me to enter into at any length. Nor must we forget syphilitic and gonorrhœal diseases of joints; in the former, mercury sometimes does good, but I think it does harm in other forms of joint disease. You will merely make the mistake of confounding these diseases with idiopathic forms of inflammation; but you will do well to take care of "splitting on the rock" in your way—rheumatic as compared with idiopathic disease of bones and joints.—[*Medical Circular.*

Case of Hæmaturia, Successful Treatment with Sulphate of Quinia. Translated from the April Number of the Revista Medica de la Isla de Cuba. By J. F. Grall, M.D., Demonstrator of Anatomy, New Orleans School of Medicine.

Being, in the month of September last, in the district of San Anton de la Negada, a hurried call, to render professional assistance to the wife of an old acquaintance, occasioned the following observation, very important in a practical point of view, particularly to physicians practising in a swampy locality; and since it is a phenomenon only mentioned in a vague way by authors, even the most modern, when they speak of local affections sustained by a miasmatic, or better said, malaric cause, I shall try to give a clear idea of the case.

The patient was a woman about thirty years of age, of bilious temperament, and already mother of five children. She complained of severe pains in the hypogastric, lumbar and inguinal regions, and in the posterior part of the thighs. These pains were not continuous, but observed, marked intermissions, which circumstance, united with a cessation of her menstruation for two months, made me suspect a commencing abortion; but I was not able to verify my suspicion by a vaginal examination, on account of the repugnance, sometimes invincible, which most women

evince against that kind of exploration. This hypothesis established, my remedial means were naturally directed towards an arrestation of the abortion. I recommended, therefore, absolute rest in the horizontal position, evacuated the rectum by an emollient injection, followed by a demilavement with ten drops of laudanum, and give her a "portion calmente," consisting of aqua laurocerasi, aqua florum aurant, and infusum tiliæ. In consequence of this treatment the pains were somewhat relieved; sometimes they returned with the same intensity as before, to disappear after the administration of the medicine. She remained in this state for about four days, when, the urine which up to this time had been clear and normal, began to have a turbid aspect, and I noticed floating in it particles of mucus, and a few drops of blood, which latter gradually increased, so that three days afterwards she discharged almost as much blood as urine. Under such alarming symptoms, I considered a rigorous examination of the bladder of absolute necessity, to which the patient readily submitted, comprehending the critical state in which she found herself. A catheter introduced found no obstacle, either in the urethra, neck of the bladder, nor the bladder itself. Although I endeavored to arrest this hemorrhage by employing the different local and general remedies recommended by the majority of authors, I produced only a palliative effect; from time to time the urine presented a sanguinolent aspect, accompanied by the inseparable sequitus of pains above mentioned.

Twenty days had already passed, and my patient remained in the same state, with more or less prolonged interruptions, when I decided to call in consultation Ldo. D. José Manuel Nunez, who has already practiced twelve years, with excellent success, in that neighborhood. I related to him the past and what I had done, to which he answered, that in his long practice, which brought him in contact particularly with diseases of an intermittent character, and their larved (masked) types, he had observed four cases altogether similar to the one I presented to him; that, full of doubts at the beginning of his career, he could not fail to recognize the miasmatic element, after he had observed, that all the patients, who presented themselves with this affliction, lived in swampy localities, and that consequently he had recourse to quinine, always with very satisfactory results.

I, in consequence, determined to administer to my patient the sulphate of quinia, not with full confidence, although I relied on the good faith, and the great knowledge of the medical topography of the county of Guamutas, which my colleague possesses; and not only for these reasons was I determined to give the quinine a trial, but also, because I considered the administration of some tonic necessary, to reanimate the failing strength of a patient who had suffered from a disease of a hæmorrhagic nature during twenty

days. I confess openly, that I did not hope for the result I obtained with a scruple of sulphate of quinia, associated with the extract ol absynthium, divided in twelve pills, which were taken in twenty-four hours. I took good care not to divulge to my patient the conposition of these pills, because, in spite of my short practice, particularly in this island, I am not ignorant of the repugnance, the horror, they have in the country of this salt of the Peruvian bark, because to it they attribute generally the effect or consecutive lesions of swamp fevers, which terror sometimes goes to such an extent, that they refuse to take it even in the most urgent cases, as they consider it as a fire (un fuego)—to use their own expression. Unhappy error, that has conducted more than one victim to the grave!

Two days after the administration of the quinine, I saw my patient, and what was my surprise, when she told me that the sanguineous fluid had ceased from the moment she began to take the pills; and it did not return afterwards, at least not until the month of December, at which period I left that neighborhood.

When we consider on the one hand, the habitation of our patient, which was situated close to a swamp, fed by the overflow of a ditch, which does not empty itself where it ought to, in consequence of the embânkment of the railroad of Jucaro, causing continuous miasmatic emanations to such a degree that few persons inhabit that part of San Anton de la Negada, without suffering from some form of intermittent fever; and, on the other hand, the immediate good result from the antiperiodic, *par excellence*, the quinine—if we consider these facts, there remains not the least doubt that the hæmorrhage, which might have carried our patient to the grave, was caused and sustained by the malaric or swampy miasmata, which she constantly respired.

We believe that our readers will find this observation really and truly interesting, because, far from being very common, I have not seen this occurrence mentioned by any author, nor even in the very modern work of Dr. Wanderlich, (*Handbuck der Pathologie und Therapie, Vierter Band ziveite Hœlfte. Stuttgart*, 1856.) which is perhaps, the most complete treatise on pathology now existing in the field of science. When treating of hæmorrhages caused by intermittent affections, he confines himself to the following words: "Hæmorrhages are very frequent in malaric diseases. In more than half the cases of recent intermittent fevers, more or less abundant, epistaxis presents itself, and is sometimes repeated. But it is when already a prolonged cachexia exists, that with more certainty these hæmorrhages and other sanguineous extravasations present themselves."—[*N. O. Med. News.*

Dr. Juan C. Oxamendi.

Remarks upon Rheumatism. By O. C. Gibbs, M. D.

In the Peninsular and Independent, for April, Dr. DuBois publishes an interesting and able Report upon Rheumatism, which we have read with pleasure. Its reading has suggested a few thoughts, which we wish to express, and that too in no spirit of criticism, influenced only by the consciousness that it is every man's duty, who is engaged in the noble work of mitigating pain and disease, to contribute his mite to enhance the efficiency of his art.

In regard to the difference to be noticed between rheumatic and ordinary inflammation, Dr. DuBois says:

"Throughout all this febrile disturbance, there is no coma, no marked trouble of the stomach or of the bowels, no *vomiting*, no diarrhœa," &c.; "which it is fortunate to remember in some masked cases of difficult diagnosis."

To our apprehension, the above quotation contains an error, to which we are the more anxious to call attention, as Dr. DuBois is not the first to have given it expression. Vomiting is not common in rheumatic inflammation, but we have certainly seen unmistakeable cases, in which vomiting was the most distressing symptom. We have seen vomiting commence almost simultaneously with the arthritic inflammation, before any remedies had been administered, and have seen this symptom persist, in spite of treatment for many days.

Rheumatism is a disease of such frequent occurrence, so distressing in its symptoms, so protracted in its course, and so often fatal in its consequences, that any practical remarks in regard to its treatment cannot be deemed ill-timed or out of place.

In regard to treatment in this disease, we have never bled, have never given emetics, or antimony as an antiphlogistic, and in no inconsiderable experience, have never had reason to regret this neglect. Purging with neutral salts is an important therapeutic measure, but, as an antiphlogistic in this peculiar form of inflammation, we know of no compound to be compared with calomel, opium, and colchicum; the first in rather small, the other two in full doses. These of course, are to be used conjointly with, or succeeded by, such other means as the peculiar circumstances of the case may demand. Contrary to the teachings of some of our highest authorities, we have no hesitation in saying that the earlier the calomel is used in this combination the sooner will the cure be effected, and the less will be the liability to heart complications. In our own practice, we are confident that endo- and pericardic complications have not averaged one in fifty.

Rheumatic inflammation occurs in such a diversity of constitutions, and of such varying grades of intensity, that no uniform plan of treatment can be adopted. We have certainly seen cases,

to the cure of which quinine and opium was better adapted, in our judgment, than any other known combination. In Rheumatism, as in all other diseases, for their successful treatment, a goodly share of common sense, and a thorough and appreciative knowledge of the principles of medicine are more indispensible to the practitioner than the best set formula that was ever devised.

There is one article of medicine that Dr. DuBois has not seen fit to mention, that in some forms of Rheumatism is certainly worthy of consideration. In chronic forms of this disease, or even in the acute forms when convalescence has commenced, the tincture of cimicifuga, combined with the iodide of potassium (the former in teaspoonful, the latter in from four to six grain doses) is certainly a remedy of great efficacy. The good effect of this combination will be materially enhanced by the conjoint action of quinine in the debilitated, and the veratrum viride in the plethoric. Dr. Davis, of Chicago, Dr. Johnson of New York, and others, have recommended the tincture of cimicifuga even in the early stages of Acute Rheumatism: we have but little acquaintance with the remedy as recommended by them, but, in circumstances as above, we speak from a reasonable amount of experience.

In that troublesome form of rheumatic disease, denominated Sciatica, we have succeeded in effecting a cure with strychnine, after the failure of almost every other known means.

For a fuller expression of our views of the pathology and treatment of inflammatory Rheumatism, we beg leave to refer the reader to the American Medical Monthly, for 1854, Vol. II., page 412.—[*Peninsular Med. Jour.*

On Urethral Intermittent Fever. By M. Chassaignac.

This is the name M. de Chassaignac attaches to the febrile attack which all surgeons have observed as a consequence of catheterism, and which, if it were desired to indicate the cause giving rise to it, might be termed cathartic fever. It is a curious point to determine, whether the contact of the instrument with the entire length of the urethra is necessary for the production of the paroxysmal attacks, or whether it is sufficient for one portion of the canal to have undergone such contact, and in that case, which portion. Judging from the facts known to him before the case which gave rise to these observations came under his notice, M. Chassaignac was disposed to believe that neither the membranous nor the prostatic portion of the urethra was in the portion in question. Thus he never met with an instance of such febrile paroxysm being produced after catheterism in the female, nor is he aware of any one who has ever met with one.

A natural inference would be that it is not observed in woman, because the paroxysm arises from the contact of the instrument with a portion of the urethra which does not exist in her. An opportunity offered itself for confirming this conjecture, by the counter-proof of the induction of the paroxysm by the exclusive catheterism of the portion of the uretha which is proper to man. This occurred in the case of a patient suffering from multiple urinary fistulæ. The catheter being passed from one of these to the meatus, and back again from the meatus to the fistula, no difficulty or pain occurring, an intense intermittent paroxysm was produced. The patient had had the catheter passed before, and had borne one fixed in the urethra without such effects having been produced. It was quite certain that on this occasion the instrument had not come in contact with either the membranous or prostatic portion of the urethra, or with the neck of the bladder; and until further information upon the subject, M. Chassaignac feels justified in localizing in the bulbous or anterior portion of the urethra the physiologico-pathological process which gives rise to the production of the paroxysm in these cases.—[*Moniteur des Hôpitaux. New Orleans Med. News.*

Case of a Mole, or False Conception retained in Utero. By SAMUEL B. CLARK, M.D., of Brothersville, Geo.

[As cases of false conception are very rare in this region of country, we select the following case from the *Nashville Journal of Medicine and Surgery.* The subject is an interesting one and should elicit more attention from the profession—as a more thorough inquisition into the nature of these abnormal bodies would in time, doubtless lead to a detection of their cause.—EDTS.]

I delivered Mrs. J. B., of a female child on the 18th of October, 1857, with nothing peculiar about the labor, except perhaps a little more difficulty in delivering the placenta than usual. Some ten days afterwards I was called to see her, and learned that the lochial discharge had become pale, as usually happens, but that without any appreciable cause she had a return of hemorrhage again, with very little pain. Gave ergot and other astringents, which nearly checked the hemorrhage, but in a few days she complained of heat low down in the abdomen. I then made an examination per vag., and found a substance engaged in the os uteri. Introducing the fingers still higher up, I found the attachment to the inside of the uterus so slight that I easily separated it and brought it away. On examination I found it

to be a mole or false conception, of a conical or pyriform shape, about three inches long and two in thickness. It was smaller at the neck, where it was attached to the uterus, and rather more consistent than a placenta, with no regular organization. The hemorrhage stopped, and she got well under the use of quinine, iron, etc.

How long do these substances remain in utero usually? This must have remained nine months or more, unless it was a case of superfœtation. According to my experience they usually remain from two to four months. It may not be amiss to remark that this lady had twins at her first confinement, and that all of her sisters who have had children have had twins, so far as I have been informed. In my limited library I cannot find a very full history of these substances. In the 8th volume and 467th page of the Nashville Journal of Medicine and Surgery, Dr. T. Lipscomb gives an account of two cases, and requests other physicians to make inquiries respecting them. His theory is that the continuance of lactation after conception has taken place, will blight the conception by abstracting the necessary stimuli from it to the mammary glands, and thereby produce a false conception. In the case of Mrs. B., I do not think she nursed her former infant until after conception took place, as it was eighteen months old when conception took place.

Treatment of Aphonia by Electricity.—A case of aphonia was observed at the Samaritan Hospital, under the care of Dr. Savage. A woman, aged 21, lost her voice a month ago; she thought it was brought on by her having caught a cold. The movements of the tongue were not in the least impaired. There were no signs of inflammation nor of ulceration of the larynx; very little cough, and some little pain in the larynx, as well as in the chest. No tubercular deposits in the lungs. She has always been regular. Purposely no medicine was given, but Dr. Savage asked Dr. Althaus to try what Faradization might do for her. Dr. Althaus applied the current of the first order of his apparatus of induction by means of solid metallic excitors covered with wet fingers of gloves, localizing the electric stimulus in the inferior laryngeal nerve, which animates all the muscles of the larynx concurring to the formation of the voice. The day after the first sitting, which only lasted two minutes, the speech seemed to be not materially improvd; but in the course of whispering, sometimes the normal sound of voice returned. After the second sitting of the same duration as above, the improvement was striking; the day after the third *séance* the patient spoke almost quite naturally, and the treatment was discontinued after another sitting, as now the speech is going on perfectly well. We know of no other case of aphonia in which the effect of the electric treatment was so quick and manifest, without having been connected with any inconvenience whatever. Professor Sédillot applied electricity in a case of aphonia, one pole

being placed alternately on different parts of the tongue, and the other one on the mastoid bone, the posterior and superior part of the neck and various points of the face. The application was useful, but could not be repeated until one week afterwards, owing to severe headache, which had followed the application of electricity. By localizing the electric stimulus in the inferior laryngeal nerve no such inconveniences were produced.—[*Med. Times and Gaz.*

EDITORIAL AND MISCELLANEOUS.

The Principles and Practice of Obstetrics. Including the Treatment of Chronic Inflammation of the Uterus, considered as a frequent cause of Abortion. By Henry Miller, M.D., Professor of Obstetric Medicine in the Medical Department of the University of Louisville. With Illustrations on wood. Philadelphia: Blanchard & Lea. 1858. 8vo. pp. 624.

A systematic book on Obstetrics, or any department of medicine, must necessarily be, to a considerable extent, a republication of matter already in print, but the present work is less obnoxious to this objection than any that has appeared for a long time. Dr. Miller has very properly, not deemed it incumbent on him to relate every thing his predecessors have thought, done or written. He quotes when requisite, for illustration and elucidation, and no more. He tells what he has seen and done himself—what others will meet in practice—the services they will be required to render—the operations they will be called on to perform. He records his own experience and practice.

Some treatises are more extensive and comprehensive, consequently in some respects preferable as books of reference, perhaps as text books for students; but as a practical work very few are equal to it, and none possess higher claims to originality. The author is an original and independent thinker—a bold and able practitioner.

We would not be over-fastidious or severe, but we must acknowledge, we admire his sound logic, his plain common-sense instruction, more than his occasional sallies of wit and humor. His style would be sufficiently interesting, were he in another edition, which we predict will soon be demanded, to expunge everything like a jest, pun, or other witticism: his subject is too serious, too delicate, and too important to admit of anything ludicrous, such as the serio-comic delivery of an unfortunate half-born baby, by three persons holding on to each other and the feet of the infant, and "taking a long pull, a strong pull, and a pull altogether."

He asks us to excuse a pun on his own name; we have too much respect for that name to have it treated so lightly: for, besides the honor which his own well earned fame has cast about it, there are too many tender recollections embalming it, for it, ever, to form the element of a jest; the word is dear to us, as the name of a loved and respected colleague; with us also, it is hallowed, nay almost sacred, because it calls up in solemn remembrance the lamented image of one of Georgia's most cherished sons, "The Woman's Friend" in the councils of our State; and with all the world, it must forever waken painful and loving remembrances, as it reminds us of the melancholy fate of one of Scotland's brightest jewels, her mechanic-philosopher, the gifted "Stone-mason of Cromarty," who

> "Quarried truth all rough-hewn from the earth
> And chiselled it into a perfect gem."

If time would permit, it would afford us much pleasure to analyze the entire work, and give the author's views on many subjects which, with very rare exceptions, we most cordially approve. His highest claims to originality are based on his 5th and 6th chapters, in which he treats of abortion and hæmorrhage; each of which published alone would constitute a valuable monograph.

Dr. Miller's method of treating the subject of abortion is novel and interesting, and founded on the most rational and scientific principles. We would not assert that his opinions and views are all original: they have generally been entertained and expressed by others, but to him the credit is due of having collated them in such a manner, from various sources, as to constitute an original and valuable treatise.

Dr. Miller considers the principal cause of abortion to be disease of the cervix, which he believes extends from the cervical canal into the cavity of the body, much more frequently than Dr. Bennett supposes, which opinion we have long since entertained and expressed. In his preface he says:

"I am not aware that modern improvements in uterine pathology, resulting chiefly from the employment of the speculum uteri, and the more rational and successful treatment of uterine diseases, which have followed in their train, have hitherto received the full recognition which they deserve, by any author of a treatise on obstetrics. Appreciating so highly as I do these advances in the right direction, and having enjoyed such abundant opportunities of testing their value, I have thought it incumbent on me to give them their rightful place in this volume, and this was found in discussing the subject of abortion. There is no fact in pathology, of which I am more thoroughly convinced, than the frequency of inflammation and ulceration of the neck and body of the uterus during pregnancy, and I am as well persuaded that such a morbid con-

dition of the gestative organ is among the most frequent causes of abortion. I could not, therefore, hesitate to give to specular treatment of the disease a prominent place in the prophylaxis of abortion."

Dr. Miller makes the following very judicious and practical division of the treatment of abortion:

"The treatment of abortion may be divided into the *resistive*, the *palliative*, and the *prophylactic*—meaning by the first such measures as may be taken to avert the disaster when it is threatened; by the second, the conducting of it to as favorable an issue as possible, when miscarriage is inevitable; and by the latter, the prevention of it by the cure of any diseased state, which would be likely to occasion it or has already produced it in the previous pregnancies of the patient."

Professor Miller considers that the prophylactic is the most important part of the treatment, and that this consists principally in treating the uterine disease, which is the most frequent cause. Under this head he gives the appropriate treatment of inflammation of the cervix, and its extension into the cavity of the body. His favorite remedy is nitrate of silver, although he does not by any means neglect or ignore others, either general or topical.

In the treatment of chronic endo-uteritis, in place of injections, of the danger of which he entertains very just apprehensions, he proposes to insert a strip of lint, wet with a saturated solution of nitrate of silver, through the cervical canal into the cavity of the body. In reference to the alarming symptoms that frequently follow uterine injections, Dr. Miller remarks:

"Considering the subject in all its bearings, it occurred to me that such sudden and violent symptoms must be owing more to the *mode* in which the remedies were applied than to actual intolerance of the internal surface of the uterus. Acting upon this view, instead of abandoning the use of topical remedies altogether, I began to introduce them upon strips of lint, pushed into the uterine cavity with a probe or sound. I first applied the nitrate of silver in this way, notwithstanding that experience had taught me that a weak solution of it—two grains to the ounce of water—injected into the uterus, might be followed by the alarming symptoms that have been detailed. I used it, commencing a very weak solution, carefully prepared by the apothecary, and finding that it caused no more pain than an ordinary cauterization of the os uteri, I was emboldened to make it stronger and stronger, until I ceased to have it prepared by weight and measure, but took a strip of lint, wet it thoroughly with water, and passed the stick of caustic over it till it was imbued with, as I judged, a saturated solution. I have cauterized the internal surface of the womb in this manner, in quite a considerable number of cases, without any of the alarming consequences incident to intra-uterine injection. No practitioner hesitates, in cervicitis, to push the nitrate crayon into the neck to cauterize the whole extent of its internal surface.

Experience warrants me to declare that we may, with as little hesitation, treat the internal surface of the body in the same manner, only a saturated solution is preferable to the stick, on account of its liability to break and be retained in the cavity—an accident which sometimes happens in the neck."

This is a valuable suggestion: it will doubtless be found an excellent practice when that patulous state of the os and cervix, which always obtains to some extent in cases of endo-uteritis, is very much exaggerated; but I cannot conceive that it can possess any advantage over the introduction of the solid nitrate through the os internum into the cavity of the body, where it may be held long enough for some of the caustic to dissolve and diffuse itself.

Our experience differs a little from that of Dr. Miller: first, in that no practitioner hesitates to thrust the nitrate crayon into the cervical canal in cervicitis: we have met with a number of cases in which the external cervical inflammation had been successfully treated, while its extension into the cervical canal had been altogether neglected, from the physician, formerly in attendance, hesitating to introduce the caustic freely into that canal. Secondly, according to my observation, the caustic crayon when sufficiently large is not liable to break in the cervical canal, and when it does, from the contractile powers of that canal it is promptly expelled.

Dr. Miller's remarks on hæmorrhage in general are excellent; but he proposes a new method of treating the unavoidable, which if found on fair experiment by other practitioners to be as successful, as it has proved hitherto in his own practice, will be one of the greatest improvements in modern midwifery, and ought to render his name illustrious. At present we regard it very favorably, as every proposed improvement ought to be, in a practice, to say the least, heretofore very unsatisfactory, but we are not prepared to adopt it to the full extent advised by Dr. Miller.

Properly executed it might perhaps answer admirably in every case, if the practitioner had charge of it from the commencement; but cases occasionally occur in which the labor is far advanced and the patient in extreme exhaustion, when first seen by the practitioner, in which I do not think anything can prove a substitute for version; therefore, I can not yet confine turning exclusively to the correction of malformations; although I fully concur with Dr. Miller that as an obstetric operation it has been grossly abused, and ought to be very much limited in practice.

Dr. Miller describes his new method in the following extracts:

"The *substitute for turning*, which I will venture to propose, is a modification of the method of M. Puzos, and consists in originating ex-

pulsive contraction of the uterus by the tampon or plug and then puncturing the membranes, relying on the tampon to control the flooding until the liquor amnii is evacuated. This is the only method of treatment, of which I have any experience, and I have employed it with uniform success, so far as the mother is concerned. This is strong testimony, but it must be mollified by the confession that my experience, in placenta prævia cases, has not been large: yet I have encountered them sufficiently often to have acquired some acquaintanceship.

"To expound this method of treatment and at the same time vindicate it, it must be observed that the tampon is preferable to manual dilatation, as an oxytocic, in placental presentations, because forced dilation could not be practised without necessarily still furthur detaching the placenta, giving rise to additional hemorrhage, all the more profuse on account of the non-parturient state of the uterus. Then, again, such manipulations would be objectionable because of the greatly more vascular and sensitive condition of the portion of the uterus contiguous to the os, which has already been mentioned as a reason why delivery by turning ought to be refrained from.

"In arousing the uterus to expulsive contraction, the tampon acts, I suppose, through the channel that has been more than once indicated in the previous pages of this work, viz: irritation of the incident nerves of the cervix, leading to reflex action of the fibres of the fundus and body. Explain as we will, however, the fact is generally admitted that the tampon is competent to excite uterine contraction and being on labor. Should it fail (and what may not?) it may be reinforced by the puncture of the placenta, as recommended by M. Gendrin, which, considered merely as a means of bringing on labor, is excellent and wholly unexceptionable, and it will be observed that I am not, just now, speaking of the restrainment of hemorrhage but of the excitement of labor. No case can occur, I think, in which the tampon, aided, if necessary, by puncture of the placenta, will fail to bring on labor, in a longer or shorter time, and where the tampon alone is sufficient, and labor is regularly established by its instrumentality, either the placenta must be punctured to evacuate the liquor amnii, or the finger must be pushed up beyond its margin to rupture the membranes during a uterine pain. I have myself usually practised the latter alternative, and always felt that my patient was safe, when advanced thus far on the road to recovery.

"The supervention of labor—the evacuation of the liquor amnii—these, in their order, are the great bulwarks of a flooding woman, no matter where the placenta is implanted. It is a maxim in obsteterics that a *contracted* uterus cannot bleed; it might, I think, be amended and enlarged, by adding that neither can a *contracting* uterus bleed when it is emptied of its waters, or at any rate, if it bleed, the hemorrhage is no longer dangerous."

In conclusion, we can only express our regret that we cannot do full justice to this excellent book, by presenting larger extracts, in an extended review. We can only now say that, we have derived much pleasure and benefit from its perusal, and that we cordially recommend it to the profession, both to practitioners and to pupils. J. A. E.

The Institutes of Medicine. By MARTYN PAINE, A.M., M.D., L.L.D., Professor of Institutes of Medicine and Materia Medica in the University of the City of New York, &c., &c. 4th Edition, pp. 1095. Harper & Brothers: New York, 1858.

The above work, together with the volumes of the Medical and Physiological Commentaries, and a pamphlet of Essays on Vitality and Remedial Agents, was acknowledged in the last number of this Journal, as sent us by their distinguished author. We wish to notice briefly, at present, the "Institutes of Medicine," regretting, that in our monthly journal space is allowed only for a bibliographical notice, rather than for a review, which the character of the work richly merits.

Of all American writers, no one has been more indefatigable and laborious than Professor Paine, and the works of but few, either in this country or in Europe, display a greater amount of learning than we find enriching both the Institutes and Commentaries of this perhaps most recondite of American authors. On opening any of his works, we may be said to be, at once "lost in a sea of erudition," and his copious references to the authors of every country and every language, attest his familiarity with the general literature of the science to an extent rarely evinced by cis-Atlantic writers. Although, in the beginning, we must affirm our thorough dissent from both the tenor and the tendency of Professor Paine's peculiar physiological tenets, we cannot justly withhold our cordial recommendation of the work before us, as one presenting a most valuable collection of physiological and medical facts, accompanied, in many instances, with very just commentaries upon the phenomena of life; but we must say, that his reflections have not always led their author to such principles of practice, as we can wholly approve: for instance—he quotes, with approval, a number of authors who strongly recommend profuse bloodletting in typhoid diseases, and endorses Dr. Parry as having "introduced the only successful or philosophical treatment, that of bloodletting, in purpura hemorrhagica." This treatment may have been applicable in some particular form of purpura, and in some peculiar epidemic; but our own experience, and that of most practitioners of the present day, will attest the virtue of an opposite course, and the extreme hazard of depletion.

From our examination of the work, we receive the impression that its pervading spirit will be found expressed in the first line of the initial page; "SOLIDISM and vitalism will form the basis of these Institutes," says our author, and we find, upon every page, that it is most uncompromisingly carried out. VITALISM is for Dr. Paine, the Procrustean bed upon which every fact, every phenomenon, and every medical theory are placed, and with his determined hand laid upon them, they are length-

ened or shortened into a consistency which is often almost unanswerable. For this vitalism, he contends with the most unyielding pertinacity, and the chief objects of his horror, appear to be, the chemical and humoral doctrines, in whatever form they may be presented. To the humoral pathology he *specially* devotes but a small number of pages (about 35) of the present work, but he maintains a sharp skirmishing warfare with this class of medical philosophers, from his very first to his very last page.

This vitalism, which in earlier times, and even as late as the days of Boerhaave and Cullen, was a wonderful advance upon the unsettled notions about physiological action, has become, in these later days, when all our discussions of the phenomena of organic action are *conditioned*, by a definite understanding of the *nature* of the elements with which we deal, too vague a principle to "form the basis" of our physiological and pathological reasonings. Vitalism, in its technical sense, has ever appeared to us, to sustain the same relation to medicine, that the searchings after the nature of the soul do to theology. The existence of both is evident—indeed undeniable, and must be admitted as being in close relation, the one with all our moral and intellectual, and the other with all our physiological and organic acts, but still neither of them, when we attempt to seize upon and define it, can be made the basis of satisfactory and conclusive argument. As in theology, it has scarcely ever yielded any thing to investigate the ultimate nature of the soul, so in medicine, beyond the full admission of the vital principle and its acceptance as a dominant influence in all our organic acts, nothing has been gained by the most elaborate investigation into the exact nature of the force by which these organic acts are accomplished.

Physiology, like all the other inductive sciences, has for its basis, a bundle of *facts*—indeed, in the present day, it has become an *ocean* of facts. These facts, are of no one kind: many, it is true, relate to the nervous system, and indicate its sway over all our vital acts, but then others as fully shew that humoral, chemical and atmospheric influences are at work in modifying, supplying and controlling the power exercised by the nervous system, and so intimately blended here, are cause and effect, that when we would attempt to say of any one of them, "here is the beginning," we become involved in labyrinths interminable, and are forced to look back, to that Beginning of all beginnings, that source of all power, the Creator of man and the universe.

Notwithstanding we have thus candidly considered those parts of Prof. Paine's work which have appeared, to *us*, objectionable, we repeat, that we can still cordially recommend it as a valuable addition to the medical literature of our country. In an age when Humoralism and

Organic Chemistry are threatening to displace all other views of physiological and pathological action, this work, *because* it is *ultra* in its vitalism and solidism, must exert a most salutary influence upon the history of the medical opinion of the present, and the rising generation. It requires no half-way assertion of the power of nervous action to gain its admission; but he who would advocate its unmodified sway, as Dr. Paine does, must be as firm and as uncompromising even as he has been, throughout the comprehensive work before us.

The present edition has been prepared, apparently with great care, and, with a few marring exceptions, the typographical execution very well sustains the reputation of the Harpers. A most copious analytical index much enhances the value of the volume, and attests well, the perseverance and industry of the author.

In regard to what may be called, par excellence, the controversial portion of this work, viz., "The Rights of Authors" in the appendix, we do not intend to make any extended remark: For although some of Dr. Paine's reclamations, strangely enough, appear to refer pointedly to the labors of one of the editors of this journal, still, printed beside them—on the same page, is the unanswerable decision of Dr. Marshall Hall, the acknowledged Father of the great principle of Reflex action, awarding the merit on the other side, and declaring that "the field is *indisputably* His Own." With his originality thus *asserted*, he may well be content to add, not even a single word, for himself, no matter from what source the *denial* may come.

Under these circumstances, we do not feel called upon to select this *one*, from the *thirty-nine!* distinct claims recorded in this appendix, in order to make it the subject of particular discussion.

PROFESSORIAL CHANGES, HOSPITALS, COLLEGES, &c.

In our last number, we recorded several changes in various Faculties of Medical Colleges throughout the United States. Our exchanges supply us with the following in addition:

Professor Daniel F. Wright, the former able Professor of Physiology and Pathology in the Memphis Medical College, has been elected to the same Chair in the Shelby Medical College. Professor W. is also editor of the *Memphis Medical Recorder*, one of our ablest and most valuable exchanges. We sincerely hope that his change of residence will not deprive us of our valued confrere.

Dr. J. H. B. McClellan of this city, (Philadelphia,) has been elected to fill the vacancy in the Medical Department of Pennsylvania College,

caused by the removal of Dr. T. G. Richardson to New Orleans.—*Medical and Surgical Reporter.*

Dr. Richardson held the Chair of Anatomy in the above College.

"Professor S. G. Armor," says the *N. O. Med. News and Hospital Gazette*, "requests us to announce his resignation of the chair of Pathology and Clinical Medicine in the Missouri Medical College of St. Louis. Dr. B. L. Jones has been appointed to the vacant chair of Chemistry in the Oglethorpe Medical College."

The New Orleans Medical News and Hospital Gazette, thus regretfully refers to the resignation of Dr. Thomas Peniston from the chair of Clinical Medicine in the N. O. School of Medicine: "We are recording an event which only gives us pain, and we shall do it in as few words as possible. Impaired health has forced our worthy and most highly esteemed colleague to tender his resignation, and he has gone across the water to seek repose from his labors, and that restoration for which he shall have our heartfelt prayers."

Professor Austin Flint, the distinguished author of Clinical Reports on Typhoid Fever, the most accurate and reliable since those of Louis, has been elected to fill the chair vacated by the resignation of Dr. Peniston.. As Philadelphia has recently been making inroads into a Southern Faculty by calling Prof. Dickson from Charleston, it seems but fair that New Orleans should make reprisals on the North; this has been done by the New Orleans School of Medicine securing Dr. Flint from Buffalo, and the University, Dr. Richardson from Philadelphia. Also, Dr. J. F. Grall has been appointed Demonstrator of Anatomy in the New Orleans School of Medicine.

University of Louisville.—This excellent Institution which a year ago had the misfortune to lose its edifice by fire, with an energy truly surprising and highly commendable in its Faculty, was able to gather the same season, quite a large class. The following changes have occurred in its Faculty: Prof. Benjamin R. Palmer has been transferred from the chair of Anatomy, so long and so ably filled by him, to that of the Principles and Practice of Surgery; and Prof. J. B. Flint, the former Professor of Surgery, occupies the newly created chair of *Clinical* Surgery, while the chair of Anatomy thus vacated is filled by the election of Dr. J. W. Benson. Prof. Henry Miller having resigned the chair of Obstetrics, his place has been judiciously supplied by the election of Dr. Llewellen Powell.

Dr. S. M. Bemis, favorably known to the profession by his contribu-

tions to the American Medical Association, has been elected to the chair of Clinical Medicine.

The other members of the Faculty occupy their old positions, viz., Prof. T. S. Bell, Theory and Practice; Prof. L. P. Yandell, Physiology and Pathological Anatomy; Prof. Robert J. Breckenridge, Therapeutics and Materia Medica; and Prof. J. L. Smith, Chemistry and Toxicology. With the above excellent organization, the University may reasonably expect the same distinguished success in her new edifice, which marked her progress in the old.

Shelby Medical College.—The unprecedented success of the *University of Nashville*, has encouraged others to establish a second Medical Institution at this point. The following gentlemen have been elected to fill the respective Chairs:

J. F. May, M. D., Principles and Operations of Surgery; E. B. Haskins, M. D., Theory and Practice of Medicine; J. P. Ford, M. D., Obstetrics and Diseases of Women and Children; T. L. Maddin, M. D., Descriptive, Histological and Surgical Anatomy; J. H. Chandler, M. D., Materia Medica and Therapeutics; R. O. Currey, M. D., Chemistry and Medical Jurisprudence; Daniel F. Wright, M. D., Physiology and Pathology; H. M. Compton, M. D., Demonstrator.

The circular of the new college evinces a conciliatory spirit, and deprecates strongly any suspicion of unworthy rivalry or desire to cripple the valuable organization already existing in Nashville. "Its success is a source of gratification to all who take pride in the public institutions of the city and the state, and, without affectation, they desire it to continue."

Recognizing the names of several of our valued friends in the above Faculty, we can cordially wish them success; but with friends equally prized by us, in the University, that success could be no longer gratifying to us, should it be secured at the expense of that noble and liberal Institution.

Nashville Medical Society.—The Physicians of Nashville, Tenn., have recently organised themselves into a society, adopted a constitution and chosen officers for the current year. Meetings are appointed to be held monthly. Dr. A. H. Buchanan is President, Dr. S. S. Mayfield, Vice-President, and Dr. G. S. Blackie, Secretary and Treasurer.—[*Boston Med. and Surg. Journal.*

Ohio Medical and Surgical Journal.—Professor J. M. Hamilton has become associated with Prof. John Dawson as joint editor and proprie-

tor of the Ohio Medical and Surgical Journal, published at Columbus in that State.—[*Ibid.*

"We have room merely to announce," says the *Medical and Surgical Reporter*, "that Dr. R. K. Smith has been re-elected Chief Resident Physician to the Philadelphia Hospital, Blockley—thus effectually redeeming that Institution from the disgraceful position which it has for some time occupied." We learn also from the Reporter, that a new college hospital has been established at Brooklin.

NEW JOURNALS.

Journal de Physiologie de l'Homme et des Animaux.—We have the pleasure of acknowledging the first number of this valuable Journal whose existence is due to the energy and zeal of the distinguished experimental physiologist, Dr. E. Brown-Sequard, so well known in this country, as well as in Europe. We believe that this is the first, and at present the only periodical exclusively devoted to that most interesting and progressive branch of Medical Science—Physiology. The "Annals of Anatomy and Physiology," published in Edinburgh, by John Goodsir, was of a different character, and so far as we know, did not reach its third number. Dr. Brown-Sequard is assisted in his editorial labors by Drs. Ch. Robin, Ch. Rouget, and Tholozan, and he has the promise of original communications from many distinguished contributors in America, England and Germany.

Besides Physiology proper, the journal will treat of—

"1. Organic Chemistry, hygiene, toxicology, and legal medicine, in their relations to physiology.

"2. Descriptive anatomy, comparative anatomy, teratology, and normal and pathological histology, so far as they may be connected with physiology.

"3. The application of physiology to the practice of medicine, surgery, and obstetrics.

"The numbers will be issued four times a year—on the first day of January, April, July, and October—each number containing about 200 pages.

"The contents will be classified in the following manner:—

"1. Original communications, forming more than one-half of each number.

"2. Articles published abroad, entire or in part.

"3. Critical analyses of books published in France and other countries.

"4. Accounts of the progress of physiology in France and other countries.

"The subscription price in this country will be twenty-five francs, or $5 per year."

American correspondents will please address, *post paid*, Mons. J. B. Baillaire, et fils, or Dr. Brown-Sequard, Rue de Dragon, 16 á Paris.

We place the above journal, with pleasure, on our exchange list, and hope to make it valuable both to ourselves and to our readers.

The Maine Medical and Surgical Reporter.—We have received both the first and second numbers of the above promising new journal. It is edited by W. R. Richardson, M. D. and R. W. Cummings, M. D., who are also the proprietors. It is published monthly, at Portland, by Sanborn & Carter. Both numbers are filled with valuable matter, original and selected, and the typographical execution and style of the journal does credit to both the editors and the publishers. We welcome the new comer to our sanctum, and with pleasure place it among our exchanges.

Symmetrical Morbid Action.—We copy the following from the Buffalo Medical Journal. The fact is certainly worthy of record, however darkly hidden may be the explanation.

Lockport, May 31st, 1856.

Prof. Hamilton:

Dear Sir,—I send you the following report of a case that occurred in my practice, and which may possess interest enough to entitle it to a more extended publicity. You are at liberty to do with it as you see fit:

In the summer of 1853, Mr. Monroe Levally, wagon-maker, age 46, called at my office and requested me to examine his arm. I did so, and found immediately over the point of the olecoron process an encysted tumor of the size of a robin's egg, and which made its appearance a few days previous. I made a few incisions in the sack with an abscess lancet, and obtained about ʒiii. of a thick fluid. Introduced into the sack a pledgit of lint, and in a few days a perfect cure was effected.

But the next week I was not a little surprised, when he returned, with *another tumor* on the *other* arm, an exact counterpart of the previous one in every particular. It made its appearance in the same manner; in locality it was the same, (except on the other arm,) of the same size and form. I treated in the same manner, and the result was the same.

How far this goes to prove the existence of a sympathetic action between the corresponding points of the human system, we leave for others to decide; but it does certainly go far to prove that, under certain circumstances, one elbow at least has some sympathy with the other.

Yours, ever, A. M. Leonard.

Dr. Elint,—"Symmetrical diseases" are known to occur often in eruptive affections, and occasionally in rheumatic and syphilitic affections, but this is the only example which I have known where an encysted tumor, or a true tumor of any kind, has illustrated this curious law of affinities between opposite portions of the body.

Yours, F. H. Hamilton.

Pertussal Glucosuria.—In the year 1855, the fact was first pointed out by Dr. Gibb, that the urine in almost every case of hooping-cough is saccharine, the quantity of sugar varying, generally but small, and sometimes a trace only being present. A considerable quantity he has, however, found on several occasions, the specific gravity being at the same time high, and in general characters the urine has been similar to that of diabetes. A case of pertussis, with urine in this last condition, was recently under Dr. Gibb's care, at the St. Pancras Royal Dispensary, in a child of six years, who had reached the spasmodic stage of the complaint, without any complication, unless the glucosuria be considered as such. The remarkable feature of this case was the rapidity with which the quantity of sugar diminished under the usual plan of treatment recommended by Dr. Gibb in this disease—namely, nitric acid in large doses. The specific gravity of the urine became lower, the quantity of sugar diminished, and, as a cure was established within three weeks, not a trace of it was to be found. It is an interesting fact, that nitric acid should so rapidly diminish the glucosuria. This may be effected in one of two ways—either by its curing the purtussis, and a condition with it, which must hereafter be looked upon as symptomatic of it; or else the assimilation of the acid prevents the formation of the sugar. To the last view Dr. Gibb inclines, but he says large doses only will produce this, as experience has proved in his hands. This condition of the urine in hooping-cough is well worthy of record. We shall refer at a future time to the explanation given of its appearance, but we take this opportunity of throwing out the suggestions of a trial of the influence of nitric acid in cases of diabetes mellitus.—[*Lancet.*

New Method of Amputation.—M. Maisonneuve read lately a paper before the Academy of Sciences of Paris, on a new method of amputation, which he calls the *diaclastic* method. It consists of a contrivance for fracturing the bone at the precise point required; after which the muscles are strongly compressed by mechanical means, so as to reduce them to small diameter. They are divided, and the member separated from the trunk. In consequence of the compression, all hemorrhage is effectually prevented. M. Maisonneuve quoted six cases of amputation by this astonishing procedure—five of the leg, and one of the arm; in all of which complete cures were effected. No unsuccessful cases, he says, have occurred to him.—[*Lancet.*

"*The Sands of Life*" "*Played Out.*"—Under this caption the *New York Times* gives an account of the legal means lately adopted in that city to put a stop to the disgraceful system of quackery for some years carried on by a reckless swindler representing himself, in his advertisements, as a physician "whose sands of life have nearly run out." It seems that he, with other quacks of the same sort, have been arrested, and the letters which are daily flowing into them by mail are sent on to the Dead Letter Office at Washington, whence the money contained in them will be returned to the deluded victims of this last and boldest of the medical humbugs.—[*Boston Med. and Surg. Journal.*

Glycerine with Alum and White Precipitate.—Dr. Anciaux recommends the following formula in the local treatment of erysipelas, obstinate eczemas and atonic ulcers: alum, in impalpable powder, 30 parts; white precipitate, 1 part. Triturate them well together, put them in a phial and add glycerine, 90 to 100 parts. Shake the phial, until the mixture assumes the consistence of cream, each time it is applied.—[*Ibid.*

Painless Caustic.—M. Piedagnel, after various trials, has succeeded in producing a caustic that may be employed, causing little or no pain. It is formed of three parts of the Vienna caustic in powder and one part of hydrochlorate of morphia, intimately mixed together, and then made into a thick paste by means of chloroform, alcohol, or water. It is applied to the skin on diachylon. A black eschar is produced in fifteen minutes, increasing in thickness with the duration of the application. The morphia mixed in the same proportion with powdered cantharides, prevents pain during the rising of a blister. M. Piedagnel, who at present has only used this means for the production of issue and blisters, states that the action of the morphia is merely local.—[*Druggists' Circular.*

A Specific for Scabies.—At the last meeting of the Academy of Sciences, Paris, M. Bonnet of Epinal, sent in a paper announcing that benzine is a specific for the itch. The author of the paper states that if benzine be rubbed on the parts affected, and also very slightly on the other parts of the body, a cure will be effected in the course of five minutes, after which time the patient may take a warm bath for half an hour. Nevertheless, in cases where the itch is accompanied with a secondary eruption, the latter will require a separate treatment.—[*Ibid.*

Hydrocele treated by Electricity.—Rodolfi of Milan, has applied electricity for the cure of hydrocele in four cases, and reports very favorably concerning its effects, not only the fluid disappearing in all, but its reproduction being prevented in three of the cases. Bunsen's or better still, Daniel's pile should be employed.—[*Ibid.*

New local application in Erysipelas.—M. Anciaux speaks in high terms of the following application for erysipelas and some other cutaneous affections. Alum reduced to impalpable powder, 30 parts; white precipitate, 1 part. Rub up well together, and place the powder in a bottle, and then add from 90 to 100 parts of glycerine. Shake the bottle until the mixture assumes a creamy consistence, and repeat the shaking whenever the application is about to be employed.—[*Ibid.*

Infants found dead in bed, are not generally killed by being laid on by their mothers, but by being suffocated under the bed-clothes, with carbonic acid gas exhaled from their own lungs and re-inspired. They die without pain, in a profound sleep. Mothers, give your babes more air. Let them sleep with their heads uncovered. Do not let them go to sleep on or under your arm, for when you cover yourselves, in the half unconciousness of partial sleep, you will cover your darlings' heads also, and in the morning may find them still in sleep—a sleep from which your caresses cannot awake them.—[*Pacific Med. and Surg. Journal.*

SOUTHERN

MEDICAL AND SURGICAL JOURNAL.

(NEW SERIES.)

Vol. XIV.] AUGUSTA, GEORGIA, SEPTEMBER, 1858. [No. 9.

ORIGINAL AND ECLECTIC.

ARTICLE XXX.

Observations on Malarial Fever. By JOSEPH JONES, A.M., M.D., Professor of Physics and Natural Theology in the University of Georgia, Athens; Professor of Chemistry and Pharmacy in the Medical College of Georgia, Augusta; formerly Professor of Medical Chemistry in the Medical College of Savannah.

[Continued from page 538 of August No. 1858.]

SECTION II.—REMITTENT FEVER.

In the preceding articles upon Intermittent fever, but few comparisons were made—but few conclusions drawn. A simple statement of the phenomena was made, and they were placed in a situation for future analysis and comparison.

A similar course will be pursued, with Remittent and Congestive fevers.

When we have examined the phenomena of the varieties of Malarial fever, then analysis and comparison will be instituted: then the similar will be combined, and the dissimilar separated; and thus we will endeavor to establish the relations, or laws, of the phenomena of Malarial fever.

Our knowledge of Malarial fever, and in fact, of all fevers, is imperfect. Many phenomena have never been analyzed, and it is probable that there are many which have escaped observation entirely. It is necessary, therefore, that we should proceed upon the strict principles of induction.

We must establish a true knowledge of Malarial fever, in the

same manner that all sciences have been constructed. By observation, experiment and reason, facts must be observed, recorded, accumulated, compared: complex phenomena observed, recorded, analyzed, decomposed, and their component elements, arranged and compared: the errors of the senses corrected, and thus fundamental laws or relations established.

By analyzing phenomena, and connecting them by the natural relations of succession and resemblance, fixed laws or relations are discovered.

The end of knowledge is fore-sight, fore-knowledge; and when perfected, it will enable us to predict with absolute certainty the future course of events.

Thus the great object of the Astronomer is to determine the fixed relations or laws of the universe, so that the precise condition of the heavenly bodies, at any future time, may be determined with absolute certainty.

The great object of the Physician, should be to determine the fixed relations or laws of the animal economy, and the definite action, constitution, and relations of morbific and remedial agents, so that he may be able to predict the results of the actions of these agents, and also to control and direct their action.

This is our object and this our method. But our instruments and means of investigation have been imperfect. The phenomena themselves were obscure, and it is probable that many, of great importance, entirely escaped our observation.

Imperfections of the senses, imperfections of the mental faculties, imperfections in our materials and instruments, of experiment and analysis, will necessarily render the results imperfect.

My object is to assist in the establishment of the truth, and it is my fervent hope, that whatever results, relations, or laws, I may deduce from these observations, will be tested, and weighed by careful, conscientious observers. Thus, we hope, that in time, the errors will be eliminated, the imperfections removed, the results enlarged, and the truth established.

CASE XXIII.—English seaman: age 25, weight 140, height 5 feet 6 inches; black hair; florid complexion. Sailed from New York to Darien, Georgia. Remained in Darien five days; during which time, he slept on board the vessel, lying in the Altamaha river. Sailed from Darien, and arrived in Savannah

twelve days ago. During the day has been running on a steam tug, up and down the Savannah river, from its mouth to the city, and has slept, during the night, on the bay. Was taken with a chill, September 6th, 10 o'clock A. M.

September 10th, 7 o'clock P. M. Took salts and senna, this morning. This operated five times. Has taken no other medicine. Pulse 90, full; respiration 48, panting, thoracic. Temperature of atmosphere, 80° F.; Temp. of hand, 103°; Temp. under tongue, 105°. Tongue pointed and red at tip and edges, superior portion coated with black fur; skin dry. Complains of great thirst and pain in his head. Face flushed.

September 11th, 11 o'clock A. M. Pulse 88; respiration labored, thoracic, panting, irregular, varying from 34 to 40. Temperature of atmosphere, 82° F.; Temp. of hand, 103°25′; Temp. under tongue, 105°. Says that he did not rest well last night, and complains of great pain in his head. Intellect clear. Has been vomiting yellow and green matters. Bowels have not been moved during the night. Skin dry and harsh to the feeling. Tongue red, dry and glazed. To the finger the tongue feels as dry as the skin. The state of the tongue would lead us to suspect tenderness of the epigastrium, but there is none. Complains of great thirst; says that he felt very cold and weak this morning at 5 o'clock. The nurse states that at this time his pulse was 65, and his skin cool. ℞. Sulphate of quinia, grs. v. every three hours, up to grs. xxxv.

If the stomach rejects the sulphate of quinia, administer the following injection:—℞. Sulphate of quinia, grs. xx.; Starch, f℥ij.; Tincture of opium, ♏ x. Mix. Repeat in three hours. ℞. 5 cut cups to epigastrium. ℞. Soda powders. Diet, gruel and flax seed tea.

Amount of Urine passed during the last	16 hours,	grains,	8160
" " " calculated for	24 "	"	12240
" " " excreted hourly,	- - -	"	510

Urine clear, high colored, like new Madeira wine. Specific gravity 1020. Reaction decidedly acid. After standing 40 hours, threw down a small deposit of regular prismatic crystals of triple phosphate and vegetable cells.

ANALYSIS XXXVII.	Urine excreted in 16 hrs., grs. 8160, contained grains,	Calculated am't of Urine for 24 hours, grs. 12240, contained grains,	1000 pts. contained
Water,	7618·696	11428·044	933·664
Solid matters,	541·304	811·956	66·336
Urea,	349·200	523·800	42·593
Uric Acid,	3·200	4·800	0·393
Extractive & coloring matters,	168·533	252·805	20·673
Fixed saline constituents,	20·160	30·240	2 475

Sept. 11th, 7 o'clock P. M. Patient is not so restless—has an inclination to sleep, and his intellect acts more slowly than normal. Tongue moister than this morning, but still much dryer than normal; free extremity of the tongue clean for one inch from the tip; this portion is as red as scarlet; the remainder of the tongue is coated with dark fur. The nurse states that, "after the application of the cut cups, his skin began to moisten—he became much more quiet, and went to sleep." Skin moist, but hot; slight tenderness upon pressure of epigastrium; lips dry, and coated at the edges with yellow matter. Pulse 90; respiration 40 to 44, panting, thoracic, irregular—every 15 or 20 respirations, he draws a long sigh, inflating his chest to its utmost capacity. Temperature of atmosphere, 81° F.; Temp. of hand, 104°; Temp. under tongue, 104° 8′.

Bowels have not been moved. Has taken 20 grains of the sulphate of quinia.

℞. Stop sulphate of quinia, and give soda powders. As soon as fever remits, commence with sulph. of quinia, grs. v. every three hours, up to grs. xv.

Urine high colored, clear; reaction decidedly acid. Specific gravity 1019·6. After standing 30 hours, let fall a small deposit of vegetable cells, and prismatic crystals of triple phosphate and globulo-acicular crystals of urate of soda.

Amount of Urine excreted in 8 hours, - -	grains,	5098.
Calculated amount, " " 24 " - -	"	15294.
Amount " " hourly, - -	"	637.2
Amount of Urine excreted in the last 24 hours,	"	13258.
" " " " hourly, " " " -	"	552.4

ANALYSIS XXXVIII.	Urine excreted in 8 hours grs. 5098 contained, grains	Calculated am't Urine for 24 hours, grs. 15294 cont'nd grains	1000 parts of Urine contained	Urine excreted in the last 24 hours, grs. 13258 cont'nd grains
Water	4764·865	14294·595	934·652	12383·561
Solid Matters	333·135	999·405	65·348	874·439
Urea	223·000	669·000	43·722	572·300
Uric Acid	1·450	4·350	0·284	4·650
Ext. and Col'ing Matters.	90·210	270·630	17·707	258·743
Fixed Saline Constituents	18·325	54·975	3·595	38·485

A comparison of this analysis with the preceding one, shows that the uric acid was below the standard of health, when the patient was entirely free from medicine, and that under the action of the sulphate of quinia (grs. xxv.), the uric acid was very slightly diminished in amount, only $\frac{3}{100}$ of a grain during 24 hours.

If we compare these analyses (xxxvii. and xxxviii.) with the analyses of the urine in intermittent fever, (see pages 386–391

and 438–450 of this journal,) it is evident that the urea has greatly increased in amount. The increase has been proportional to the increase of the severity of the disease. When we consider the state of rest, and the almost complete starvation of the patient, it is evident that the urea has increased to more than double the normal quantity. These facts will be noticed more fully hereafter.

September 12th, 12 o'clock M. Complains of weakness and headache. Was not so restless last night as on the previous nights. Fever commenced to remit at 10 A. M., this morning. Bowels have not been moved since his entrance into the hospital. Some tenderness upon pressure of epigastrium. Tongue not so red, cleaner and moister—the dark fur about the root has, in a great measure, cleaned off—tip and edges still much redder than normal. Pulse 70; respiration 26–36, thoracic, irregular, varying with each quarter—every 12 or 15 respirations, draws a long sigh, inflating his thorax to its utmost capacity. After this, his respiration ceases for a few moments. The respiration is indicative of oppression. Temperature of atmosphere, 83° F.; Temp. of hand, 100° 75′; Temp. under tongue, 102° 50′. Has taken 10 grs. sulphate of quinia during the night.

℞. Continue sulphate of quinia, grs. v. every three hours, up to grs. xl. Complains of uneasiness in his bowels. Has a disposition to visit the stool, frequently, without the ability to evacuate the bowels. ℞. Calomel, grs. xii., followed by castor oil in four hours. Continue the sulphate of quinia, regardless of the action of the medicine. Urine, high colored, brownish-red, limpid, without deposit. Sp. gr. 1019; reaction decidedly acid. After 40 hours, a small deposit of vegetable cells, urate of soda and triple phosphate.

ANALYSIS XXXIX.	Urine excreted in 17 hours grains 15285, contained grs.	Calculated am't Urine for 24 hrs., grains 21567 cont'nd grains	1000 parts Urine contained	Urine excreted during the last 24 hours, grs. 20383 contained grains
Water	14475·810	20435·283	947·059	19240·675
Solid Matters	809·190	1131·767	52·941	1142·325
Urea	567·450	800·671	37·124	790·450
Uric Acid	6·000	8·466	0·392	7·450
Ext. and Col'ing Matters.	95·050	134·115	5·182	185·260
Fixed Saline Constituents,	140·280	197·935	9·243	158·605

Amount of Urine excreted during the last 17 hours, grains, 15285
" " " " hourly, " " " " " 899
Calculated amount of Urine for 24 hours, - - " 21567
Actual amount of Urine excreted during last 24 hrs., " 20383
" " " " " hourly, " " " " 849

9 o'clock, P. M. Complains of some pain in his head, and

in the region of the liver; intellect is clear and he is not so restless; tongue moist, still redder than normal; skin moist and relaxed. Pulse 70, regular and soft; respiration 53, irregular and thoracic. Temp. of atmosphere, 83°F.; Temp. of hand, 99°16; Temp. under tongue, 101°5. Urine high colored, reaction decidedly acid. Sp. gr. 1020. Medicine has operated several times, and much urine was passed during the operations. ℞. Sulphate of Quinia, grs. xv.; Snake-root tea, f ʒ xvi. Tablespoonful every four hours.

Sept. 13th, 11 o'clock A. M. Rested well during the night, feels better, but very weak; bowels moved three times during the night; tongue moist, rather pointed, red at tip and edges; tip clean, base coated with light yellow fur, slight tenderness upon pressure of epigastrium. Pulse 52 regular, respiration 48, more regular and gentle than on the previous day. Temp. of atmosphere, 85°F.; Temp. of hand, 97°; Temp. under tongue, 100°. The calomel has evidently been productive of good. The patient however appears to be very weak. The urine has changed greatly in color since yesterday. It is now orange colored and turbid. Sp. gr. 1024; reaction after 15 hours alkaline. ℞. Sulphate of Quinia, grs. xv.; Snake-root tea, f ʒ viij.; brandy, f ʒ viij. Mix. Dose, a tablespoonful every two hours. If the pulse rises and the heat increases, discontinue the brandy.

6 o'clock P. M. Tongue moist, not so red at tip and edges, slightly coated with white fur. Pulse 60, respiration 26 to 32, more regular, and not so thoracic as formerly, but still irregular, varying with each quarter of a minute; at one quarter indicating 45 to the minute, and perhaps at the next quarter it will indicate only 20. ℞. Continue Sulphate of Quinia, Brandy, and Snake-root tea; tablespoonful every three hours; urine orange colored. Sp. gr. 1022; reaction alkaline after standing 15 hours.

Sept. 14th, 1 o'clock, P. M. Much better. Bowels were moved three times during the night. Pulse 58, respiration 28; no tenderness upon pressure of epigastrium; tongue normal, no tenderness upon pressure of the epigastrium. Temp. of atmosphere, 87°F.; Temp. of hand, 99°.; Temp. under tongue, 102°; urine orange colored; reaction alkaline in 12 hours; in 24 hours had thrown down a copious deposit of crystals of triple phosphate, and urate of soda. The deposit of urate of soda, greatly exceeded in amount that of the triple phosphate. Sp. gr. 1025.

Amount of Urine excreted during the last 19 hours,						grains,	15375
"	"	"	"	hourly,	"	"	809
Calculated amount of Urine for 24 hours,						"	19418

ANALYSIS XL.	Grs. 15375 Urine excreted during 19 hrs. contained grains	Grs. 19418 calculat'd for 24 hours contained grains	1000 parts Urine contained
Urea	538·350	679·926	35·054
Uric Acid	8·550	10·798	0·556
Fixed Saline Constituents	35·840	45·288	2·390

September 15th, 10 o'clock A. M. Continues to improve; tongue moist, and normal in appearance; skin cool, relaxed and moist. Pulse 50, full and regular; respiration 24, regular and gentle. Temperature of atmosphere, 84° F.; Temp of hand, 94° 5′; Temp. under tongue, 99°. ℞. Quassia and soda. Continue snake-root tea and sulph. of quinia, table-spoonful every four hours. Urine, deep orange color—after standing 20 hours, let fall a deposit of urate of soda and triple phosphate. Specific gravity 1016·5.

Amount of Urine passed during the last 20 hours, grains, 6607
" " " " hourly, " " " " " 330
Calculated amount of Urine for 24 hours, - - " 8038

ANALYSIS XLI.	Grs. 6607 Urine excreted during 20 hrs. contained grains	Grs. 8038 Urine calculated for 24 hours, contained grains	1000 parts Urine contained
Water	6230·091	8585.710	942·953
Solid Matters	376·909	452·290	57·047
Urea	222·658	267·189	38·169
Uric Acid	4·225	5·070	0·639
Ext. and Col'ing Matters.	123·322	147·986	14·100
Fixed Saline Constituents,	26 504	31·805	4·027

When this analysis is compared with the former analyses, it is evident that the reduction of the force and frequency of the circulation and respiration, the reduction of the temperature, and the relaxation of the skin, was attended by a diminution of the urea.

7 o'clock P. M. Pulse 47; respiration 27. Temperature of atmosphere, 87° F.; Temp. of hand, 96°; Temp. under tongue, 99°. Skin moist, relaxed, cool, perspiration. Urine, orange colored; sp. gr. 1018·2; after standing 15 hours, let fall a heavy light-yellow deposit of urate of soda and ammonia, and numerous well formed prismatic crystals of triple phosphate.

Amount of Urine passed during the last 9 hours, grains, 5121
" " " " hourly, - - - " 569
Calculated amount for 24 hours, - - - " 13652

ANALYSIS XLII.	Grs. 5121 Urine excreted during 9 hrs., containedgrains	Grs. 13652 Urine calculated for 24 hours, contained grains	1000 parts Urine contained
Water	4946·350	13186·384	965·854
Solid Matters	174·650	465·616	34·146
Urea	52·622	140·291	10·277
Uric Acid	6·250	16·662	1·220
Ext. and Col'ing Matters.	94·750	252·035	18·484
Fixed Saline Constituents,	20·815	55·492	4·065

September 16th, 12 o'clock M. Pulse 46; respiration 20 to 26, irregular. Urine, orange colored; specific gravity 1022·2. Temperature of atmosphere, 87° F.; Temp. of hand, 97°; Temp. under tongue, 99°. After standing 12 hours, let fall a light-yellow deposit of octohedral crystals of the oxalate of lime, globular crystals of the urate of soda, and a few prismatic crystals of triple phosphate.

Amount of Urine excreted during the last 17 hours,	grains,	4599
" " " " hourly,	"	270
Calculated amount of Urine for 24 hours, - -	"	6490
Actual amount of Urine excreted during the last 24 hrs.		9720
" " " " hourly,	"	405

ANALYSIS XLIII.	Grs. 4599 of Urine excreted during 17 hrs. contained grains	Grs. 6490 of Urine calculated for 24 hrs. contained grs.	1000 parts Urine contained	Grs. 9720 of Urine excreted during last 24 hours contained grains
Water	4292·402	6057·391	933·334	9238·752
Solid Matters	306·598	432·609	66.666	481·248
Urea	150·592	212·486	32·744	203·214
Uric Acid	2·700	3·798	0·537	8·950
Ext. and Col'ing Matters,	120·000	169·200	26·075	214·750
Fixed Saline Constituents,	32·994	46·554	7·160	53·809

8 o'clock P. M. Pulse 47; respiration 28. Temperature of atmosphere, 87° 5′ F.; Temp. of hand, 95° 9′; Temp. under tongue, 99°.

Amount of Urine passed during last 8 hours, -	grains,	4080
" " " " hourly, " " " -	"	510
Calculated amount of Urine for 24 hours, - -	"	12240

After standing 12 hours, the urine threw down a heavy light-yellow deposit of urate of soda and triple phosphate.

September 17th, 11 o'clock A. M. Pulse 44; respiration 24. Temperature of atmosphere, 84° 5′ F.; Temp. of hand, 96°; Temp. under tongue, 99°. Color of urine, a shade higher than normal. Sp. gr. 1018. Reaction alkaline in 10 hours. Light yellow deposit of urate of soda and triple phosphate.

Amount of Urine excreted in the last 15 hours,	grains,	8712
" " " " hourly, " " "	"	514
Calculated amount of Urine for 15 hours, - -	"	13940

ANALYSIS XLIV.	Grs. 8712 Urine excreted during 15 hrs. contained grains	Grs. 13940 Urine calculated for 24 hours, contained grains	1000 parts Urine contained
Water	8139·466	13023·945	934·286
Solid Matters	572·534	916·055	65·714
Urea	123·675	197·880	14·200
Uric Acid	5·695	9·112	0·653
Ext. and Col'ing Matters,	281·067	449·707	32·224
Fixed Saline Constituents,	161·797	258·876	18·571

September 18th, 12 o'clock M. Pulse 44; respiration 24. Temperature of atmosphere, 86° F.; Temp. of hand, 96° 25′; Temp. under tongue, 99°.

Amount of Urine passed during the last 24 hours, grains, 15903
" " " " hourly, " " " " " 662

Uric acid in grs. 15903 of Urine of 24 hours, grains, 35·650
Uric acid in 1000 parts of Urine, - - " 2·241

Urine, normal in color. After standing 8 hours, reaction alkaline, with a heavy deposit of urate of soda and triple phosphate. The increase of the uric acid has attended the convalescence. This fact proves that the action of the sulphate of quinia, in arresting intermittent fever, is not due to its power of diminishing the amount of uric acid.

September 19th, 12 o'clock M. Pulse 44; respiration 24. Urine, normal in color; deposit, after standing, triple phosphate. Temperature of atmosphere, 88° 5′ F.; Temp. of hand, 97°; Temp. under tongue, 99°.

Amount of Urine excreted during the last 24 hours, grains, 24240
" " " " hourly, - - - " 1010

September 20th, 12 M. Specific gravity 1010.

Amount of Urine passed during the last 24 hours, grains, 32320
" " " " hourly " " " " " 1346

September 22nd. Specific gravity 1008.

Amount of Urine passed during the last 24 hours, grains, 23300
" " " " hourly, " " " " " 929

Pulse 44; Respiration 22. Temperature of atmosphere, 84°F.; Temp. of hand, 97° 8′; Temp. under tongue, 99° 12′.

This patient is now able to walk about the hospital yard, but is pale, anæmic, and very weak.

Examination of Blood, No. IV.—Blood coagulated slowly; clot firm. During coagulation the blood-corpuscles settled, and left above a transparent clot, about 1-8th of an inch in depth, and of a light-yellow color. Color of the serum, light yellow. Sp. gr. of blood 1042. Sp. gr. of serum 1022·5.

Water,		Solid Matters.	
In 1000 parts of Blood,	831·294	In 1000 parts of Blood,	168·706
" " Serum,	927·853	" " Serum,	72·147
(1) " " Liq. Sang.	924·664	(1) " " Liq. Sang.	75·336
(2) " " " "	887·265	(2) " " " "	112·735
		Serum of 1000 pts. Blood,	64·464

FIXED SALINE CONSTITUENTS.

In 1000 parts of Blood,		4·370
" " Serum,		3·288
(1) " " Liquor Sanguinis,		3·299
(2) " " " "		4·885
" " Solid Matters of Blood,		25·906
" " " " " Serum,		45·576
(2) " " " " " Liq. Sanguinis,		37·390
" " " " " Blood Corpuscles,		14·047
" " Moist Blood Corpuscles,		3·511
In Blood Corpuscles of 1000 parts of Blood,		1·432
" Serum of 1000 parts of Blood,		2·938

1000 PARTS OF BLOOD CONTAINED,

Water,			831·294
Dried Blood Corpuscles,	101·941	Dried Organic Residue,	100·409
		Fixed Saline Constituents,	1·432
Fibrin,			2·301
Albumen, Extractive and Coloring Matters,	64·464	Dried Organic Residue,	61·500
		Fixed Saline Constituents,	2·938

1000 PARTS OF BLOOD CONTAINED,

Moist Blood Corpuscles,	407.764	Water,	306·823
		Dried Organic Residue,	100·409
		Fixed Saline Constituents,	1·432
Liquor Sanguinis,	592·236	Water,	525·471
		Dried Organic Residue,	61·500
		Fixed Saline Constituents,	2·301
		Fibrin,	2·938

1000 PARTS OF MOIST BLOOD CORPUSCLES CONTAINED,

Water,	750·000
Dried Organic Residue,	246·468
Fixed Saline Constituents,	3·511

(1) 1000 PARTS OF LIQUOR SANGUINIS CONTAINED,

Water,	924·664
Albumen, Extractive and Coloring Matters,	68·858
Fixed Saline Constituents,	3·289
Fibrin,	3·189

(2) 1000 PARTS OF LIQUOR SANGUINIS CONTAINED,

Water,	887·265
Albumen, Extractive and Coloring Matters,	103·880
Fixed Saline Constituents,	3·885
Fibrin,	4·945

This analysis shows that the dried organic residue, and especially the fixed saline constituents, of the colored blood corpuscles, have diminished. The moist blood corpuscles are less than normal by 100 parts in the 1000 parts of blood. The fixed saline constituents are less than one-half the normal amount.

The patient recovered sufficient strength to walk about the hospital grounds. His complexion continued anæmic and his forces were feeble and did not increase, notwithstanding the administration of tonics and iron. He complained continually of a severe pain in his head. Cut cups over the temples and back of the neck; cold applications and internal remedies failed to afford any relief.

On the 4th of October, he was taken with a chill followed by high fever. The chill came on at 1 o'clock M., and has returned daily at this hour.

October 6th, 12 o'clock M. The chill has been on one hour, and the circulation of the capillaries is becoming equalized and the temperature of the extremities is rising. Pulse 110, feebler than after complete reaction, but stronger than during the lowest depression of the cold stage. Respiration rapid, thoracic panting, 45–50; muscles trembling violently. It was with the greatest difficulty that the bulb of the thermometer could be held under the tongue with the lips closed around, on account of the violence of the inspirations and expirations. The air was drawn into the lungs and expelled with great violence.

The patient resembled an over-heated man after violent exertion in hot weather, panting for breath. Temp. of atmosphere, 70°F.; Temp. of hand, 97°.; Temp. under tongue, 104°. The bulb of the thermometer under the tongue excited vomiting. After vomiting the shaking of the muscles ceased, and the violent respiration became calmer and more regular. This attack yielded to sulphate of quinia, and the recurrence of the chill was prevented by the administration of arsenic.

The occurrence of intermittent fever after an attack of remittent fever, was due in this case to one or both of two causes. The malarial poison may not have been completely broken up and removed during the attack of remittent fever, or a fresh dose of the malarial poison may have been received subsequently to the complete elimination of the disturbing element.

Both these causes may have acted simultaneously. The hospital is situated in a malarious district, and a dose of the poison might have been received at any time.

The annexed table will give a condensed view of the most important phenomena. (See next page.)

A comparison of the phenomena of this case of remittent fever, with those of health and intermittent fever, establish the following conclusions:

(1). The secretions of the mouth are more completely checked, and the tongue is dryer, redder, and rougher to the feeling in remittent, than in intermittent fever.

(2). The glowing tongue of remittent fever, is not an index of inflammation. It indicates a want of circulation in the capilla-

Month	Day of Month	Hour of Day	MEDICINES.	State of Tongue.	State of Skin.	Pulse	Respiration	Temperature of Atmosphere	Temperature of Hand	Temperature under Tongue	Amount of Urine excreted during	Hours	Amount of Urine excreted hourly	Specific Gravity of Urine	Water	Solid Matters	Urea	Uric Acid	Extractive and Colouring Matters	Fixed Saline Constituents	Calculated Amount of Urine for 24 hours	Calculated Amount of Water for 24 hours	Calculated Amount of Sold Matters for 24 hours	Calculated Amount of Urea for 24 hours	Calculated Amount of Uric Acid for 24 hours	Calculated Am't Ext'e & Col. Matters for 24 hours	Calculated Am't Fixed Saline Constituents for 24 hours
											GRS.		GRS.		GRS.	GRS.	GRS.	GRS.	GRS.	GRS.	GRS.	GRS.	GRS.	GRS	GRS.	GRS.	GRS.
Sept'r	10	7 P.M.		Dry, red, superior portion coated with black fur.	Dry, hot.	90	48	80°F.	103°F.	105°F.																	
"	11	11 A.M.	Sulph. Quinia grs xx. Soda Powd'r.	Dry, red & glaz'd—feels rough.	Dry, harsh, hot.	88	34—40	82	103°25	105	8160	16	510	1020	7618	541	349	3.20	168	20	12240	11428	811	523	4.80	253	80
"	11	7P.M.	Soda Pow'rs, Sul. Quinia grs. x.	Tip clean, red—supr. port'n coated with dark fur.	Moist, hot.	90	40—44	81	104	104°8	5098	8	637	1019.6	4764	333	223	1.43	90	18	15294	14294	999	669	4.35	270	54
						..	.....	.....	.....	.....	13258	24	552	1019.8	12383	874	572	4.65	258	38	.....	.....	.....	.....	.....	.....	.....
"	12	12 M.	Calomel grs. xii., Cas. Oil in 4 hrs. S. Quinia grs. xl.	Cleaner & moist, still red at tip & edges.	Moist.	70	26—36	83	100°75	102°5	15285	17	899	1019	14475	899	567	6.00	95	140	21567	20435	1131	800	8.46	134	197
						..	.....	.....	.....	.....	20383	24	849	1019.3	19240	1142	790	7.45	185	158	.....	.....	.....	.....	.....	.....	.....
"	12	9P.M.	Sulp. Quinia grs xv. Snakeroot T. ℥xvi. tablesp'ful every 4 hrs.	Moist, still redder than normal.	.....	70	53	83	99°16	101°5	.....	..	....	1020	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
"	13	11 A.M.	Brandy, Sulph. Quinia & Snakeroot Tea.	do. do.	.....	52	48	85	97	100	.....	..	....	1024	.....	....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
"	13	6P.M.	do. do.	Slightly coated with yellow fur.	.....	60	26—32	.....	.....	.....	.....	..	....	1022	.....	....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
"	14	1P.M.	do. do.	Normal.	Normal.	58	28	87	99	102	15375	19	809	1025	.....	....	538	8.55	....	35	.....	.....	....	679	10.79	....	45
"	15	10A.M.	Quassia & Soda. Snakeroot Tea.	" "	" "	50	24	84	94°5	99	6607	20	330	1016.5	6230	376	222	4.22	123	26	8038	8584	452	267	5.07	147	31
"	15	7P.M.	" " "	" "	" "	47	27	87	96	99	5121	9	569	1018.2	4946	174	52	6.25	94	20	18652	13186	465	140	16.66	252	55
"	16	12 M.	" " "	" "	" "	46	20—26	87	97	99	4599	17	270	1022.2	4292	306	150	2.70	120	32	6490	6057	432	212	3.79	169	46
"	16	"	.....	.....	.....	..	.....	.....	.....	.....	9720	24	405	1020	9238	481	203	8.95	214	53	.....	.....	.....	.....	.....	.....	.....
"	16	8P.M.	" " "	" "	" "	47	28	87	95°9	99	4080	8	510	.....	.....	.....	.....	.....	.....	.....	12240	.....	.....	.....	.....	.....	.....
"	17	11A.M.	" " "	" "	" "	44	24	84°5'	96	99	8712	15	514	1018	8139	572	123	5.69	281	161	13940	13023	916	197	9.11	449	258
"	18	12 M.	.....	.....	.....	44	24	86	96°25	99	15903	24	662	.....	.....	.....	.....	35.65	.....	.....	.....	.....	.....	.....	.....	.....	.....
"	19	12 M.	.....	.....	.....	44	24	88°5'	97	99	24240	24	1010	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
"	20	12 M.	.....	.....	.....	..	.....	.....	.....	.....	32320	24	1346	1010	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
"	22	12 M.	.....	.....	.....	44	22	84	97°8	99°12	23300	24	929	1008	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

ries of the superficial parts of the tongue. The secretions of the mucous membrane have been checked; the moisture is evaporated by the elevated temperature; the circulation in the superficial capillaries, is thus retarded, and they become filled with colored blood corpuscles, which give the bright color to the tongue.

The question arises, what checked the secretions of the mucous membrane of the mouth?

The consideration of the chemical alterations of many elements and secretions enter into the solution of this question. We will mention only five and acknowledge that this is nothing but a statement of the manner in which the changes may take place, and not a direct absolute answer to the question.

1. The cells of the mucous membrane. 2. The capilliaries of the mucous membrane. 3. The serum of the blood. 4. The blood corpuscles. 5. The nervous system presiding over the elaboration of the blood, the circulation of the blood in the capillaries, and the formation of the secretions.

We have before demonstrated that the malarial poison, produces profound chemical and physical alterations in the colored blood corpuscles, destroying many, and in all inducing chemical changes which result in a great diminution of the fixed saline constituents.

The blood corpuscles, collectively form an immense gland, which elaborates the materials of the serum into compounds for the nervous and muscular system, and probably for the various secretions. Whatever therefore destroys or alters the chemical changes of the colored blood corpuscles, must produce corresponding changes, in the secretions and excretions, and in the structure and action of the nervous system.

There is a portion of the nervous system which presides over the circulation and chemical changes in the capillaries and thus over the secretions. The malarial poison may act upon the nervous system directly, or indirectly, by the changes induced in the blood corpuscles and the constituents of the serum, or it may act upon the nervous system in both ways combined at the same time. Whatever acts directly or indirectly upon the nervous system, will produce corresponding changes in the secretions, excretions and nutrition.

3. In this case we cast aside the advice of many of the older writers and administered the sulphate of quinia freely in the outset of the disease, regardless of the glowing parched tongue, tenderness upon presure of the epigastrium, and severe headache and high fever, and rapid bounding pulse, thoracic respiration, and hot dry skin. Under the action of the sulphate of quinia, the dry red tongue became moist, clear and pale; the circulation and respiration abated in force and frequency, the dry harsh

skin was covered with perspiration, and all the symptoms subsided. The advantage of this mode of treatment will be illustrated subsequently.

4. The increase of the action of the pulse and respiration was attended by an elevation of the temperature. The elevation of the temperature corresponded more accurately with the increased action of the circulatory and respiratory systems in intermittent fever, than in this case of remittent fever. That is., the pulse and respiration were more accelerated in remittent fever, whilst the temperature did not rise higher than that of intermittent fever.

5. The urea was increased during the active stages of the fever, not only above the normal standard during rest and a deprivation of food, but also above the standard of intermittent fever.

6. The increased temperature and correspondingly increased chemical changes, were attended by an increase of the urea. When the temperature fell below the normal standard, in both intermittent and remittent fever, the urea was decreased in amount.

7. The uric acid was diminished in the active stages of intermittent and remittent fevers,and increased as the diseases subsided.

8. The changes in the acidity of the urine in this case, resembled in all respects, those during intermittent fever.

9. The coloring and extractive matters, were diminished during the active stages, and increased during the subsidence of the fever.

CASE XXV. Irish seaman: aged 21; height 5 feet 4 inches; weight 125 lbs; brown hair, brown eyes, sallow complexion. Has been in Savannah three weeks, and has been sick three days. This is his first trip to Savannah, during the summer season.

October 12th, 12 M. Complains of great weakness and pain in his back and bones; says that he has had no chill and no fever during the three days of indisposition, previous to his entrance into the hospital. Pulse 80, full. ℞. Sulph. of quinia grs. v., every three hours, up to grs. xv.

October 13th, 12 M. Did not rest well last night; complains of pain in his head and bones. Had a chill two hours ago. Tongue clean, red, dry, and rough; papillæ enlarged. Some tenderness of epigastrium. Skin hot and dry. Pulse 118; respiration 24–26, irregular, thoracic. ℞. Calomel, grs. x., castor oil in four hours. ℞. Soda powders during fever. ℞. After fever remits, give sulphate of quinia, grs. v., every three hours, up to grs. xx.

October 14th, 12 M. Medicine acted twice; tongue clean and very red; patient is not so restless; complains of great weakness.

Has taken xx grs. of sulphate of quinia; temperature of skin normal. ℞. Brandy, f ℥ viij.; sulph. of quinia, grs. xv.; snake-root tea, f ℥ viij. Mix. Tablespoonful every four hours.

October 15th, 12 M. Had an increase of fever yesterday afternoon, which was accompanied with severe pain in his head and bones. Now he is restless and nervous; countenance uneasy, anxious. All his motions are indicative of restless, uneasy, anxious, feeling; complains of great thirst; tongue as red as scarlet. At 9 o'clock A. M., this morning, it was dry and glazed; at the present time, (three hours afterwards), it is a little moister and softer; lips dry, red and rough. Epigastrium very tender upon pressure; trunk and head very hot, extremities only moderately warm. Complains of pain in the small of the back, and in the knees and bones of his legs. Pulse 106, feeble; respiration 30–40, irregular, labored, thoracic, panting. Temp. of atmosphere, 74°F; Temp. of hand 101°; Temp. in axilla, 105°. The temperature under the tongue could not be taken on account of his restlessness. Reaction of saliva acid. There is a great want of co-ordination between the circulation, respiration, and temperature of the extremities. The capillary circulation and chemical changes are impeded. ℞. 4 cut cups to epigastrium; 4 cut cups over the lumbar regions and spine. ℞. Mustard to extremities. ℞. Soda powders. Urine high colored, of a deep brownish red color. Sp. Gr. 1028; reaction decidedly acid.

Amount of Urine passed during the last 30 hours, grains, 15430
" " " " " " " 24 " " 12344
" " " " hourly, " " " " " 514

ANALYSIS XLV.	Grs. 15430 of Urine passed during 30 hrs. contained grains	Grs. 12344 of Urine passed during 24 hrs. contained grains	1000 parts Urine contained
Urea	727·500	582·000	47·178
Uric Acid	9·300	7·440	0·603
Fixed Saline Constituents,	75·000	60·000	4·863

7½ o'clock, P. M. Lies in a stupor, muttering to himself, and is with great difficulty aroused. When aroused, answers incoherently, and says that he feels very well. Temperature of extremities below the normal standard—cool; temperature of head and trunk normal; tongue of a bright red color; great tenderness of epigastrium, pressure here arouses him more quickly than violent shaking; pulse 100, feeble; respiration 32. ℞. Two cut cups to each temple. ℞. Apply a blister over the epigastrium 6 inches by 4 inches, and another to the back of the neck 4 inches by 5. ℞. Apply mustard to extremities. ℞. brandy and snake-root tea, and spirits of mindererus, f ℥ ss. of each alternately every half hour, until reaction is established. ℞. Sulphate of quinia, grs. v., every three hours up to grs. xlv.

Amount of Urine passed during the last 7½ hours, grains, 4072
" " " " hourly, " " " " " 543
Calculated amount of Urine for 24 hours, - - " 13030

Urine high colored and strongly acid in reaction. After standing 50 hours there was no deposit, and the reaction was still decidedly acid. Sp. gr. 1018.

ANALYSIS XLVI.	Grs. 4072 of Urine passed during 7½ hrs. contained grains	Grs. 13030 Urine calculated for 24 hours, contained grains	1000 parts Urine contained
Urea.....	151·320	483·224	37·161
Uric Acid.....	1·888	6·036	0·461

October 16th, 9 A. M. Much better, intellect clear. The cups, blisters, and stimulants, and sulphate of quinia have restored the capilliary circulation to its normal state.

12½ o'clock P. M. Continues to improve. Urine high colored, of a deep orange red; reaction strongly acid, after standing 15 hours, a slight deposit of mucous corpuscles, and after 100 hours a small light yellow deposit of mucous corpuscles, urate of ammonia and vegetable cells. The presence of the mucous corpuscles in the urine is due to the absorption and action of the cantharidin upon the mucous membrane of the genito-urinary apparatus. In several severe cases of remittent fever, I have discovered after the action of blisters, numerous spermatozoa in the urine. Sp. gr. of urine, 1021.

ANALYSIS XLVII.	Grs. 11231 of Urine passed during last 16 hrs. contained grains	Grs. 16746 of Urine calculated for 24 hrs. contained grs.	1000 parts Urine contained	Grs. 15303 of Urine excreted during 24 hrs. contained grains
Urea.....	357·445	535·667	31·826	508·760
Uric Acid.....	5·500	8·250	0·489	7·380
Fixed Saline Constituents,	53·900	80·850	4·799	64·680

Amount of Urine passed during the last 16 hours, grains, 11231
" " " " hourly, " " " " " 702
Calculated amount of Urine for 24 hours, " 16746
Actual am't of Urine excreted during the last 24 hrs., " 15303
" " " " " hourly, " " " " " 637

3 o'clock, P. M. Skin dry but soft. Has taken xlv grs. of sulphate of quinia. This has not as yet exerted its characteristic effects upon the skin; tongue red, but moist and soft; blisters have drawn well—serum from blistered surfaces of a golden color; patient complains of difficulty in passing his urine. This is due to the absorption and action upon the mucous membrane of the bladder and urethra, of the cantharadin absorbed from the blistered surfaces. Pulse 84; respiration 16; Temp. of atmosphere, 69°5′F.; Temp. of hand, 99°; Temp. under tongue,

99°5′. ℞. Sulphate of quinia, grs. v., every three hours up to grs. xv. ℞. Continue spirit of mindererus and brandy, and snake-root tea, f ʒ ss of each alternately, every two hours. Diet. mutton soup and arrow root.

October 17th, 12 M. Continues to improve; tongue red, but clean and soft. Pulse 70; respiration 16. Temperature of atmosphere, 67°F.; Temp. of hand, 97°33; Temp. under tongue, 98°5. Color of urine deep red, reaction decidedly acid. Sp. gr. 1022. Reaction of saliva strongly acid.

Amount of Urine passed during the last 24 hours, grains, 8176
" " " " hourly, - - - " 382

ANALYSIS XLVIII.	Grs. 8176 of Urine excreted during 24 hrs. cont'nd grs.	1000 parts of Urine contained
Urea.....	185·240	22·578
Uric Acid.....	4·400	0·538
Fixed Saline Constituents,	40·000	4·892

The reduction of the temperature and of the action of the respiratory and circulatory system, has been attended by a corresponding diminution of the constituents of the urine.

October 18th. Continues to improve, "feels quite well, with the exception of great weakness". His appetite has returned; tongue clean, moist and soft, and not so red. Pulse 72; respiration 18. ℞. Continue brandy and snake-root tea. Color of urine orange, much lighter; reaction in 20 hours decidedly alkaline. Sp. gr. 1020. Heavy light yellow deposit after standing 20 hours.

Amount of Urine passed during the last 24 hours, grains, 20400
" " " " hourly, " " " " " 850

Diet, soft boiled eggs, milk punch, arrow-root, and mutton soup.

October 19th, 12 M. Skin, pulse and respiration normal. Urine orange colored. Sp. gr. 1020; reaction alkaline in 12 hours; heavy light yellow deposit in 20 hours.

Amount of Urine excreted during the last 24 hours, grains, 15300
" " " " hourly, " " " " " 637

October 20th.

Amount of Urine passed during the last 24 hours, grains, 17374
" " " excreted hourly, - - - " 724

ANALYSIS XLIX.	Grs. 17374 of Urine passed during 24 hrs. cont'nd grs.	1000 parts of Urine contained
Uric Acid.....	11·730	0·675
Fixed Saline Constituents,	93·500	5·381

Specific gravity of urine 1022; reaction alkaline in 12 hours—orange color. After standing 24 hours, a light yellow deposit of triple phosphate and urate of soda was thrown down.

October 21st, 9 A. M. The patient is dressed and has been walking about the hospital grounds. His pale sallow complexion and feeble gait, show the effects of malarial fever. Urine of a light orange color, only a shade darker than normal. Sp. gr. 1024. Reaction just after its deposition, acid—in 10 hours afterwards alkaline. This change gave evidence of the formation of ammonia, and was attended by the formation of crystals, presenting, when the urine was held in the sun, a sparkling appearance, like particles of silver. Under the microscope, these crystals were found to be well formed prismatic crystals of triple phosphate. The microscope also revealed a few crystals of the urates of soda and ammonia.

ANALYSIS I.	Grs. 9234 Urine excreted during 12 hrs. contained grains	Grs. 18468 Urine calculated for 24 hours, contained grains	1000 parts Urine contained
Urea.....	229·599	458·198	25·128
Uric Acid.....	7·740	15·480	0·935
Fixed Saline Constituents,	91·800	183·600	9·941

Amount of Urine passed during 12 hours, - - grains, 9234
" " " " hourly, - - - - - - " 769
Calculated amount of Urine for 24 hours, - - " 18468

This case confirms all the conclusions which were drawn from the preceding case of remittent fever.

CASE XXVI. Irish seaman, aged 38; weight 160 lbs; height 5 feet 6 inches; stout muscular man: first trip to Savannah. Has been in Savannah 10 days, during which time he has worked on a ship lying along the shore of the river, and has slept on Bay-street at night.

October 14th, 2 P. M. Was taken sick four days ago with pain in his head and in all his bones, accompanied with fever, which has continued unabated up to the present time. Has had no chill. Took a dose of calomel three days ago, which acted freely. Now his face is much flushed; skin hot and dry; head very hot; complains greatly of pain in his head; eyes look heavy and stupid; tongue bright-red and dry; voice hoarse and gutteral; says that he has been vomiting, and can retain nothing upon his stomach. ℞. Cut cups to each temple, and two to back of neck, and four over the region of the stomach.

If the cut cups do not relieve the vomiting, administer a tablespoonful of equal parts of milk, lime water, and the aqueous solution of the acetate of morphia.

October 15th, 11 A. M. Says that he feels better; the cut cups over the temples and back of neck relieved the pain in his head, and the cut cups over the region of the stomach checked the vomiting. Face is not so much flushed; tongue still very

red, dry and rough; no tenderness upon pressure of epigastrium, although the state of his tongue would lead us to look for it; skin soft and not so hot. This morning at 3 A. M., the fever remitted with a perspiration. Pulse 76; respiration 20. Has taken xxvi grs. of sulphate of quinia. ℞. Neutral mixture; drink *ad-libitum.*

8 o'clock P. M. Has been vomiting this evening. This was arrested by milk and lime-water, and acetate of morphia. Tip of tongue for three-fourths of an inch, clean, dry, glazed, and of a brilliant red color—the remainder of the tongue is coated with brownish-yellow fur, which is dry and harsh to the feeling; face flushed and hot; skin, upon all parts of the body, hot, pungent and dry; no tenderness upon pressure of epigastrium. The calomel has acted several times, and is still acting. Pulse 94; respiration 26. ℞. Soda powders. Urine, high colored, like new Madeira wine.

October 16th, 1 o'clock P. M. Did not rest during the night; was tossing about, and getting up out of the bed every few moments, and was and is now tormented by unquenchable thirst; appears to be completely exhausted. Tip of tongue clean, dry, scarlet-colored, glazed, shining—posterior portion (base) of tongue coated with brown and black fur, dry, harsh, and as rough as sand-paper. The under surface of the tongue is dry, glazed and shining. There is no more moisture in his tongue, and in the walls of the mouth, than if they were made of glass. Skin hot, dry, and harsh to the feeling.

The temperature under the tongue, cannot be taken, on account of the dry condition of the lips and tongue. Bowels are loose—stools watery and yellow; no pain upon pressure of epigastrium. Complains of no pain anywhere. There is a great tendency to stupor.

Although his tongue is glowing red, and his face is flushed, and there is an inclination to stupor, still I will administer sulphate of quinia and stimulants, because he is exhausted, and the appearance of the mucous membrane of his mouth and tongue is indicative, not of inflammation, but of derangement of the capillary circulation, and of alterations in the structure of the nervous system and blood.

℞. Brandy, f ℥ viij.; Snake-root tea, f ℥ viij.; Sulphate of quinia, grs. xv. Mix. f ℥ j. every hour. ℞. Spirit of mindererus, f ℥ j. every hour. ℞. Mustards to extremities. ℞. Sulphate of quinia, grs. v.; Camphor, grs. ij. Mix. Every three hours. ℞. Soda powders.

Amount of Urine passed during the last 17 hours,	grains,	10210
" " " hourly, " " " "	"	600
Calculated amount of Urine for 24 hours, - -	"	14406

Sp. gr. 1020; reaction decidedly acid; urine high colored, like

new Madeira wine. No deposit after 30 hours; after 60 hours, a slight deposit of mucous corpuscles and triple phosphate. Crystals of nitrate of urea, silvery and well formed. Hydrochloric acid showed the presence of coloring matters in large amount

ANALYSIS LI.	Grs. 10210 Urine excreted during 17 hrs. contained grains	Grs. 14406 Urine calculated for 24 hours, contained grains	1000 parts Urine contained
Urea.....	320·980	452·581	32·305
Uric Acid.....	0·200	0·382	0·019
Fixed Saline Constituents,	30·000	40·330	2·938

Oct. 17th, 11 o'clock A. M. Much better. Tip of tongue clean—superior portion coated with fur; tongue moister, softer, and not so red as on yesterday; face much less flushed; the burning thirst has almost entirely disappeared; has no pain anywhere, and says that he has an appetite; no tenderness of epigastrium. Has taken grs. xxx. of the sulphate of quinia since 1 o'clock P. M., October 16th. Pulse 68; respiration 18. Pulse much fuller—respiration more regular and soft. Temperature of atmosphere, 68° F.; Temp. of hand, 98°; Temp. under tongue, 99° 5′.

Here we see, that under the action of the sulphate of quinia and stimulants, his respiration has become regular; his pulse slower and fuller; his burning thirst diminished; his glowing tongue and flushed face, paler; his parched mouth, moister; his intellect brighter; his exhausted forces more active; and all the secretions and functions more regular. Urine, high colored. Decided acid reaction. Sp. gr. 1022. No deposit after standing 30 hours. After 80 hours, a small light-yellow deposit of triple phosphate and urate of soda.

Amount of Urine excreted during the last 24 hours, grains, 12264
" " " " hourly, " " " " " .511

ANALYSIS LII.	Grs. 12264 Urine passed during 24 hrs. cont'nd grs.	1000 parts of Urine contained
Urea.....	315·250	30·846
Uric Acid.....	5·200	0·440
Fixed Saline Constituents.	34·800	2·846

℞. Continue camphor and sulphate of quinia, and brandy and snake-root tea. Diet, milk punch, wine whey, arrow-root, and mutton soup.

October 18th, 12 o'clock M. Rested well during the night—had no fever, and his skin was in a good perspiration. The great thirst has entirely disappeared. Tongue still redder than normal, but moist and soft, and the yellow fur coating the posterior portion is breaking up and cleaning off; skin moist, and normal in temperature and feeling. Pulse and respiration nor-

mal. Dressed himself, and has been walking in the ward. Urine of a deep orange color, several shades lighter than that voided yesterday. Sp. gr. 1019. Reaction slightly acid.

Amount of Urine passed during the last 24 hours, grains, 12737
" " " " hourly, " " " " " 614

℞. Continue brandy and snake-root tea, table-spoonful every three hours. Diet, soft boiled eggs, milk punch, mutton soup, arrow-root and rice.

October 19th. Dressed, and walked about the ward.

October 20th. Walked about one mile into town, says that he feels well; urine orange color. Sp. gr. 1020. After standing 12 hours, a heavy light yellow deposit of triple phosphate and urate of soda. 1000 parts of urine contained uric acid, 0·607. Fixed saline constituents, 3·529.

October 21st. Says that he took a slight cold yesterday during the walk into the city; urine orange color. Sp. gr. 1019.

Amount of Urine passed during the last 17 hours, grains, 13247
" " " " hourly, " " " " " 770
Calculated amount of Urine for 24 hours, - - " 19495

ANALYSIS LIII.	Grs. 13247 Urine excreted during 17 hrs. contained grs.	Grs. 19595 Urine calculated for 24 hours, contained grains	1000 parts of Urine contained
Urea.....	181·568	290·508	12·992
Uric Acid.....	6·110	9·770	0·461
Fixed Saline Constituents.	96·900	154·040	7·199

This patient had no return of fever and was discharged a few days subsequently. This case sustains not only the conclusions, but also the treatment of the two preceding cases of remittent fever.

CASE XXVII. Seaman, native of Scotland; age 21; height 5 feet, 5 inches; weight 154 lbs. This is his first trip to Savannah. Has been in this port three weeks, and during this time, has slept on board ship in the river. Two of the crew from the same ship are now in the hospital with remittent fever.

October 13th, 12 M. Was taken three days ago with a chill and pain in his back, head and all the bones. This was followed by fever. Has fever now. Skin hot and dry; pulse 108 full; respiration 38, thoracic; tongue pointed, red at tip and edges; coated with brownish yellow fur—dry and harsh, rough to the feeling; no tenderness of epigastrium. ℞. Calomel grs. x.; sulphate of quinia, grs. v. Mix. Administer, and follow by castor oil in four hours. The patient must be closely watched during the action of the medicine, and if he appears to be unduly exhausted, apply sinapism and administer stimulants.

9 P. M. Appears stupid, is aroused with difficulty. Tongue

dry and rough; face flushed; skin hot and dry; pulse 100. ℞. Brandy and snake-root tea, tablespoonful every hour. ℞. Sulphate of quinia, grs. v. every three hours, up to grs. xxx.

October 14th, 12 M. Much better; medicine operated freely; tongue soft and moist; pulse not so frequent; skin soft and much cooler; no tenderness upon pressure of epigastrium. Complains of pain in back, in the region of the lumbar vertebræ and cannot bear the slightest touch over the seat of the pain. ℞. Four cut cups over the region of the pain in the back. ℞. Continue brandy and snake-root tea, and sulphate of quinia, tablespoonful every four hours.

October 15th, 12 M. Cut cups relieved the pain in the back. Apex of tongue, for about half of an inch, clean, red and dry; the remainder of the tongue is coated with rough, dry, brownish black and yellow fur. No tenderness of epigastrium; skin hot, dry and pungent; pulse 90; respiration 30. Temperature of atmosphere 74° F.; Temp. of hand, 105°; Temp. under tongue, 106°. Reaction of saliva decidedly acid.

8 o'clock P. M. Face still flushed, and expression of countenance stupid; intellect dull and heavy; skin in a slight moisture; tongue presents the same appearance, only a little moister. The head and trunk are hot, but not pungent. Temperature of extremities above the normal standard, but cooler and not so pungent as at 12 o'clock. Pulse 90; respiration 22–26, irregular. ℞. Sulphate of quinia, grs. v., every three hours, up to grs. xx. Soda powders.

Amount of Urine excreted during the last 8 hours,	grains,	5610
" " " " hourly, " " " "	"	701
Calculated amount of Urine for 24 hours, - ` -	"	16830

ANALYSIS LIV.	Grs. 5610 Urine excreted during 8 hours contained grains	Grs. 16830 Urine calculated for 24 hours, contained grains	1000 parts of Urine contained
Urea.....	125·372	376·047	22·147
Uric Acid...	4·675	14 025	0·833
Fixed Saline Constituents.	29·150	87·450	5·196

This urine, which was excreted during fever, and under the action of sulphate of quinia, differs from the former specimens, excreted under similar circumstances, in that the uric acid was greatly increased. Sp. gr. of urine 1020. Orange colored nitrate of urea, silky, silvery. No deposit after 30 hours; at the expiration of this time the reaction was still acid.

October 16th, 12 o'clock M. Tongue dry and rough; complains of pain in his legs and left side. Countenance is more easy. Urine, high colored, red. Sp. gr. 1020. Reaction acid. After standing 15 hours, a light yellow deposit of triple phosphate, and urates of soda and ammonia.

Amount of Urine passed during the last 16 hours, grains, 11220
" " " " hourly " " " " " 701
Calculated amount of Urine for 24 hours, - - " 16830
Actual amount of Urine passed during the last 24 hrs. " 16830
" " " " " hourly, " " " " " 701

ANALYSIS LV.	Grs. 11220 of Urine excreted during 16 hrs. contained grains	Grs. 16830 of Urine calculated for 24 hrs., contained grains	Grs. 16830 of Urine excreted during 24 hrs., contained grains	1000 parts Urine contained
Urea.....	341·440	512·160	466·812	30·906
Uric Acid.....	4·400	6·600	9·070	0·392

℞. Brandy and snake-root tea, and spirit of mindererus, f ℥j. of each, alternately, every two hours. ℞. Sulph. of quinia, grs. v., every three hours, up to grs. xxxv.

3 o'clock P. M. Tongue moister and softer, tip and edges not so red—posterior portion still coated with brownish-yellow fur. Slight tenderness upon pressure of epigastrium. Pulse 75; respiration 20. Temperature of atmosphere, 70° F.; Temp. of hand, 101°33′; Temp. under tongue, 101°5′. ℞. Continue brandy and snake-root tea, spirit of mindererus and sulph. of quinia.

October 17th, 12 M. Much better; has been dressed and about the ward this morning; tongue soft, moist; the yellow fur is soft and rapidly disappearing; reaction of saliva decidedly acid; pulse 54; respiration 18; Temp. of atmosphere, 68°F.; Temp. of hand, 96°; Temp. under tongue, 99°. Urine much lighter in color, only a shade higher than normal. Sp. gr. 1020.

1000 parts of Urine contained,
Urea, - - - - 20783
Uric Acid, - - - A trace—a few small crystals.
Fixed Saline Constituents, - 2156

The disappearance of the uric acid is, without doubt, due to the action of the sulphate of quinia. This patient continued to improve and was discharged on the following day. This case illustrates, in a striking manner, the beneficial effects of stimulants and large doses of sulphate of quinia in remittent fever. The prompt administration of sulphate of quinia and stimulants, not only cuts short the disease, but also supports the strength of the patient, and he comes through a severe attack with comparatively unimpaired forces.

(To be continued.)

ARTICLE XXI.

Report of Cases in the City Hospital. By W. H. DOUGHTY, M.D., Augusta, Ga.

INTERMITTENT FEVER, ATTENDED WITH A SWELLING OF THE TESTICLES.

J. O., was admitted March 10th, for injuries (fractured ribs) which he had received by a fall upon the deck of a steamboat. When examined, it was found that he also suffered from a swelling of the testicles. He was not sensible of any injury having been inflicted upon them, but thinks that no violence has been done them by the fall, since he is subject, upon exposure, to this peculiar malady. The ordinary mode of management of fractured ribs was pursued, attention being also paid to the swollen organs. In due time, these latter were restored to their natural size, and his condition, otherwise, so much improved that he was permitted to leave the hospital for a short time. He became intoxicated soon after his departure, and lay out that night in the street, exposed to a very damp atmosphere and an exceedingly heavy dew.

April 6th. Returned at 7 o'clock A. M. Was taken with a chill at 10 A. M., which lasted about four hours, and during the continuance of which his testicles became enormously swollen. Having been interrogated concerning his liability to intermittent fever, and whether or not this glandular swelling was a common attendant, he replied, that whenever he had a chill or was much exposed to cold and damp, his testicles almost invariably swelled, the engorgement, at such times, producing excruciating pain. He was visited during the chill; and being struck with this unusual feature in ague and fever, the testicular engorgement was closely watched, in order to ascertain whether or not it would subside with the termination of the paroxysm.

Treatment.—℞. Spts. camphor gtt. xxv.; Chloric ether 3j.; Tr. opii. gtt. x.—to be given occasionally during the cold stage; also, mustard to spine and extremities.

April 7th. Patient in a profuse perspiration; bowels confined; testicles swollen and painful; tongue furred, yellow.

Treatment.—Mercurial cathartic immediately; quinine, 3 grs. every three hours; cold applications to testicles.

April 8th. Patient better; no chill; swelling of the testicles diminished.

Treatment.—Same as yesterday.

April 9th. Swelling of the testicles disappeared; patient up, moving about. Discharged 10th.

Remarks.—Perhaps no principle in pathology is more universally received by the practical part of the profession, than that of a congestion of the organs, which repose in the three great splanchnic cavities of the body, during the cold stage of an intermittent. Indeed, whilst they differ widely among themselves, as to its determining cause or causes—some attributing it to a state of poisoning of the blood, and others to primary lesion of the nervous system, yet they agree, that this cold stage is the result of a sudden retreat of the blood from the surface to the internal organs and structures. No exception to this fact is recognized, for we never read or hear of a congestive determination, to either of the four extremities, unless we regard as such, the rare instances upon record of a concomitant congestion of the genital organs. How far the occasional, perhaps accidental, determination of the vital fluid to these organs, constitutes it an example of an external or peripheral tendency, we are not prepared to say, since, like the arms and legs, in the language of Hunter, they "are not necessary for the existence or support of the individual, but have a reference to something else." The exceeding great rarity of these cases, entitles them to peculiar interest, if for no other reason, than the opportunity which they present of beholding an organ under the congestive influence of an intermittent. The penis, in this case, was unaffected, being entirely relaxed, notwithstanding the violent congestive determination in its immediate vicinity. All of the cases, affecting the genital apparatus, that have come within the scope of my study, have been confined entirely to the penis. The following is from Dr. Dickson,* of Charleston. "We had in our museum, a long while, though now lost, the preparation of a penis, which suffered

* Dickson's Elements of Medicine, page 214.

during a protracted attack of intermittent, the same, or analogous, engorgement, enlargement and induration which usually derange the spleen in ague, being obviously the seat of the congestive determination, familiarly taking place in that viscus. They possess an erectile structure in common. The case occurred in our almshouse, and was witnessed by a large number of physicians, none of whom, I belive, entertained any doubt of its nature." Further on, he states, that a similar case had been reported to him, as having occurred in the state of New York, "in which the same organ was attacked with congestive or vascular turgescence, during the paroxysms." Nothing is said concerning the adjoining organs (testicles) in these cases, but we are justified in the belief, that the determination was confined entirely to the penis. In the case reported, it will be observed, that the patient had just recovered from an attack of orchitis,† and doubtless the predisposition to a recurrence still remained. The history of this case might justify us in laying stress upon secondary influences, in producing such a determination; but in regard to those quoted, we cannot say, since nothing is mentioned as to their previous condition, whether diseased or not. A point of dissimilarity between the reported case and those quoted, exists in the fact, that the state of priapism of the latter, is said to have existed, "during the paroxysm," whilst the testicles in the former, remained swollen for several days, and were subjected to treatment. This dissimilarity becomes reconciled at once, we conceive, by a reference to the difference in the anatomical structure of the two organs and their physiological functions.

PHTHISIS PULMONALIS.

R. N., has been an inmate of this institution since Feb. 8—is about 45 years of age—has been subjected to great hardships, and undergone the numerous privations of poverty: is also addicted to drunkenness and its associate vices. Has been laboring under this disease since 1854. During this time, has had numerous hemorrhages, not, however, very profuse. At present, she evinces all the common symptoms of consumption—viz., cough, purulent expectoration, hectic fever, diarrhœa, etc. The

† There was no venereal infection.

most distressing symptom seems to be a difficulty of breathing, apparently asthmatic in character and referred to the right side.

Physical Examination of the Chest. Heart.—The action and sounds of this organ are natural in their evolutions.

Auscultation of Right Lung.—Broncho-vesicular respiration established throughout the lung—is everywhere prominent, but most so in the infra-scapular and scapular regions. Inspiration high in pitch—tubular and blowing in quality—intense and shortened in duration; also, a sound, as of dry crackling, discovered at the end of inspiration in the scapular region and at its apex. Expiration high in pitch, being remarkably loud, bronchial in quality, and longer than the act of inspiration. The natural rhythm of the respiratory acts destroyed, being very irregular.

Left Lung.—A modified (broncho-vesicular) respiration exists only in the apex of this lung: the vesicular respiration in the middle and lower lobes seems to be simply exaggerated, without noted deviations as to quality.

Auscultation of the Voice. Right Lung.—Bronchophony very prominent at the point of the scapula, and radiating in a more or less marked degree, all over the right side, even to the apex.

Auscultation of the Voice. Left Lung.—The normal vocal resonance slightly modified in the apex.

Auscultation of the Speech. Right Lung.—Perfect pectoriloquy at the point of the scapula—not discoverable at any other portion.

Auscultation of the Speech. Left Lung.—No departure appreciable.

Percussion of Right Lung.—Marked dulness over the entire lung—more tympanitic than otherwise, in quality, about the point of the scapula, denoting, with its correlative signs, the presence of a cavity.

Percussion of Left Lung.—Appreciable dulness over the apex of the left, with tenderness.

Treatment.—Blisters, from time to time; syrup superphosphate ferri, ℥ij. three times daily.

Remarks.—The principal treatment of the above case consisted in the use of the syrup superphosp. ferri. Indeed, having noticed at that time, frequent allusions, in the various medical

journals, to the treatment of consumption with phosphorus, this course was adopted with an experimental view. It was given in such a manner, that from 5 to 10 grs. of the salt (superphosphate ferri) were taken daily—it was continued up to the time of the death of the patient (May 12th). She would frequently express herself benefitted by it, but no beneficial effect could be perceived by myself. The only good which it possibly accomplished, was an exhilaration of the system, which but increased the fatal delusion of the sufferer, that she was better physically. The preparations of phosphorus recommended by Dr. Churchill, the hypo-phosphites of soda or lime, could not be obtained, and this being at hand was substituted. Of course, no inference would be safe, much less conclusive, in regard to the use of this therapeutical agent, from a single case of phthisis, but, as far as this case goes, it at least serves to negative, to some degree, that recent special pathology of consumption, which ascribes it to a deficiency of phosphorus in the system. It would be considered, neither unwise nor unnatural to suppose, that a deficiency of this chemical element did exist, amidst the outspread and almost illimitable devastations of this disease; but such a conditition, if it exists, should be regarded in the light of a consequence or coincidence, rather than the cause. I am not aware, that this ideal pathology is supported by the chemical proof of a material diminution, not to say absence, of this element of the numerous salts, excreted by the various emunctories of the body. Mollities ossium is a disease, attributed to a deficiency of a salt, one element of which is phosphorus. Would not persons, subjects of this disease oftentimes for years, present more or less of this condition, as an ultimate symptom, if this pathology be true? More than this: organic chemistry teaches, that the brain and osseous system contain the greater part of the phosphorus of the system. Physiologists also state, that "the quantity of phosphorus which may be found in the nervous matter varies considerably at different periods of life, and is very small in idiocy." "The minimum of this element is found in infancy, in old age and idiocy." Now, this being true, intellectual development would seem to keep pace with it, increasing with its increase, and declining with its decline. Should we not, with consistency look for a decided failure of the intellectual man, coextensive with the diminution of this substance in the progress of the dis-

ease? Does the practical history of the consumptive teach this? There is no evidence upon record, to the end, that consumption produces greater prostration of the mental energies, than any other cachectic disease. On the contrary, examples are not wanting in history, showing the highest mental abilities, in consumptives, some of whom have distinguished themselves and left their mark upon the age in which they lived. To deny any benefit to alkaline phosphates or those tonic in their combination, in phthisis, would bespeak ignorance; but we think, that time and experience will prove that they are not curative, and will determine the circumstances under which they are to be used. In the above case, it produced no effect, other than an increased buoyancy of spirits, with a commensurate cheerfulness. Reasoning from its physiological importance to the system and its therapeutical action, as far as is understood, it is perhaps better adapted to the condition of certain dyspeptics.

BRONCHIAL PHTHISIS, WITH DISEASE OF THE HEART.

Edward M. was admitted March 14th, for cough: is about 26 years of age; dark hair and eyes—states that he has had a cough for five months; has never spit blood; is not hereditarily predisposed to consumption, but thinks that a brother of his died with disease of the heart.

Symptoms.—A violent, convulsive cough; scanty and frothy expectoration during the day, but consists, early in the morning, of pus and hardened mucus; shortness of breath, confined to the left side of the chest; frequent palpitation of the heart; the least exercise readily excites the attacks of palpitation; cannot lie upon the left side, from the violence of the cough, which is excited thereby; no pain in the chest; is not subject to headache; left cheek flushed; pulse natural in frequency, but rather full; bowels regular, and appetite and digestion good.

Physical Examination of the Lungs.—The respiratory murmur on the right side, normal in its various features; on the left, the vesicular murmur is somewhat exaggerated in the upper lobe, whilst a broncho-vesicular respiration is observed in the other lobe—an expiratory murmur, however, only occasionally perceptible.

Auscultation of Voice and Speech.—No variation.

Percussion.—Normal vesicular resonance observed throughout the chest.

Physical Examination of the Heart.—In the supine posture, its impulse is very strong, being felt and heard everywhere on the lower part of the left side, in front, and in the infra-clavicular region of the right; in the erect, in the supra-scapular region of the left, also. The sounds appear to have a muffled quality or tone, and with the impulse, are distinctly audible in the supra-scapular and upper inter-scapular region of the left side. In no other part of the superficies of the chest, can the sounds be heard, than in the immediate vicinity of the heart and in this particular region.

Percussion—shows a larger area ef dulness over the cardiac region, than is usually found in healthy persons.

Treatment.—Blister 2½ by 6 inches to chest, (left side), running obliquely towards the spine; alkaline cough mixture.

March 19th. Patient somewhat improved; cough less frequent and violent—since the drawing of the blister, has lost its convulsive character; expectoration more loose. Treatment continued.

March 23rd. His condition the same, except that the cough has regained its convulsive character, since the drying up of the vesication.

Treatment.—Blister renewed; ext. belladonnæ, in suitable doses, added to the alkaline cough mixture.

March 29th. Cough less frequent—expectoration still contains pus early in the morning.

Treatment.—Cod-liver oil, ℥ss. three times daily, in conjunction with the above remedies.

March 30th. *Physical Examination of the Chest.*—Broncho-vesicular respiration more general in the left lung—sonorous rhonchus sometimes observed in the same; the other characters, the same as were noted at the first examination.

Percussion over the left lung shows an appreciable dulness in the infra-scapular region.

A close examination of the heart was prevented by the recent vesication: so far as was observed, the result confirmed the previous one.

April 20th. Patient is decidedly better—coughs but little, and only when he first awakes; general health improved—can walk

up and down stairs, without being distressed by palpitation; is gaining flesh; still expectorates pus. Treatment, same.

May 10th. This patient was so much improved, that he left the hospital for New York.

We regret, not having had another opportunity of examining him physically, which was prevented by his sudden determination to return to the north.

Remarks.—In the differential diagnosis of diseases of the chest, from a frequent association of disease of the different organs, contained in the cavity, it is exceedingly difficult, if not impossible, always to distinguish the one primarily affected; for they all present such a community of symptoms as to require the nicest tact and the most accurate judgment to determine, unequivocally, the order of the diseased actions. In the case above, the patient had entered the institution to be treated for a cough, which, as is usual among the unprofessional, when protracted, he considered as an evidence of consumption. Happily, physical exploration, by the absence of certain landmarks, when associated with the history of the individual, as to predisposition and the previous occurrence of hæmoptysis, was sufficient to decide in favor of a bronchial affection, without tubercular complication. Having determined this point, another presented itself, viz: With the heart and the bronchiæ, both diseased—which is the primary lesion? This, to the patient, became a question of great moment; for, if the lung be primarily diseased, with its cure, which might reasonably be expected, the sympathetic affection of the heart, now assuming an organic nature, might also be expected to retire. But if the heart be the primarily diseased organ, notwithstanding the bronchial affection yield to treatment, yet, to say the least, recovery would be more than doubtful, such condition of the organ, as we suppose this to have been, seldom, or never, proving amenable to treatment. Without mentioning, in detail, the reasons which impelled us to the conclusion, we are satisfied, that the heart was primarily diseased, and that the bronchial affection was secondary, being kept up by its proximity to the former, its increased action and the want of proper treatment. What the particular diseased condition was, we have not stated, and is still a matter of doubt, but we suppose it to have been, one of hypertrophy,

with, perhaps, dilatation of its cavities—its various signs and symptoms pointing more particularly to this. The most remarkable feature presented by the case, and the one which induced its publication, was that of a distinct appreciation of the impulse and sounds of the organ, without solidification of the pulmonary tissue, at the supra-scapular and upper part of the inter-scapular region of the left side of the chest. In healthy persons, this latter phenomenon is not observable at any point on the posterior aspect of the chest, but is confined to an extent of surface between the right infra-clavicular region and the anterior aspect of the left side of the chest. The only conditions of the thoracic viscera which have been proposed for the interpretation of this phenomenon, are an increased conducting capacity of the pulmonary structure from solidification, as in pneumonia, carcinoma, pulmonary apoplexy, compressions of pleuritic effusions, and tuberculous deposits; also, in cases of emphysema, where the conduction of sounds seems to be abnormal in one lung from the diminished capacity of the other. In this case, no evidence of a consolidated condition of the lung was observed; on the contrary, the normal vesicular resonance was unmodified beyond that which occurs in ordinary cases of bronchial disease. No materially increased conductibility of sound could be attributed to this organ under this condition of things. It could not have been produced by emphysema of the right, since no evidence to this effect existed, and, moreover, the left was the diseased one. How, then, are we to explain its production? We have no satisfactory answer to the query, unless it be, that under the increased action of the heart, the enlarged extent of its surface, which came in contact with the chest, the thoracic parietes became the instruments of this greater transmission of its sounds. On the other hand, if this be so, would not every case of hypertrophy, with dilatation, even unassociated with diseased lungs, be characterized by the same observation?

In connection with the production of this phenomenon, it may not be amiss, to present the following quotation:*

"Dr. Walshe states, that in a case of intense emphysema of the left lung in which the disease was limited, and especially marked at the posterior aspect of the chest, he found the heart

* See Flint, on the Respiratary Organs, p. 291.

sounds considerably more distinct posteriorly on the right, than on the left side, there being no evidence of induration of the right lung to intensify the sounds on that side. The disparity here was attributed to an abnormal diminution of the transmission of the sound to the posterior surface of the left chest, the right remaining in a normal condition in this respect. Without knowledge of the fact that the transmission may thus be abnormally diminished, a normal intensity may be mistaken for a marked sign."

An obvious inference from this quotation is, that this transmission of the sounds of the heart to the posterior of the chest, may take place even in health; but so far as our reading and observation extend, it is at variance with other authors, for the vesicular structure of the lungs produces such a diffusion of the sonorous vibrations, as effectually to prevent such a perfect transmission, as will be appreciated by audition. Being analogous to the production of the physical sign, pectoroloquy, it necessarily requires a more solid conducting medium, than the porous, vesicular tissue of the lungs. It will be remarked, that the phenomenon was only distinguishable at a particular part (the supra-scapular and upper inter-scapular region of the left side): if it had been owing to a natural transmissibility by the lung, it would not have been so circumscribed.

The only alternative, to which we may resort, by which to account for the morbid sign, viz., transmission by the thoracic walls, is, when we examine strictly the circumstances of the case, perhaps fully adequate to its accomplishment. In health, during the alternate contraction and dilatation of the heart, no part of the organ touches the thoracic walls, except its apex, and that only during the contraction of the ventricles. The impulse, the result of this action, is most distintly felt between the 5th and 6th ribs. Again, those parts, the various valves, which are the agents in the production of the two sounds, occupy a position in this organ higher up, being situated beneath the 3rd and 4th ribs, whose spinal attachments are in the supra-scapular and upper inter-scapular regions. Now, when the heart is of its natural size, it is entirely separate from these ribs (3 and 4), therefore, whatever of sound is transmitted by them, must be derived indirectly from the impulse below, through the muscular septum of the intercostal spaces. Now, if the heart be en-

larged, and at the same time dilated, it has a greater extent of surface in contact with the parietes of the chest, increasing the space over which the impulse may be felt, and favoring a more direct transmission of the valvular sounds by the same, to distant parts. Bearing in mind the spinal attachments of the 3rd and 4th ribs, and their relation at their sternal extremities to that portion of the heart which contains the valves in conjunction with the increased action of this organ, producing greater intensity of sound, may we not find in their direction the key to the solution of the problem under discussion. Their firm, dense structure, receiving direct impressions, render them better conductors of sounds, and perhaps point to a reason why the sounds were not heard in other directions of the same side.

Perhaps the worthy editors of this journal can give some additional reflections, valuable to its readers, upon the point involved.

On Headache. By John Addington Symonds, M.D., F.R.S.E., Consulting Physician to the Bristol General Hospital, etc.

It is an interesting but a difficult investigation to ascertain the mode of production of some of these sympathetic pains in the head. Here, for instance, is a question. What is the cause of a so-called bilious or sick headache in a person who suffers such an attack once in a year or so? In him there cannot be any great susceptibility on the part of the cerebral nerves, or it would occur oftener. But what is the course of events when it does occur? We need not stop to ask whether it is some imperfectly chymified substance in the duodenum, or some depraved secretion which begins the mischief. We will assume it to be some disturbing impression on the nerves of the alimentary tube.

This impression may or may not produce a sensation of indigestion before the headache. If it does, we might suppose that the impression has passed by extension from the parts of the sensorium in relation with the nerves of the stomach to that which is in relation with the nerves of the head, and that the pain is, so to speak, reflected on the latter nerves. If this is the course, I think it must be presumed that there must have been some previous disposition in the centres related with the nerves of the brain to be so affected.

I doubt if this hypothesis is so tenable as the supposition that the impression is communicated along the sympathetic chain to the nerves of the brain, and there excites the disturbance.

Whatever may be the function of the sympathetic nerves as to sensation, motion, and reflex action, it is impossible to observe their intricate nexus, as well as their distribution, without suspecting that one part of their duty must be internuncial between the viscera, and that they must be the agents of that consentaneous operation without which the functions of organic life could not long continue.

Order in time must be as necessary in the human microcosm as in the macrocosm of the universe. Were the processes of digestion, sanguifaction, respiration and circulation, to go on independently, the vital machinery would soon come to a stop. The heart beats at definite intervals, the respiration keeps a proportionate time, food should enter, and its residue leaves the system at regular periods. But the rates are perpetually changing, from the variations of daily or even hourly life. and the changes must be announced from one part to another, in order that the requisite adjustments may take place. Without entering, however, more minutely into speculations as to the final cause of the intimate nervous connexions of the viscera, we may content ourselves with pursuing the way of exclusion. The cerebro-spinal nerves mixed up with the ganglionic nerves account for as much of sensation and emotional influence and reflex action, as we meet with in the viscera. The contractions of the muscular fibres of organic life, probably have special relations with true ganglionic fibres and ganglionic centres, uni-polar, bi-polar, etc. Still there are a large number of plexuses and nerves, entering and departing from those plexuses, whose function is scarcely accounted for, unless we infer that their office is to keep up a connexion of some sort between the viscera.

A general survey of the ganglionic system and the connecting nerves, impresses us with the unity of the whole system. But without the *à priori* assumption that organs so connected must work together, we have strong *à posteriori* evidence of the connexion in the events of disease. One organ, the variations of whose actions may be considered typical of the rest, is more easily observed than the others. I need not say that I allude to the heart. Much has of late years been done to prove the dependence of its rhythmical action on ganglionic centres. Since these researches, I think we can no more definitely understand than ever we could understand before, the readiness with which the rate of the cardiac pulsations is affected by disorders of any organs within the ganglionic chain. The intermittent pulse of indigestion, the alarming rapidity of the heart's action from inflammation of the peritonæum, or the depression of its action from injuries without loss of blood or severe pain—show that this regulating central power of the circulation, not only receives tidings of distant organs with great quickness, but also that it is seriously perturbed

by them. There is every reason from analogy to infer, that, although we have not such ready means of noting the influence of other ganglionically connected organs on each other as in the case of the heart and the other viscera, yet that communications are continually going on in health, and that the same links of communication produce the association of morbid phenomena. That the connexion in health is quite irrespective of sensation is obvious, from the fact that in perfect health individuals may live for long periods of time unconcious of internal viscera, and, therefore, that their harmonious action had not been indebted to sensation. The sensory nerves of the viscera seems to have no other function than that of denoting unusual states of the organs. But if this be the function, the question arises, What possible good can accrue from the transference of the sensation from the sick organ to one that is well, or comparatively so?—a common enough occurrence in sympathetic disorders. The good would certainly appear to be beyond our discovery; but we may endeavor to learn the course of transmission. Do the sensory fibres convey the impression direct to the sensorium? and, before its conversion into a sensation, is the impression transferred to another part of the sensorium, related with sensory ganglial fibres from some other viscus? Is the impression which has been made on the gastric nerves by a lump of ice, allowed to pass over the encephalic cells related with those nerves without being converted into a sensation, while on reaching the cells related with the sensory fibres of the first branch of the fifth nerve, it causes a state which is felt in this nerve as neuralgia? Is this the probable route? or is there not another equally probable? If we admit that impressions are exchanged between the different ganglia, may we not conjecture that the impression made by the ice on the gastric nerves, instead of running along the nearest *rami communicantes* to the spinal ganglia, and thence up the sensory tracks (whatever they are) to the sensorium, or, if you please, by the more direct course of the vagus; instead of either of these courses; I say, may we not conjecture that the impression takes its route up the chain of sympathetic ganglia, making no disturbance till it reaches the ophthalmic ganglion, which being in a susceptible state, undergoes a certain change, which change, on being imparted to its sensory nerves, excites a sensation of pain referred to the parts over which the sensory nerves of that ganglion are disturbed? In this hypothesis I assume the ophthalmic ganglion to be predisposed to disorder, because an organ sympathetically affected with disease, implies a readiness for disease in some part of its structure. A sympathetic disorder is. so to speak, not forced on the sympathizing organ—it is invited by the readiness of the latter to take offence.

Let us endeavor to apply some of these considerations to

another particular instance bearing on our immediate subject. A gentleman had for many years been liable to attacks of headache on the slightest provocation. Long-continued intellectual exertion, the excitement of an agreeable party, a journey, any error of diet, would inevitably lead to an attack of headache. During the same period he suffered at different times from pain in his teeth, which decayed rapidly, and at last were removed, and replaced by false ones. This change happened more than a year ago, and since that time he has been almost exempt from pain of the head. In other respects, his health and mode of life have been unaltered. What was the connexion between the diseased teeth and the headache? The morbid impressions on the ganglionic fibres of the fifth pair might, without any stretch of hypothesis, be reasonably presumed to induce a morbid state of the Gasserian ganglion, whether the impressions on the senory fibres did or did not reach the sensorium, and induce a painful sensation referred to the teeth. The Gasserian ganglion is connected by marked fibres with the cephalic ganglion, from which a large number of nerves pass to the cerebral arteries. The cephalic ganglion probably partook of the morbid condition of the Gasserian, and hence might have arisen so susceptible a state of the ganglionic nerves of the brain, that they may have become disposed to ache under the influence of impressions which, without the predisposition in the nerves, produced in the manner I have described, would have had no effect. It seems to me that if this explanation cannot be accepted, there is no alternate but the supposition that morbid impressions on the dental nerves (not creating pain in those parts) arriving at the central extremities of the nerves, are passed on to that part of the sensorium which is related with the sensory fibres of the ganglionic nerves of the brain, and maintain in that part of the sensorium a morbidly susceptible condition; and that this condition is brought into such action as constitutes pain, whenever the said part of the sensorium receives impressions transmitted from nerves which have been offended by causes acting directly upon them in the brain itself, (as in overstudy or anxiety,) or when it has received like disturbing impressions from the nerves of other parts of the ganglionic system.

I confess that the first of these views, which I have ventured to propound, is the one that seems to me more admissible. The course of communication traced in that survey is more direct, and involves less complexity of causation.

I should feel myself to be taking an unwarrantable liberty, were I to occupy the time and attention of such an audience as that which I have the honor of addressing, with hypothetical suggestions if the case would admit of a theory. We have not the means of subjecting ganglia and their nerves to satisfactory experimental observations in reference to sensation. When the

vivisector has made his way to the base of the cranium, externally and internally, though he might obtain satisfactory information as to the conduits of motor influence, I know not how it would be possible, in the midst of such tearing and severing of tissues, to determine degrees of sensation, which can only be demonstrated by cries or quiverings.

Allow me to try the hypothesis by another example. A gentleman, after playing at bowls one evening, awoke in the night with slight hæmoptysis. The source was referred by his own feelings and his physician's examination to the upper lobe of the right lung. Whether or not a tuberculous nodule was the nucleus of the disease, there was evidence for a short time of a portion of the lung in the right infra-clavicular region, and in the same part pain was felt for a long time afterwards, when the patient laughed vehemently, or made any strong muscular exertion. But after awhile he observed that pain would occasionally come on in the same part whenever his stomach was at all deranged, and that it would subside after a slight eructation of wind. What was the chain of events in the production of this obviously sympathetic pain? Was the morbid impression, which had been made by gas in the stomach on the gastric nerves, transmitted by sensory nerves to the sensorium, and instead of being transformed into a sensation in the part of the sensorium related with the gastric nerves, passed on to the central cells related with the sensory nerves belonging to that portion of lung which was formerly diseased? Or is it not more probable that the gastric impression was transmitted by ganglionic nerves to the pulmonary plexus belonging to the spot of lung in question, and that the impression, acting on the morbid susceptibility left in that plexus by old disease, excited in it another impression, which, having been transmitted to the sensorium, produced a sensation referred to the lung?

There is, however, another element to be considered in that curious process, by which, when impressions are being made on many sensory nerves, some in particular will be converted into sensations, and which may easily lead to a fallacy. It is a familiar fact that, amid the din of confused sounds in a street, or at a dinner party, the only auditory impression which become sensations, that is, which are presented to the consciousness, may be the words of a friend in colloquy. The cause of this appears to be simply the predominance given to one cluster of impressions by the desire, or the compulsion of the will, in other words, the expectant attention. If of two impressions, starting severally from the gastric ganglionic centre, and its related pulmonary centre, one is more intense than the other, it will become the sensation perceived in the sensorium. Or supposing the intensity to be equal, the prevalence may be determined by the expectant

attention. If, for example, the pulmonary impression has been linked with apprehensions as to the nature of the illness, or with previous suffering, it will be perceived to the exclusion of the gastric.

This subject of morbid sympathy as to sensation may, perhaps, be still further elucidated, if we consider the sympathy between the tegumentary surface and the internal organs. What, for instance, is the order of events in catching cold, in the common occurrence of a catarrh? A person, liable to such attacks, may have been standing at a corner of a street, or at an open window, conversing with a friend. According to the degree of interest in the conversation, he may or may not feel chilly; but in twelve or twenty-four hours he has the symptoms of incipient catarrh. What has happened during that period of incubation? What did the current of cold air do to him? It may be said that the insensible perspiration was interfered with, and that matters were thereby retained in the blood which ought to have been eliminated; and that the blood, thus contaminated, excites disease in any predisposed organ—the Schneiderian membrane, for instance. This may be the case; but another view might present itself. It might be inferred that an impression has been made on the nerves belonging to the cutaneous blood vessels, reaches the ganglionic centres, and in its further diffusion, extends to the grey ganglionic nerves belonging to the blood-vessels of the Schneiderian membrane, and, through them, so alters the circulation and secretion of the membrane, as to produce what is called catarrh. The one view seems at least as likely as the other. But suppose the cold to have operated on some limited portion of the body, say the scalp; or suppose the outward cause to have been damp ground operating only on the feet. It is not easy to presume, in this case, a general defect of elimination. The more probable presumption is, that an impression is made on the nerves belonging to the blood-vessels in the skin, and that they transmit the impression to the visceral ganglia, and disturb such parts as are most prone to disorder.

Or we may take another case for investigation. I have a patient who frequently suffers from severe attacks of headache, and who tells me that one of the most frequent causes is driving in an open carriage in a cold wind. She has no general chill, for she is well clothed, but some morbific impression must be made on the face. In a few hours, the headache comes on. There is here no general interference with elimination, but an impression is made on the skin of the face, which may be transmitted to the Gasserian ganglion, and thence to the cephalic; or it may travel by the route of the arteries to the nerves of the brain. But the road which the sympathy travels may be traced in the reverse direction. Thus a patient is the subject of headache, attended

with heat of the scalp, dilated and with throbbing temporal arteries. Cold is applied to the forehead and scalp, and the pain is lessened or removed. How is it thus sedative to the nerves of the cerebral vessels? Its operation on the vessels of the scalp is to cause their contraction; and I presume that this is effected by its operation on the vascular nerves. The impression on them, transmitted to their ganglion and plexus, must reach the nerves of the brain. We cannot think that the cold penetrates the bony case, and so reduces the vascular disturbance within it; or, should any one think that this is not impossible, let us suppose that instead of cold lotions, leeches have been applied. No influence is in this way transmitted through the cranium; the quantity of blood lost is too small to affect the heart or the general circulation, and it is a clear case of sympathy. The relief is afforded here unequivocally through the blood-vessels and their nerves, the latter nerves being the only media of communication between the vessels of the scalp and the vessels of the brain and *pia mater*, whatever communication may be traced between those of the scalp and the cranium and *dura mater*. An analogous train of argument might be pursued, as to the action of anodynes applied to the surface.

The phenomena of a *coup de soleil* also illustrate the principle; for, unless it be thought that the sudden elevation of temperature in the scalp is extended to the cranium, and thus directly irritates the vessels of the membranes and the surface of the hemispheres, there seems no other way of tracking the influence than that which I have already pursued, along the nerves of the external blood-vessels to those of the corotidal plexus.

Cerebral Circulation.—Having thus far considered the relation which painful affections of the head bear to impressions on distant nerves, let us turn our attention to their connexion with the cerebral circulation.

The intimate connexion of the nerves of the brain with its blood-vessels, enables one to account for the difficulty which is often presented to our diagnosis—that of distinguishing the pain which is purely nervous, from that which is the effect of vascular disorder. The peculiarity of the intracranial circulation enhances the difficulty; for though the researches of Dr. Burrows have settled the question as to whether the qnantity of blood in the vessels can vary, having proved that it is variable, yet the nature of the outward barrier indicates plainly that the compression of the vessels, and consequently of the nerves, must at times be very considerable. Suppose the nerves be in a normal state, the pressure of distended vessels may occasion pain, as in the inflammation of the pulp of the tooth. Or suppose the nerves to be hyper-æsthetic, very slight changes in the force and the volume of the circulation will distress them. The aggravation of a nervous headache by palpitation, by interruption to the venous circulation, in cough-

ing, straining, or other muscular exertion, must be familiar to most persons. I have just supposed the case of the nerves being in a normal state, and then distressed by the hydrostatic pressure; but, on consideration, I doubt whether pain is ever due to simple vascular distension, unless the latter has been extreme and long-continued.

It is difficult to find a combination of circumstances exactly like that of the vessels and nerves of the brain. Some resemblance may be found in a limb compressed by an article of dress, as a foot by a tight shoe, which in the evening, under the influence of heat and long dependence, begins to swell. The pressure of the shoe makes the swelling painful; but here, again, there is a want of strict similarity. For the pain comes from the superficial nerves of the skin, which are directly compressed. The pain is not like that which ensues when the vascular nerves only are affected. That mere compression of healthy nerves by their distended vessels should occasion pain, is rather negatived by the freedom from pain during violent muscular exertions and strains, which put the vessels of the head under the highest degree of pressure. And again when the accumulation of blood takes place in the other direction, whether attracted into the capillaries by unusual functional exercise, or injected into them by emotional excitation of the heart, or by the more composite influence of alcohol, there is often an entire exemption from pain, and in the latter instance a feeling of great enjoyment. I think it may be inferred that when fulness of the vessels gives rise to pain, there must be an accompanying or preceding unhealthy state of the nerves of the part, or that the congestion must have been long continued enough to beget such textural disorder as the nerves will necessarily partake of. In inflammation the nerves are for the time injured by the changes in which the process consists, as well as by the first action of the exciting cause.

The headache which follows an epileptic paroxysm, and that which attends or ensues on prolonged dyspnœa, or violent fits of coughing, might seem to be examples of pain occasioned by simple disturbance of the brain-circulation; but the latter cases are exceptional; that is, it so often happens that both long-continued dyspnœa and cough occur without producing headache, that we cannot but infer that some nervous element must be introduced into those cases in which pain attends upon difficult breathing and cough. As to epilepsy, though we have much to learn respecting its pathology, yet a paroxysm presents unambiguous evidence that the vessels are enormously strained; and the pain after the attack and the functional disturbance of the brain bear a direct ratio to the severity and frequency of the attacks.

It was while I was considering the relation of headache to altered states of the circulation in the brain, and speculating on the pos-

sibility that the duration of a fit of headache might be connected with the time requisite for the adjustment of the disturbed balance, and especially for change in the distribution of the cerebro-spinal fluid, which has been supposed to play an important part in such adjustments—it was with the view of confirming or correcting this supposition that I determined to make some experiments on animals. In the performance of these I had the valuable assistance of my friend, Mr. Michell Clarke, a gentleman well versed in anatomy, and expert in operating.

If the cerebro-spinal fluid replaces blood withdrawn from the intracranial vessels by gravitation, or if, conversely, the recession of the fluid makes room for congestion of those vessels, it appeared to me that were an animal kept some time in a certain position, the cerebro-spinal fluid ought to be found accumulated either in the cranial or in the vertebral cavities; if erect, in the ventricles and subarachnoid space of the brain; if inverted, in the theca vertebralis.

Three rabbits were selected. One was suspended by its ears and fore-legs, another by its hind-legs, a third was kept for comparison.

The two suspended rabbits were poisoned with prussic acid after about half an hour, their position having been strictly maintained. The post-mortem examination was made immediataly, and with the bodies kept steadily in the same position.

In the rabbit inverted during suspension the eyes were very prominent, and the membrana nictitans was congested (but there had been no manifestation of distress during life). The vertebral canal was first laid open. All the tissues in the lumbar and dorsal regions were bloodless; those of the neck and cranium were gorged with blood; the membranes and the substance of the spinal cord in the lumbar and dorsal regions were quite pallid. In the cervical portion of the theca there appeared a slight accumulation of sanguinolent serum. On opening the cranium, the bony tissue was full of blood; the meninges were highly congested, and the puncta sanguinea in the cerebral substance were numerous and strongly marked. There was no serous fluid in the ventricles, and none external to the convolutions.

The rabbit which had been suspended by its ears and forelegs was of course examined in an erect posture. The tissues of the head, neck, and back were exsanguine; but those of the lumbar region were in an opposite condition. When the cavities were laid open, the membranes of the spinal cord in the same region were found injected, while those of the brain and the vessels of the brain substance were extremely pallid. Serous fluid was anxiously and carefully looked for in the ventricles and between the convolutions, and at their base, but none was found.

The third rabbit was poisoned with prussic acid, and examined

immediately in the horizontal position. There was a pretty equal distribution of blood, and nothing remarkable was observed, excepting the absence of anything like cerebro-spinal fluid, either in the cranial or in the vertebral cavity.

These experiments, while they entirely confirmed the observations and conclusions of Dr. Burrows, as to the production of an increased or lessened quantity of blood in the brain by gravitation, were negative as to any adjustment affected by cerebro-spinal fluid.

I thought it well therefore to repeat the experiment on two full-grown and very strong rabbits. They were suspended for an hour. The rabbit which hung by the ears and forelegs was found dead. The other, quite vigorous, was poisoned with prussic acid. They were examined with the same results, excepting that in the inverted animal there was not the same appearance of sanguinolent exudation in the cervical portion of the theca vertebralis which had been found in the first case. The rabbit which had died suspended by his ears and fore-legs was examined with particular care and interest. No serous fluid was discoverable in the ventricles, and none beneath the pia mater—none in any part of the cranial cavity. But the membranes and brain-substances were absolutely blanched. The appearances corresponded with the plate in Dr. Burrows' work, representing those of a rabbit bled to death.

As this observation was interesting in proof of the fatal effects of a posture which diverted blood from the brain, it was repeated on two other rabbits. One was suspended by the ears and forelegs, the other by the ears only. Death occurred a few minutes earlier in the former than in the latter case. The appearances within the cranium were similar to those described in the former instance.

In order to meet the supposition that the animals might have been distressed by the weight of the body, and the strain on the ligaments of the neck, the weight had been taken off by a support applied to the haunches.

Thinking it desirable to ascertain whether the inverted position would occasion death, if continued longer than in the cases of the animals suspended in that posture, a strong middle-sized rabbit was hung up by his hind-legs and kept in that situation for more than four hours. After being cut down, he looked for a moment astounded, then gave his head a shake, and seemed to have recovered his self-possession. He was in fact quite well, and began to feed quite heartily.

Rabbits are known to hold their lives on a slighter tenure than do many animals. We thought it right therefore to try the effect of the erect posture in one of another order. A cat, being proverbially tenacious of life, was selected. Mr. Clarke found it

difficult to keep her head constantly upright. She died in three hours and a half. The brain and its membranes were perfectly bloodless, but there was no fluid in the ventricles, nor under the pia mater, nor in any part of the cranial cavity. Neither could more than a very few drops be discovered in the vertebral cavity.

Whatever may be the physical agency by which the brain deprived of its blood is still capable of filling its bony case, the proof given by the experiment of the degree to which blood may be drained from the cerebral vessels by posture only, has, it seems to me, some considerable value. We see that, independently of the neutritive relation between blood and neurine for the performances of brain function, one of the conditions under which this function is performed is a certain amount of pressure, a greater or less amount of which may produce distressing or even fatal results. In the rabbit the circulation is not so arranged as to maintain even for a short time an adequate supply to the brain under the disadvantageous circumstances of erect posture. While the egress of blood is helped by gravitation, the afflux is to be kept up by the exertion of a heart not vigorous enough to overcome the difficulty presented by gravitation. The heart soon becomes further weakened by the reflected influence of that very state of the brain which its own incapacity has engendered, and fatal syncope is the result.

The fact teaches us also how important to man, with his "*os sublime*" is a sufficiency of strength in his left cardiac ventricle. It may be that in him there is a larger amount of cerebro-spinal fluid normally existent, and that he is furnished with adjustments for his greater variety of postures. But still nothing is more to be apprehended than the result of diminished afflux and pressure, from a failure of the cardiac impulse. And the observation is, I think, confirmed by all clinical and pathological experience.

I need scarcely say that in these experiments it was a surprise to Mr. Clarke and myself that no appreciable quantity of fluid should have been found corresponding to the cerebro-spinal fluid, though it was carefully looked for. Mr. Clarke was at the pains of examining under every precaution the vertebral and cranial cavities in a cat, and in dogs poisoned with prussic acid, but with the same negative results. The examination of a dog was made in the presence of Mr. Henry Clark, an accomplished anatomist, and myself. The whole quantity of fluid collected on bibulous paper from the theca vertebralis, the ventricles of the brain, and the cranial cavity, amounted at the most liberal computation to no more than seven drops.

It is not difficult to reconcile these negative results with the fact that one finds more or less serous fluid in the cranial and spinal cavities of the human subject, because the latter is always examined several hours after death, and when there has been

abundance of time for the transudation of fluid in these as well as in other serous cavities. And, *à priori*, a large proportion might be expected from the exceeding vascularity of the pia mater, which represents sub-serous cellular tissue. But it is more difficult to explain the absence of the fluid in the animals examined by us, when we consider it in relation to the experiments of Magendie, Cruveilhier, Ecker, and others, on the living animal. It would be presumptuous, as it is unnecessary to question the accuracy of such practised observers. And without other evidence I shall come to the conclusion that the presence of true cerebro-spinal fluid is confined to the living animal, and that when the quantity of blood in the vessels is diminished by death, the fluid passes into them by endosmotic action.

But I have before me the note of an experiment made by Mr. Clarke on a living dog, previously rendered anæsthetic by chloroform, which fully corroborated those of Magendie and Cruveilhier. The dog was of smaller size than that which was examined after death, yet nearly sixty drops escaped from the puncture through the occipito-atloid ligament, though from a dead animal of the same size the sum total of serous fluid obtained from venticles, cranium, and theca vertebralis amounted at the outside to seven drops only.

I have already said that it also remains to be explained how the brain all but emptied of blood, still fills the cranial cavity. Two cats were killed, especially with a view to this point. The brain was drained either by posture, or by division of the cervical vessels, but on opening the cranium the dura mater was found as tense as if the vessels had been full of blood, and yet no serous fluid was discoverable. As there is no ground for attributing resilience to the cerebral substance, we are forced to speculate upon the possibility of some interstitial fluid or serous halitus. As the experiments have proved that the cerebro-spinal fluid of the living animal is not to be found after death, can it be that this fluid instead of being extra-membranous becomes interstitial? Or is there some aëriform substance in the vessels, such as prevents the coats of many of the arteries from collapsing after death, though they no longer contain blood? I have already suggested some experiments to Mr. Clarke in elucidation of this subject, some of which he has already performed, while others are still in progress.—[*New Orleans Med. News and Hosp. Gaz.*

Clinical Lecture—on Conical Cornea and its Treatment, and on Gonorrhœal Iritis. By W. Lawrence, F.R.S., F.R.C.S., &c., Senior Surgeon to St. Bartholomew's Hospital.

Gentlemen,—We have had, since *Summer Session*, commenced various instructive "eye" cases in the hospital, to which I

wish to direct your attention to-day. Several severe cases of syphilitic iritis, with, and, I may say, without complications, as also a most unique case of that very singular disease "conical cornea." Iritis is a very ordinary disease in practice, so that your attention cannot be drawn to it too early in the session; it is also one seen under unexpected circumstances. The first case of which I may speak is that patient suffering under

INFLAMMATION OF THE EYE WITH GONORRHŒA.

You will remark, I say, inflammation of the eye attended with gonorhœa—not gonorrhœal ophthalmia; the diseases, in fact, are quite different, as well in their pathological seat and import as in their mode of treatment, constitutional or otherwise.

In cases of gonorrhœal ophthalmia, of which I speak hereafter, it seems as if a patient laboring under gonorrhœa conveyed much of the puriform discharge immediately to the conjunctivitis, of which, no doubt, you have all read in your books; but in this patient now under our notice, with a gonorrhœal history of a somewhat like kind, the infection from some constitutional cause or peculiarity, probably of a rheumatic character, extended from the conjunctiva to the sclerotic coats of the eye: from thence even to the iris, causing great intolerance of light, with remarkable dullness of colour in the iris itself. To these signs of this affection were added profuse lachrymation, and what I consider almost as pathognomonic of this class of cases, *most severe supra-orbital pain*—pain of a most remarkable kind, extending round the orbit, and, no doubt, in some measure engaging all the fibrous tissues of that part. Now I wish you to remark that both these diseases arise under similar circumstances; yet this is, you see, quite a different thing from gonorrhœal conjunctivitis, or a conjunctivitis of any kind, properly so called.

The supra-orbital pain of sclerotitis is absent in the disease of the conjunctiva. The appearance of the patient himself is also peculiar; you can, in fact, scarcely mistake these cases when once you have studied them. Fortunately, this serious thing—gonorrhœal ophthalmia—is not very often seen in this hospital; but if any cases do offer themselves I shall take the opportunity of showing them to you.*

The treatment of these cases differs, also, so that a proper diagnosis is not a matter of idle curiosity or ingenuity, but of necessity. In this patient we had to combat the inflammatory symptoms in the sclerotic coat with much vigour. Depletion and cupping on the temple were ordered and mercury used night and morning: calomel and opium, not for any specific

* Mr. Wilde, of Dublin, as previously stated in the *Circular*, has recently discovered that simple leucorrhœa in a married female produced as marked infection in the conjunctiva as gonorrhœa.

action, so much as to stop inflammation. To these remedies we added a blister on the nape of the neck; yet all did not answer, and we were obliged to have recourse to the wine of colchicum —(3 ss., sex tis horis). This affected his stomach a little, as colchicum very often does, so that it is a drug requiring much caution in its administration. In my experience, however, I find that when the pain and sickness are induced, the action of the medicine is more certain and specific; still great caution is also necessary, for very serious results have followed overdoses of this powerful agent.

If the colchicum* be used without due caution, even fatal results might arise, so that it will be necessary to watch its action with great care. I am not going now to enter into the minute diagnosis of sclerotidis, we shall see it as we go through the wards during the summer, and it will be better to point it out to you in the wards.

The next case I wish to speak more in detail about, is a patient suffering under what is termed,

CONICAL CORNEA.

The patient is E. W———, a poor woman, it seems, who has been led about the streets quite blind. She is a comparatively young woman, only aged thirty six years; she has occasional flashes of light, she says, but with that sole exception she has been now thirteen years totally without vision of any kind.

This is a most singular disease, one of the pathology or nature of which we know absolutely nothing. As far as I have seen it during fifty years' experience (if possible to add to its anomalous character) it usually takes place in young and healthy subjects who have not suffered in any manner from excessive use of the eye, like watchmakers, needlewomen, printers, &c. This young woman, our present patient, you see, is perfectly healthy; she tells us nothing of any previous disease of her eyes; in fact, it is a gradual change occurring over a long space of time in a cornea otherwise healthy. I have seen the cornea in this state become in shape quite like a cone; the rays of light, too, present a most unusual appearance in conical cornea; the patient does not present the vacant, dull eye of the amaurotic patient, who holds his head towards the sky whene'er he may chance to catch a glimmer—everything dark, dark,

> "Amid the blaze of noon
> Irrecoverably dark, total eclipse."

* It may be prudent to observe that very few surgeons share Mr. Lawrence's dread of the use of colchicum, at least in Hospitals. Mr. Hancock, uses tinct. of aconite in such cases, which is nearly the same medicine, and probably aconite and atropine will, ere long, supersede all the routine plans of calomel and opium, belladonna, &c., &c.

There is nothing of this dulness or opacity of the eye in conical cornea, but no doubt you have observed it in this woman; the eyes here have an unusual bright appearance, sparkling like diamonds or those bits of cut glass that sometimes represent diamonds! The rays of light passing into the eye in conical cornea are, I think, reflected (not refracted, mind you) before they fall on the retina, and are thus thrown into those singular glittering or diamond-like reflections in the vitreous humour and lens of the eye. I think that even on physical principles the blindness of the eye in conical cornea is to be explained; her eyes are like a telescope that has been pulled out in a wrong manner, or fixed at half cock. But neither a gun or a telescope will answer if fixed firmly at half the measure of its capacity. In the eye it must also very seriously impair the focus of vision, as you see it does in this poor woman. She says, over and over again, that for years she has been totally blind, led about like a child!

Well, on examining the eye with some care, I found that, though the cornea in each eye is in a very marked manner, bulged into a cone—from what cause I never could meet any surgeon who could exactly say—yet that the immediate circumference of the cornea, situated next the sclerotic, remained unchanged; indeed, few persons not familiar with the different varieties of blindness would detect that this healthy young woman, with what the story-books would call "brilliant eyes," was a poor creature almost totally blind. Any one accustomed to eye cases will at once distinguish these cases, however, from cases of photophobia, amaurosis, &c.*

Now, on the admission of this woman with conical cornea to hospital, having seen some similar cases, benefitted by the only remedy I know of in these patients, I was anxious to give that

* In these times, when sanitary science shows the value of light, it is very interesting, with the additional knowledge imparted by modern science, to study the early observations of Milton, who, "in the latter years of his life suffered severely from rheumatic gout, which, attacking his eyes, left him totally blind"—so severe this "dim suffusion" which veiled his sight! Speaking of light he exclaims—

> "Thee I revisit safe,
> And feel thy sovereign vital lamp; but thou
> Revisit'st not these eyes that roll in vain
> To find thy piercing ray."

And again he makes the blind Sampson say—

> "Since light so necessary is to life
> And almost life itself—
> Why was the sight
> To such a tender ball as the eye confined."

"Almost life itself" is a very beautiful idea! Marshall Hall has shown that perhaps the first link in the long chain of actions ending in assimilation, digestion, &c., is a reflex action in the lenticular ganglion, and eighth pair from light exciting the retina.

remedy, which is belladonna, a full trial. I will now read some of the notes of the case:

May 5,—"The patient has had the belladonna applied," (I read in the notes furnished by the House-Surgeon,) "since when, greatly to our astonishment, she begins to see objects all around her, and on bringing a book close to her face she sees the type and recognises the larger letters." Exactly so. Now, the reason of that is at once obvious: I have already remarked that the immediate circumference of the cornea, next to the sclerotic, remained unchanged; very well, now comes the belladonna or atropine, and dilates the pupil; more light is thus permitted to pass, and through a healthy portion of cornea a mere line or so of pupil is left, and on bringing a book up to the face she can read very respectably indeed. It is remarkable and curious that the retina retains its sensibility for a very long period. Now, the conical cornea in these cases is subject to friction, and becomes roughened; you must be prepared also for that, but I am of opinion that in young and healthy subjects it will not give much trouble.

An elderly gentleman, a clergyman, quite blind, consulted me some time ago; he was perfectly well in all other respects, but he was totally blind, and had this singular disease of the cornea. A change had occurred, unfortunately, in this case, in the apex of the cone due to friction, it appeared quite opaque. The old gentleman was very far advanced in life, perhaps about eighty—an age, of which one is not fond of new experiments or new theories. It has been suggested now—by the new Ophthalmological School, if I mistake not—to make an artificial pupil in such cases. I simply ordered the atropine drops, from which he obtained a very fair amount of comfort; indeed, he went to church, he rode about in his carriage, took exercise, and, much to his delight, renewed his acquaintanceship with an old friend, the 'Times' newspaper! which he read, holding it up close to his nose and forehead. I cannot say that I am favorable to cutting operations in these cases; the palliative plan of atropine answers every purpose.

We next pass on to a different order of cases, but one which must attract, as it deserves your serious attention. The next is a case of

SYPHILITIC IRITIS.

I may say, in the beginning, this has been a patient a little out of the ordinary hospital routine of such cases—a respectable young person coming to us in perfect health, but attacked with iritis! If we put the question of syphilitic or non-syphilitic to herself out of book, I should be disappointed if she answered it exactly as it might be wished. She comes to us from the coun-

try; she looks something like a quiet governess in a private family. Now governesses may go wrong, I dare say, for all that you know, as well as those over whom they may be said to govern. It is very probable that we are favored with this lady's society because she has kept the thing a profound secret up to the present. All this has a bearing on the case, however, and if we make any hand of it, it will be by going slowly, as there is such a thing as idiopathic iritis, rheumatic iritis, &c.

She admitted that she had taken some medicine, but it was all Epsom salts, certainly nothing else. Well, not knowing much of what are now termed, in the phraseology of the day, this lady's "antecedents," or the amount of moral control she may or may not have practiced as a governess on herself by way of example to her pupils, Mr. ——, my House Surgeon, commenced what the newspapers call a "delicate investigation." She, of course, denied point blank all syphilitic taint, but on untying the strings of her bonnet—which she was requested to do, as you saw on the day of her admission—there were some copper-coloured spots under the ribbons, not as inviting as one would like; yet this was not sufficient for our purposes of a diagnosis, though it left no doubt on my own mind of the true nature of the disease; but we further made out: this is the month of May, but about last Christmas she had a discharge, attended by swellings in each groin, but she merely took small doses of Epsom salts, and did nothing else. She would not for the world have told the family surgeon. You will see the bearing of this 'delicate investigation' presently: she took her salts, and rested contented that it would all blow over. Now let us retrace our steps with this new light. About five months ago, you perceive, she had primary syphilis: it may have been very slight; she had a discharge probably from an abrasion in the passage. Two months after she noticed the marks under the ribbons of her bonnet—viz., a scaly eruption, and now more of a copper colour, yet she very probably knew of no bearing of one of these things on the other.

May 4.—Together with the previous history, we find the left eye of this governess has been bad for ten days. She was ordered strong poppy fomentation and gray powder, ter in die —eight leeches to the temple. When I first saw the muddy colour of the iris, and perceived that she complained of dimness of vision, that the pupil was contracted, and did not seem to answer to the stimulus of light, I had no doubt in my own mind of its being syphilitic iritis.

13.—I need not go over the notes of treatment; they do not present anything worthy of stopping to remark on, as you have seen the case to-day; but here, on the 13th, she is reported as "nearly well;" the leeches and gray powder have answered

their purpose; the iris is again safe; and she will probably leave the hospital, thus rescued from further temporising mischief.

Now, gentlemen, this history interests us all as surgeons. You see it is made up of quiet, confidential demeanour towards even the poorest patient; and when this is adopted you seldom fail to come down on the truth; the educated surgeon will not go astray, and then, also, it teaches you a great fact, as I take it to be, in the natural history of syphilis, to be arrived at in the same manner, that you may most undoubtedly have all the phenomena of syphilis, even in syphilitic iritis, without one grain of mercury having been previously administered. Iritis is said especially to be a "mercurial symptom." Some of my colleagues and many other surgeons express themselves strongly on this point of doctrine—a doctrine I do not hold at all. This young woman, as Horace says, was striving to drive out Nature, but still it would ever keep returning—

"Naturam expellas furcâ," &c.

She took no mercury; she dosed herself soberly with salts; but still we have the usual course of natural symptoms—an abrasion or an ulcer, probably getting well by cleanliness, and not using any irritating washes; then muco-purulent discharge, next buboes, all cured for the time by salts; then the inexorable spots under her ribbons, as completely copper coloured as ever I saw, and now iritis; but all, I am firmly satisfied, generated without mercury!

You probably know that the surgical world is divided into two opposing, if not hostile, camps: the mercurial and non-mercurial plan of treatment having each its ensign flying, and some battle—some Knights arrayed with their hosts on one side or the other; but of the natural progression of syphilitic symptoms, even as far as iritis, without the agency of mercury, I have had no doubt whatever; indeed, this single case—every bit of which is now coherent and simple—proves it. Do not be misled, then, by the supposition that diseases of the iris or periosteum are due to mercury more than to syphilis, for disease of the iris brook no delay if you wish to preserve the integrity of vision in the organ.—[*Medical Chronicle.*

An Experimental Inquiry into the Effect upon the Mother of Poisoning the Fœtus. By W. S. Savory, Demonstrator of Anatomy and of Operative Surgery at St. Bartholomew's Hospital; Surgeon to the great Northern Hospital.

The structure of the placenta and the character of its circulation—the close and intimate relation which exists there between the fœtal and maternal blood—is naturally appealed to in ex-

planation of the well-known effects produced in the child by various morbid and other peculiar conditions of the maternal system occurring during pregnancy. This intimate relation between the two circulations at the placenta is looked to for an explanation, not only of the transmission of obvious and fully developed disease from the mother to the fœtus, as variola and syphilis, but also of those more subtile and obscure changes which are likewise understood to be capable of affecting the child.

Although the influence thus exercised by the mother upon the fœtus has been known to every one for ages past, and is continually illustrated by striking examples, it is only comparatively recently that the converse relation—the influence of the fœtus upon the mother—has received any attention.

The subject has been most ably brought before the profession, by Dr. Alexander Harvey, in a very interesting series of philosophical papers "On the Fœtus in Utero, as inoculating the Maternal with the Peculiarities of the Paternal Organism."* In these well-known essays, he advances some excellent observations, and cites many cases to show "that an explanation offered by Mr. M'Gillivray, of Huntly, is the true one—viz., that while, as all allow, a portion of the mother's blood is continually passing by absorption (and assimilation) into the body of the fœtus, in order to its nutrition and development, a portion of the blood of the fœtus is as constantly passing, in like manner, into the body of the mother; that as this commingles there with the general mass of the mother's own blood, it inoculates her system with the constitutional qualities of the fœtus; and that as these qualities are in part derived to the fœtus from its male progenitor, the peculiarities of the latter are thereby so engrafted on the system of the female as to be communicable by her to any offspring she may subsequently have by other males."

Now, although we are in possession of absolute facts, which furnish clear and convincing evidence of the direct transmission of what may be termed accidental matter from the mother to the fœtus, not only of certain diseases, but also of foreign substances—as camphor and oil in the experiments of Magendie and D. Williams—yet we have no such conclusive facts in support of the converse proposition. However strong the argument from analogy may be, supported as it is by the record of cases of extreme interest, yet demonstrative evidence is wanting of the direct absorption of foreign matter from the fœtus by the mother. Indeed, the only experiments in reference to this point with which I am acquainted was attended by a negative result.

In his "Compendium of Physiology," Magendie briefly says,

* Monthly Journal of Medical Science, for Oct. 1849, and Sept. 1850.

"I have often injected very active poisons into the vessels of the cord, directing them towards the placenta; but I have never seen the mother suffer from the effects of them."

And this negative result may be supposed to depend upon the fact that after all the communication between the maternal and fœtal blood is only an indirect one, and is therefore limited. It may reasonably be believed to be one office of the cells which intervene between the fœtal and maternal vessels to regulate or control such transmission, to exercise a selecting influence on the materials absorbed, as some other cells in all probability do. It is commonly supposed that the office of these cells is solely connected with the transmission of materials from the mother to the fœtus, one set selecting and separating, and the other elaborating and absorbing them.* Therefore, even if an interchange to the certain extent be admitted, there is still no proof that poisons or other morbid materials, whether arising from within or without, must necessarily pass from the fœtus to the mother.

But in whatever way the argument may be supported, it is certain that two very opposite opinions are expressed by physiologists on the subject. Dr. Harvey, after quoting this sentence from Mr. M'Gillivray, "I am quite aware that many physiologists maintain that, in the highest species of animals, the blood cannot be returned by the fœtus to the mother during utero-gestation," endorses it with the following statement:—"That this opinion is very generally held by physiologists in this country is quite certain. Dr. Alison, for instance, after observing (on the authority of Magendie and of Dr. David Williams, of Liverpool) that camphor and oil injected into the blood of pregnant animals are soon detected in the blood of the fœtus; but that poison injected into the umbilical arteries, although mixing with the blood on its way from the fœtus to the placenta, does not affect the mother; and that fatal hæmorrhage in the mother does not apparently diminish the fulness of the vessels of the fœtus—adds 'so that it would seem that the transmission of fluids is almost entirely from the mother to the fœtus.' Again, Dr. Kirkes, referring to Professor Goodsir's observations as to the intervention of two distinct layers of cells between the fœtal and the maternal portions of the placenta, speaks of the one being, 'probably designed to separate from the blood of the parent the materials destined for the blood of the fœtus,' while the other 'probably serves for the absorption of the material secreted by the other set of cells, and for its conveyance into the bloodvessels of the fœtus'—no idea, seemingly being enter-

* Kirkes' Physiology, 3rd edition, p. 681. Carpenter's Manual of Physiology, 3rd edition, pp. 154–5 and 526.

tained of a converse process.* Moreover, the view taken by most physiologists of the destination of that portion of the fœtal blood which is transmitted to the placenta appears to be exclusively that of *renovation* or *aëration*, by coming into relation with the oxygenated blood of the mother, nothing being said as to *re-absorption* into the maternal system." In a note he adds, "In his 'History of Medicine,' Dr. Alison expresses himself even more strongly on the subject: 'The experiments of Magendie and others have proved that any substance which may be circulating in the blood of the mother finds ready access to that of the fœtus, but that there is little or no transference of fluids in the opposite direction.'" Those authors who express a contrary opinion, cannot refer to any facts in support of it.

As the question at present stands, then, the only demonstrative evidence is that yielded by the experiments of Magendie, and these gave a negative answer. All the rest of the evidence which has been adduced on either side is devoid of proof, is indirect and inconclusive.

This subject was brought before the notice of the Hunterian Society by Mr. Jonathan Hutchinson, in a paper on the "Communication of Syphilis from the Fœtus to the Mother," read there in the latter part of 1856.† It was followed by a very interesting discussion, and it then occurred to me that it should be brought to the test of experiment. I could find no such evidence on record, excepting the experiments of Magendie already referred to, and these had yielded a negative result. But the nature of these experiments appeared to me objectionable; for it seems almost impossible to open the vessels of the cord and inject directly into them, without interfering to a fatal extent with the fœtal circulation.

This was the general plan of my experiments:—

By opening the abdomen and uterus to expose and isolate a living fœtus. Then to inject into it, with the least possible amount of violence, some substance capable of ready absorption,

* It is however, only fair to add that in the latter editions of his work, Dr. Kirkes in a note expresses the following strong opinion:—"Although in the text mention is made only of the passage of materials from the blood of the mother into that of the fœtus, yet there can be no doubt of the existence of a mutual interchange of materials between the blood of both fœtus and parent, the latter supplying the former with nutriment, and in turn abstracting from it materials which require to be removed." The most recent expression of Dr. Carpenter's opinion is to this effect. After giving the common account of the function of the placenta as furnishing materials for the nutrition of the embryo and as a respiratory organ, he adds, "And it is probable, too, that the placenta is to be regarded as an excreting organ, serving for the removal, through the maternal blood, of excrementitious matter, whose continued circulation in the blood of the fœtus would be prejudicial to it."

† This question in relation to the transmission of syphilis had previously been often suggested by various authors, but it is much more fully discussed by Mr. Hutchinson.

and the operation of which is marked by obvious and unmistakable effects. To be sure that no trace of the substance came into direct contact with the maternal tissues. To place the fœtus thus injected in a condition most favorable for the continuance of the circulation, and then to watch for symptoms of the operation of the poison upon the mother.

The poison I selected from some others was strychnia, for these reasons:—

It is extremely active in very minute doses.

It is easily dissolved, and therefore readily absorbed.

Its absorption is rapidly followed by its operation on the system.

The symptoms of its operation are striking and characteristic.

Its effects are not materially counteracted, nor its symptoms marked, by the influence of chloroform.

After some experiments with strychnia dissolved in various menstrua, as alcohol, benzole, &c., I preferred as the most eligible a solution of strychnia in diluted acetic acid. In this way I obtained a very convenient solution of the acetate of strychnia, of sufficient strength.

Twenty-four grains of strychnia were dissolved in seven drachms of distilled water by the addition of one drachm of acetic acid. Twenty minims of this solution, therefore, contained one grain of strychnia.

A certain quantity of this solution was introduced, usually, into the abdominal cavity, through the parietes, by means of Anel's syringe. This little instrument is very convenient for the purpose. The abdominal wall can be easily pierced with its fine point without any violence. The quantity of fluid injected can be accurately calculated, and when withdrawn, the minute puncture is so closed by the natural elasticity of the tissues, when the fœtus is far advanced in development, as to prevent the escape of any portion of the solution.

The subjects of my experiments were dogs, cats and rabbits. Dogs, from their size, are the most convenient, and furnish the most satisfactory results.

From a considerable number of experiments, I select the following ones as fair examples:—

Experiment 1.—A pregnant bitch, a common smooth-haired terrier, weighing about twelve pounds, was rendered insensible by chloroform. The abdomen was opened in the median line, and the uterus was partially drawn out. It was carefully divided over a fœtus. The amnion was punctured, and the fœtus, lively and vigorous, was allowed to escape. It was received upon a napkin, and remained connected with the mother only by the cord. The fœtus was carefully supported, so as to avoid

stretching the cord. The abdominal wall was cautiously punctured with the point of the syringe, and ten minims of the solution (half a grain of strychnia) were injected into the cavity. When the syringe was withdrawn, no fluid escaped. The puncture was so minute that nothing exuded even upon pressure. The fœtus, which struggled slightly after the operation, and then became tetanic, was suffered to remain where it lay, not in contact with the mother.

An incision was then made in another part of the uterus over a second fœtus, which was only partially exposed, and not drawn out. The side of the chest was wiped dry, the point of the syringe was inserted between the lower ribs, and about the same quantity of the solution was injected into the thorax. The piston was slightly retracted before the pipe was withdrawn, and not the least trace of moisture appeared. The part where the puncture was made was carefully watched for some seconds by Mr. Crowfoot and myself, and we both were fully satisfied on that point. That portion of the uterus which had only partially extruded, was now carefully replaced, without any protrusion of the fœtus, then the rest of the uterus, and lastly the fœtus first operated on was returned into the abdomen, and the wound was closed by sutures.

The bitch lay on her side motionless, and breathing tranquilly for eight minutes from the time of the first operation. In about nine minutes slight spasms appeared. These gradually increased in intensity, and continued, with scarcely any intermission, for eighteen minutes. In twenty-eight minutes from the time of the injection the dog was dead.

Five minutes after her death, the abdomen was re-opened. There were two other fœtuses besides those two which had been injected—four in all. While the two which had received the strychnia revealed no signs of life, the other two were still alive and vigorous. They lived some time after separation from the mother, and one which was suffered to escape from its membranes respired and otherwise displayed such evident signs of full development, such as crying, that any doubt of the near approach of natural labour which could have been entertained after a mere inspection of the fœtuses were completely set at rest. The parts were found in the abdomen as they had been replaced, and the fœtus which was operated on in the uterus still remained there.

Now, I am satisfied that in these experiments none of the solution escaped from the fœtus through the puncture, because I ascertained that, if proper precaution had been adopted in the injection, none escaped upon pressure. Moreover, I had learned, from another set of experiments, that when the solution is allowed to come into direct contact with the maternal tissues, as

when injected into the uterine or peritoneal cavity, or when allowed to escape from the fœtus, its symptoms are never delayed for a period at all approaching the length of time which elapsed between the closure of the abdomen and their manifestation in these experiments. The usual period is two minutes, and this is rarely extended to five. The animal is in most instances dead before that period.

But that this source of fallacy did not arise, I have more than once unintentionally obtained still better evidence in another way. Some of my experiments, the earlier ones more especially, were attended with a negative result. Fœtuses were injected and returned into the mother, but no visible effects on her of the poison followed. Prolonged exposure and rough manipulation when the fœtuses were small and feeble, had been fatal to their circulation. But I now see the importance of the negative results which these experiments yielded. The solution could not have escaped from them, or in any way have come into contact with the maternal tissues.

More recently I have performed the following experiment:—

Experiment 2.—I removed two fœtuses, within a day or two of their full term, from the uterus of a cat, immediately after its death from chloroform, having previously placed ligatures on the fœtal portion of the cords. They both were lively. I injected ten minims of the solution into the abdominal cavity of each by perforating the walls with the point of the syringe in the usual manner. When the syringe was withdrawn, the punctures remained dry, and the spots were scarcely visible. No fluid exuded upon pressure. Then, without in any way securing those punctures, I introduced the two fœtuses alive and tetanic into the abdominal cavity of another cat under chloroform, and allowed them to remain there for more than twenty minutes. Not the slightest symptom of strychnia was produced in the cat.

We are naturally reminded by the negative result of these experiments of the impunity with which a mother may carry a dead and decomposing fœtus. In neither case is there any longer a circulation.

In the following experiment the possibility of the fallacy occurring, which has just been alluded to, was prevented:—

Experiment 3.—A cat, far advanced in pregnancy, was rendered insensible by chloroform. The abdomen was opened and the uterus exposed. It was carefully divided at a part to which a placenta was not attached, and a vigorous fœtus extracted in its membranes, which were removed from it. It was carefully supported on a napkin, and into the abdominal cavity about ten minims of the solution were ejected. The portion of integument around the puncture was then carefully pinched up and

secured by a ligature, so as to prevent the possibility of any escape of the solution. A second fœtus was then extracted, and treated exactly in the same manner. Both, with the portion of the uterus, were then returned into the abdomen, which was closed with sutures.

For ten minutes from the period of the first injection, the cat, lay on her side breathing tranquilly. Then slight spasms ensued in the hinder extremities; these gradually increased, and at length passed into violent and general ones. In seven minutes more the cat was dead.

The abdomen was then re-opened, and the ligatures placed upon the punctures in the fœtuses were found still perfectly secure. Both the injected fœtuses were yet alive. Within a few minutes after they were injected, they exhibited decided spasms, and these continued for a long period after the death of the mother frequently to recur. The other fœtues were not affected.

In the next experiment the fœtuses, after being injected, were not returned into the abdomen.

Experiment 4.—A pregnant rabbit, within a day or two of her full term, was rendered insensible by chloroform, and the uterus was exposed by the usual longitudinal incision, and protruded considerably. It was carefully divided over a fœtus, which was immediately expelled, and received on a napkin, remaining connected with the mother only by the cord. The point of the syringe was inserted through the abdominal wall, and about five minims of the solution were injected. None escaped. Five other fœtuses—all but one—were removed and injected in a similar way; from five to ten minims of the solution being thrown into each. The punctures remained dry. In one case the cord gave way. The fœtuses were all fully developed, and very vigorous. Almost immediately after the injection, decided tetanic spasms appeared in all, but each survived and moved actively for some time after. None of the fœtuses were replaced after injection; indeed, it would have been impossible to do so owing to their size. They were allowed to lie outside the mother, and remained connected with her only by the umbilical cords.

At the end of fifteen minutes from the time of the first injection decided tetanic spasms appeared in the mother, and after repeated attacks she died rigid in three or four minutes more. During the spasms of the mother two or three of the placentæ became detached.

The following experiment is a still more striking one:—

Experiment 5.—A large bitch, far advanced in pregnancy, was rendered insensible by chloroform. The uterus was exposed and opened to a small extent, at a spot as far as possible from

the attachment of a placenta. Through this, by means of very gentle pressure, a fœtus enclosed in its membranes was readily expelled. The membranes were carefully divided, and the fœtus now only connected by the cord, was placed in a large, but shallow, vessel of water, conveniently arranged, the temperature of which was about 100°—that is as nearly as possible, the temperature of the fluid in which it is naturally immersed. Into the abdominal cavity of the fœtus, which was kept distant from the mother the entire length of the cord, some two or three inches, twenty minims of the solution (one grain of strychnia) were injected, the fœtus being raised from the water for that purpose. In about two minutes the fœtus, which was vigorous and lively, exhibited decided spasms, and these continued to recur at frequent intervals.

Another fœtus removed in the same manner, and placed in the same water, was similarly treated and similarly affected. In about five or six minutes, a ligature was placed on each cord, and the fœtuses were separated, by dividing the cords on the fœtal side of the ligature. Little or no blood escaped from them. Three other fœtuses were subjected to the same process, and after a few minutes likewise removed. The quantity of the solution injected into each varied from twenty to twenty five or thirty minims. Into one nearly forty minims were thrown. They all exhibited tetanic spasms which, in the majority, continued, though feebly, after division of the cord. The protruded portion of the uterus, which still contained three or four fœtuses, and such portions of the intestines as had escaped, could be only partially replaced, owing to the contracted state of the abdominal muscles.

The mother continued to breathe placidly under the influence of chloroform for thirty minutes from the period of the first injection, and for fifteen minutes after the last fœtus had been removed. At the end of that time very slight twitchings were visible; these became more and more marked, and passed at length into a decided spasm. The spasms, preceded by twitchings, gradually increased in intensity, occurring at intervals of about two minutes. For fifteen minutes I watched some six or seven, to remove any doubt of their character, and then as the effects of the chloroform were rapidly subsiding, I did not choose to prolong the experiment further, and the dog was killed.

In this experiment, all direct contact between the injected fœtuses and the mother was prevented. No communication whatever existed between the injected fœtus and its mother except through the cord, and placenta. It cannot be doubted that the poison passed from the blood of the fœtus to the blood of the mother at the placenta.

These experiments, more especially the latter, are very deli-

cate ones, and unless certain conditions concur they are very likely to fail. When fœtuses are removed from the uterus and exposed, they soon become feeble; the circulation very rapidly declines; and of course they perish the more quickly in proportion as they are young and small. Therefore, in order to ensure success, it is most important that the fœtuses be well developed, near their full term, large and vigorous. It is more difficult, but, nevertheless, quite possible, to succeed when the fœtuses are much younger. For the same reason, and to facilitate the necessary manipulation, the larger the mother is the better. In dividing the uterus, care must be taken not to wound the placenta. This may be avoided by gently raising up the uterine wall between the thumb and forefinger, before cutting it; in this way the absence of placenta can be ascertained. It is also as well to avoid, if possible, dividing the larger veins. For this and for other reasons, the most convenient part of the uterus for division is towards the constricted portion between two adjacent fœtuses (as the placentæ are circularly attached around the dilated portions in which the fœtuses are contained), and at a point most distant from its attachment. In operating on the fœtus, traction of the cord must be most rigidly avoided, for, besides interfering with its circulation, it is very likely to tear a portion of the placenta from the uterus.

All these remarks apply with increased force to the last experiments, where the fœtuses remained exposed, for when they are returned in a feeble condition to the abdominal cavity the warmth of the mother often greatly restores them. In the latter experiments the more fœtuses that can be injected the better, and in a few minutes after the injection of each, it is as well to detach it, for its circulation has then probably almost ceased, and by retaining it the experiment is complicated and the risk of accidental contact of the fœtus with some part of the mother or separation of the placenta is increased. But this more delicate and difficult experiment is doubtless most obviously free from objection.

One or two points in these experiments appear worthy of notice. The great length of time the fœtus survives after the injection of strychnia is remarkable. I think this may be thus explained: When the strychnia kills rapidly, it produces death principally by affecting the muscles of inspiration, thus fixing the chest and so suspending respiration. When strychnia kills quickly it kills by apnœa. This kind of death the fœtus in utero of course escapes, and in it death is probably produced by exhaustion, as in ordinary cases, when strychnia kills more slowly.

Again in my experiments after the mother has died from the effects of strychnia, I have carefully watched for any appearance of tetanus in those fœtuses which still remain untouched in the

uterus: and although the effect of strychnia is so striking in the fœtus when directly injected, I have never observed any of its symptoms in those which I had not poisoned. This fact is most interesting in relation to the present inquiry, and may probably be explained by the short time the mother survives the effects.

A similar remark applies to chloroform. Although in my experiments the mother was invariably reduced to a state of profound insensibility, yet the fœtuses, when exposed, were always active and lively.

I submit, then, that proof is no longer wanting of the direct and rapid transmission of matter from the fœtus to the mother through the blood in the placenta.

Although it has hitherto been the custom, when considering the close and intimate relation between the fœtal and maternal blood, to speak only, or especially, of the effect produced on the fœtus by morbid materials present in, or other unnatural conditions of, the blood of the mother, to say the least, it must be admitted that there is an equally free and direct transmission of matter, though for many reasons a less obvious one, from the fœtal to the maternal blood.

When the influence which the fœtus in utero thus exercises upon the mother shall be fully recognised, it will soon become more clearly understood. At present, it is impossible to estimate the importance of the subject. While standing only on the very threshold of the inquiry, enough is visible to tempt any one beyond. Why should not the investigation of this question lead to results which, although more difficult to obtain, are perhaps not less worthy of research than those useful and extensive ones which have already been disclosed by the study of hereditary transmission of disease?—[*London Lancet.*

Reminiscences of the Treatment of Disease without the use of Alcoholic Stimulants. By John Higginbottom, Esq., F.R.S., Nottingham.

On Uterine Hæmorrhage.

For the first twenty-five or thirty years of my professional life, I had a very extensive midwifery practice, consequently many cases of uterine hæmorrhage, and some of them which caused me intense anxiety of mind for the safety of the patient. The first seventeen years of my practice, I was in the habit of following the example of my medical brethren in giving, as a medicine, alcohol in the form of port wine and brandy, and the tincture of opium. The tincture of opium—a valuable remedy—was given in proper doses; but the wine and brandy were

administered according to the degree of hæmorrhage and consequent depression, often with little attention to either the quality or quantity of the intoxicating fluid, depending on the law of tolerance for safety in such cases.

In these terrific cases, along with the stimulants, were used every local application, as cold water, ice, pressure on the uterus, &c., to cause contraction of the organ. Under such treatment the patient would rally a little; but very soon the sinking pulse, the blanched face and white lips, would indicate the necessity of more wine or brandy, which was immediately given, very soon to be followed by an increased flooding and consequent lowness. This alternate state of reviving and sinking has continued for several hours, when the stomach has become so much distended and irritated by the stimulants and other fluids given as to produce a full vomiting of the contents of the stomach; after this the hæmorrhage has ceased, the patient has gradually recovered, and required nothing more than a little gruel or tea. This happy termination by vomiting does not always take place, but the wine and brandy have been given in such quantities as thoroughly to narcotize the patient; she becomes insensible and comatose, and cannot be roused, and death takes place. Alcohol has caused her death; not the hæmorrhage. The following is a case in point:

In June, 1823, I attended Mrs. M——— in labour; she was of a stout, plethoric habit of body; she had after delivery a very profuse flooding. The usual stimulants of wine and brandy, and also opium, were given her, and the customary local applications were resorted to with very little effect. Her friends became alarmed for her safety, and called in an old physician, without my knowledge, who immediately was dissatisfied with the brandy. He said it was not strong enough, it having been procured from a neighboring public-house. More brandy, supposed to be of a better quality, was procured and given to the patient. The quantity administered was thought quite requisite to keep up the sinking powers of the patient; insensibility and coma ensued, breathing became heavy and laborious, and in about two hours after her delivery she died. The stomach in this instance unfortunately retained its contents; her only safety would have been a full vomiting of the contents of the stomach. In this instance I have always been of opinion that she died from alcoholic poisoning, and not from the hæmorrhage.

The following case will show the value of vomiting in a similar case, and which led me to the disuse of alcoholic stimulants in cases of flooding:

Mrs. C——, a delicate female, about thirty years of age. I had attended her twice in labour in the years 1821 and 1823 each time she had severe flooding directly after the separation

of the placenta. I employed the usual local applications, and administered wine and brandy and tincture of opium. These cases were attended with great anxiety, and I had to remain with my patient several hours before I could leave her with safety.

On her third labour, in the year 1826, I was afraid she would die, after having used all my remedies, and having given her a pint of port wine, and half a pint of brandy, during the three hours after the birth of the child. which proved of no avail: it occurred to me that in both former times in which I attended her, when I had used similar means to check the hæmorrhage, that there was no amendment until she had ejected the contents of the stomach. I was then most anxious that vomiting might take place in hope of relief, as she was rapidly sinking. I thought as vomiting had been so beneficial to her in the former instances, that I was in this case justified in procuring it by giving an emetic. I directly gave her an emetic dose of ipecacuanha; a full vomiting soon succeeded, and a large quantity of fluid was ejected. I was much struck with an expression of my patient, which I had several times before heard in similar cases after vomiting—"Oh, I'm better; I'm better now!" The hæmorrhage ceased directly, and did not return, the symptoms of sinking abated, and the patient appeared soon in her usual state of body, but very feeble; a little plain gruel was all the nutriment given her, and she recovered gradually from the weak state.

I attended the same patient three times afterwards, in the years 1827, 1829, and 1831, and, what is very satisfactory in favor of the secale cornutum, which was about that time coming into use in this locality, I gave her in every case half a drachm of the powder before the birth of the child, a second dose before the separation of the placenta. This remedy had the desired effect of preventing the hæmorrhage, so that I had no further need of the ipecacuanha, or indeed any other remedy.

I have attended patients since that time, when the secale had no effect in checking the flooding, both in my own practice and in consultation; and I have resorted to the ipecacuanha emetic, when other means have failed, and with immediate success.

For more than thirty years I have lost all confidence in the diffusible stimulants, such as wine, brandy, &c., in uterine hæmorrhage, from a conviction that they increase the arterial circulation, and consequently the hæmorrhage. The common practice of giving the patient a little cold water, or vinegar and water, to drink, and keeping the body in a cool state by means of a well-ventilated, cool room, are more likely to restrain the hæmorrhage, and thus preserve the strength of the patient.

The ipecacuanha emetic, in half-drachm doses, I consider a

perfectly safe remedy, which may be used in any case of severe flooding, but I have hitherto given it as a *dernier resort.* I have found the secale cornutum, *if good*, to answer in most cases. In other cases, I have given a drachm of the tincture of opium with decided benefit; if not fully relieved in half an hour, half a drachm more, but I have had very rarely to repeat the remedy a third time; the tincture of opium has the effect of checking the hæmorrhage, and also of relieving the pain.—[*Ibid.*

Valuable Remedy for Dysmenorrhœa and consequent Sterility.

Professor E. D. Fenner presents some valuable considerations on the subject of Dysmenorrhœa, and offers his experience with a new formula. We select the following from the *Medical News and Hospital Gazette:*

"Soon after I commenced the practice of medicine, I received from my brother, Dr. Robert Fenner, of Jackson, Tenn., a *recipe* for an emenagogue which, he said, was not to be found in any medical book of the day, but had been given to him by our father, a practitioner of forty years experience, and he had gotten it out of an old English work, then extinct, written by a Dr. Falk, of London. I was told that it was an excellent emenagogue, more especially in that painful form of obstructed menstruation called *dysmenorrhœa*, and that it was remarkable for almost invariably causing fruitfulness in the cases of young married women.

The following is the original *recipe* and directions:

℞. Gum guiac, ʒi.
Balsam canadens, ʒi.
Ol. sassafras, ʒii.
Merc. corrosiv. sublimat., ℈i.
Rect. spt. vini (alcohol), ʒviii.

'Dissolve the guiac and balsam in one half the spirit, and the corrosive sublimate in the other. Let the guiac and balsam digest for several days; then pour off the clear liquor, mix with the sublimate and add the oil. *Dose*—Ten or twenty drops night and morning in a glass of wine or water, *pro re nata.*'

This was called by Dr. Falk, '*Tinctura Antacrida.*'

I have continued to use this prescription for dysmenorrhœa ever since I first received it, and with the most satisfactory results. I have given it to my brother practitioners wherever I have lived, and they have all pronounced it the best remedy they ever used for this complaint. It is only very recently that I accidentally discovered in the tenth edition of Ellis' Medical Formulary, the same *recipe*, though not exactly the same direc-

tions for preparing it (See page 189 of that work). It is there placed amongst his alteratives, with the commendation of Dr. Emerson and other practitioners of Philadelphia, in lues venera, etc., but no allusion whatever is made to its admirable virtues as an emenagogue. Dr. Falk also used it in lues, and I myself have had some interesting experience of its virtues in that disease, but I shall confine my remarks at present to its effects in dysmenorrhœa and sterility.

Directions.—I usually direct the patient to begin a day or two before the expected period and take twenty-five drops in an infusion of sage or sweetened water, night and morning, until the discharge is freely established; then cease till the next period. In obstinate and severe cases, the medicine should be commenced a week or ten days before the period; and if the pain appears, the medicine should be taken every four or six hours till relieved. The pain usually disappears as soon as the discharge becomes free; but in most cases the discharge comes on without pain after taking a few doses. I have known immediate relief to be given by a single dose taken in the paroxysm; but I have seen cases in which the pain was excruciating, causing shrieks and even violent convulsions. In such I have had to resort to a more prompt and efficient anæsthetic, as the inhalation of chloroform, or the following, which I have often known to act like a charm:

℞. Spirit Camphor, ʒiii.
Chloroform, ʒii.
Tinct. opii., ʒi. M.

S. A teaspoonful in sweetened water once an hour till relieved.

In violent hysterical spasms there is nothing comparable to to the inhalation of chloroform. In the treatment of dysmenorrhœa, it is important to obviate costiveness by the use of aloetic pills. When dysmenorrhœa is relieved by this treatment, conception almost invariably soon occurs in married women."

After giving many cases illustrative of the value of the remedy, he closes with the following incidents, which are striking, both for their significance and the quiet drollery with which they are related:

"I might give numerous cases of newly married ladies in which I was consulted for dysmenorrhœa. This tincture hardly ever fails to restore the healthy function of the uterus, and 'send them on their way,' but not always 'rejoicing,' as the following incident will show. A gay, sprightly and robust married lady, mother of three or four children, and without the least desire for more, after indulging too freely in the fashionable dissipations of the '*gay season*' in New Orleans, began to have symp-

toms of engorgement of the uterus, and more than ordinary pain at her monthly period. I was consulted, and gave the ordinary advice in such cases; urging upon her the necessity of abstaining from late hours, too much dancing, and rich suppers. She disregarded my advice, got worse, and sent for me again. She was now a plain case of dysmenorrhœa, and I knew what would soon cure her; but I also knew that if aware of the probable consequence, she would not take the medicine. So I took the liberty of judging for her what was best to be done under the circumstances, and gave her the tincture. Her next period passed free and easy; but it was not long afterwards that she found, *to her horror*, that she was pregnant. She has since borne two fine children, but I have never ventured to reveal to her the trick that was played on this occasion.

In several instances where the ladies had learned from *experience* the *only danger* of the medicine, after putting it off until they could see no other prospect of relief, have taken the medicine again, and were soon in the condition they expected.

Only a few months since I was consulted by a young married man about the case of his wife, who was suffering greatly with dysmenorrhœa. They had been married about twelve months. The young wife had been afflicted with this complaint during the whole time, and was now very pale and feeble. Getting no relief from the prescriptions of the family physician, they had been induced to consult a *Medical Spiritualist*, one of the various charlatans who practice on the credulity of the people in this city, with great profit to *themselves* alone. He said the spiritualist told him 'his wife would get better and then worse again, and thus go on for a long time, but finally recover her health; and that there was no medicine that would do her much good.' The gentleman permitted her to go on this way for several months, but finding his young wife continually declining, and her monthly pains increasing in violence, he resolved to seek further medical advice. About this time he happened to mention the case to a friend whose wife had suffered in a similar way, and been relieved by medicine obtained from me. Upon this he came to consult me. I prescribed this tincture, with aloetic pills, to obviate costiveness, and at the same time foretold what would be the *probable consequence*, which did not seem to terrify either of them. The very next period passed off free and easy, and she has had no return. Her health is greatly improved, and they are now rejoicing in prospect of an heir.

In the dysmenorrhœa of virgins, a complaint by no means uncommon among our delicate young ladies of the South, I have known this tincture to produce the happiest effects. I have prescribed it in numerous instances, and never knew it fail to give relief when directions were properly attended to. Some

of the most severe and obstinate cases I ever met with were in young girls from the age of fifteen to twenty years. As in married women, these unfortunates sometimes suffer excruciating agony, and even go into spasms. In this emergency I usually prescribe the compound tincture of chloroform mentioned in the preceding portion of this paper."

The Amaurosis of Laziness. (Under the care of Mr. ERNEST HART.)

No other affection of the eye comes more frequently under care, whether in private or in hospital practice, than scrofulous ophthalmia attacking all the various tissues of the eye in turn. Its most frequent, and usually its earliest, seat is the palpebral and ocular conjunctiva. Out of the total number of cases treated by him at this Infirmary, we are informed by Mr. Hart that at least two-thirds are either confined to the mucous membrane, or initiate there and pass on to the other structures. The cornea is the most frequently attacked after the conjunctiva, and the ulceration which so commonly occurs here—due to the softness of the tissue—is frequently followed by opacity. This varies from dense leucoma to a slight want of polish only. It is stated by Mr. Hart to be due to the deposit of a granular lymph between the lamellæ in the former instance, and to the formation of a freshly and irregularly developed epithelial layer in the latter. He has two cases of amaurosis now under treatment—a result of leucoma which is not perhaps so unfrequent as it may be thought to be, and to which little attention is commonly directed, perhaps because its origin and character are not always clearly perceived. The frequent result of leucoma is amaurosis, as in these cases; but an amaurosis of a peculiar character—the amaurosis of laziness. The opacity of the cornea renders vision difficult with the eye affected, and hence the effort necessary is constantly evaded. The whole burden of vision is thrown upon the other eye, and hence it is overworked. From this two evils result: a confirmation of inefficiency and increased amaurosis in the eye which is dimmed by the veil of opacity, and fatigue, weakness, and inflammation of the overtaxed organ. Under these circumstances, the attention of the surgeon is not to be led astray and fixed upon the inflammatory condition of the otherwise sound eye. Remedies applied to this are perhaps somewhat worse than useless. The cure is to be effected by the treatment he adopted—that of compelling its leucomatous fellow to assume a share of work, and so relieve the overstrain. The sound eye should be bandaged, and the necessary effort for vision with the other should thus be made compulsory. Vision rapidly improves, the retina adapting itself to the necessary effort with considerable facility.—[*London Lancet.*

EDITORIAL AND MISCELLANEOUS.

Practice per capita.—We withhold our editorial and much of our miscellany in order to give place to the following judicious remarks upon what appears to be, as we learn from many sources, a great evil in our profession, in certain parts of the country. Although we may not be prepared to adopt the severity of *tone* used by our correspondent, we can yet heartily endorse his sentiments, and feel very much like commending even his indignation:

Messrs Editors:

As one of the objects of a medical journal, is, to expose the abuses of the Profession, and thereby purge it of all corruption, so as to secure a steady course of improvement, as well as maintain its dignity and honor, we propose, at this time, to furnish you for publication an exposition of one *evil*, to which many men, calling themselves Doctors, and pretending to practice the "healing art," have resorted. We allude to the taking of families *per capita*, or by the head.

We regard this as being unprofessional, unjust, mean, and venal. There is such a practice as a mule or a hog-drover paying toll over a ferry or bridge *for so much a head*. Circus companies may sometimes let a man with his family, or his negroes, enter *for so much a head*. Chicken wagoners may sell fowls to a Hotel-keeper *for so much a head*. Stock-raisers may furnish the flesh market *for so much a head*. These are all right and proper, and in keeping with the business. But for a man to practice medicine—that most responsible, time-honored, and noblest of all professions—which has for its high object the preservation of the body during life's temporal existence—upon which so much is relied in the hour of physical suffering and despair—and which has been distinguished in almost all ages for its wise, learned, and great advocates, *for so much a head*, cannot be too severely censured, and ought to receive the condemnation of every philanthropist.

We say it is unprofessional, because its tendency is to bring the Profession into disrepute. It is illegal, because, nowhere in all the past history of the Science of Medicine, can there be found the least semblance of authority for it—neither is it tolerated by any of the regular schools of the present day—nor is it authorized by the medical board of the State: hence it is a usurpation of privilege. It is unjust, because it robs many of patronage which their superior qualifications and honest merits entitle them to. It is mean, because it is beneath the dignity of the Profession. It is venal, because a man hires himself by the year, as he would his own *servant*, and in that way *enslaves* himself.

The practice has been inaugurated, and is still pursued by a few Charlatans, who care nothing for the dignity and honor of the Profession, and are forced to it for want of due qualifications. We have come to this conclusion, because we have never seen a man that was really qualified and learned in the science, that would deign to do such a thing. So generally true is this, that whenever we hear of a man guilty of it, we mark him as a *quack*, and as one who has not medical learning and intrinsic merit enough to commend him to the favor and patronage of the people. We know men engaged in this kind of practice, who are just beginning business, and we must confess it is a very *low* and *niggardly* claim for a young man to set up. Our advice to all such, is, to quit physic, and do something for which they are qualified. Adopt the motto, that if you can be of no honor to a profession, be sure that you are of no disgrace to it. We know of others, who have been practicing for years, and have amassed wealth by a combination of extraneous influences, and now, that young, scientific, and skillful physicians have set up in opposition to them, relying entirely upon their capacity, and contending for a just and full remuneration for their services—their *avarice* and the *devil* have seduced them into the same ignoble practice of taking families *for so much a head*, seeming to care nothing for the interest of the Profession after they have made a "*speculation*" out of it, and contending with the poor young physician, upon a dishonorable principle, for the very last dollar.

We further denounce it as a system of *bribery*. For it is a voluntary inducement offered, to obtain that which rightly belongs to another, by virtue of his superior skill and qualifications. Our doctrine is, that every thing should stand upon its own merits, for good or for evil—for weal or for woe. It is the same glorious doctrine inculcated in Scripture, in the passage, "according to thy works shalt thou be judged"—evidently implying the just reward of merit. Every man, with ordinary faculties of mind, has a talent for something,—and if he will but cultivate it, he may safely calculate on success. We are sorry to assert, that there are many persons who have so *meagre* an opinion of the Science of Medicine, and depreciate its responsibilities and duties so far as to imagine that any ordinary mind may grasp it and practice it successfully. This is enough to verify the fallacy and incompetency of all such, when it is well known that the Science of Medicine is one of the most extensive and recondite in all nature. It is not only difficult to comprehend, and a thorough knowledge acquired by a course of hard and lengthened study and application, but demands research and attention at every step in a man's life. A physician should be a student of medicine as long as he continues to practice it.

We come now to the causes that have engendered this evil. They are two: one exists in the *so-called* Physician, as has been sufficieutly indicated in the above remarks; and the other in his patrons. This is considered a fast age—one of improvement—of enterprise—and of progress, which would naturally suggest the idea of liberality. But such, in the main, is not the fact. For as the people grow richer, their hearts grow more callous, contracted, and fixed upon the idol—mammon. When a man wants to buy an article of merchandize, he goes to the cheapest store, it matters not whether it be Dutch, Jew or American. He consults his purse, and nothing else. So, when he wants a physician, he employs the cheapest—it does'nt matter whether he has ever heard a course of lectures or not—he may be of the same or a different creed. He will employ him by the year, at a small sum, and if he loses half his family, it is better than to pay a learned physician double the amount, or the usual rates, and save all his family. Well, experience and observation have taught us, that cheap things are of little value. Hence we conclude that cheap Doctors, like cheap goods, are of little use.

Many people are ready to cry out against the Profession, as failing to accomplish the object of its institution, and impute to it many hard and unkind things. But we ask, in all candor, how can they expect any better, when they throw all their patronage and influence into the hands of the *cheap* and *illiterate* Doctor, while the educated, intelligent, and skillful physician, who has devoted time, money and labor, for the acquirement of a thorough knowledge of his profession, and upholds its dignity by contending for even customary rates, and refusing to condescend to anything uncourteous and unprofessional—is forced to abandon his profession, and seek other means of support—or plod along through life with a mere pittance as his share of public favor and patronage.

This is certainly a deplorable state of things, and is tending to a degeneracy of the Science of Medicine, at a time when it is thought to be in a high state of improvement and progression. Let this evil only continue a few years longer, and we predict for the science a state of obscurity and bigotry exemplified in the dark ages of the world. The successive teachings of Hippocrates, Stahl, Boerhaave, Cullen, Brown, Broussais, Sydenham, Harvey, Jenner, Rush, Chapman, and many other great and shining lights in Medicine, will be lost, and there will be none to succeed and revive them. Then, instead of having a beautiful Science, as we now have, which harmonizes with the laws of Chemistry and Natural Philosophy, and is so efficient in counteracting and subduing the pathological conditions of human organism, we shall have a mere nominal system—an insignificant wrecked skeleton of the existing mighty

and magnificent ship. What a great calamity it would be to deprive the world of the immense amount of learning, skill, and usefulness that characterize the ranks of the Medical Profession, when it can be so easily maintained by a just and manly reward of the arduous and meritorious labors of the qualified physician.

Patron, we exhort you to reflect upon this subject: for the evil and its remedy are both in your hands. If the science ever does fall, which seems to us inevitable, in view of the evil which we have been discussing, the dreadful curse of the sacrifice must rest upon your own heads. For, as long as you continue to reward medical merit, so long will it assume a high and honorable standard. But whenever you disregard and ignore it, by casting all your influence and patronage into the hands of the illiterate, and the quack, on account of his *cheapness*, as many are now doing, you at once consign it to ruin, decay, and oblivion.

There is another consideration to which we would call the attention of the patron. Suppose one of your family gets sick—are you not bound, as Father or Master, as the case may be, to employ the best medical skill and learning, without regard to *price*, to combat the disease, and, if possible, restore health? But suppose, instead of doing this, you employ one of those *cheap*, illiterate, *yearly* Doctors, and the patient dies, as is frequently the result, then, we ask, upon whose skirts does the blood of the sacrifice rest? Certainly upon yours. Then, if you want good, skillful, and intelligent physicians—such as are worthy of the appellation, and such as you can repose confidence in, in the hour of physical affliction and trial—when all your earthly hopes are at stake—bestow your patronage upon those who merit it, (even if your bill is a little larger,) and you will be vastly benefitted, in the saving of life, and in the discharge of you duty to your family, and the satisfaction that will accrue in the just reward of merit. But when you wilfully pursue any other course than this, you risk life, which is dearer than all things upon earth—subordinate it to money, barter it away as you would *hides* and *tallow*, and thus perpetrate one of the most heinous and unpardonable offences against the law of God and man.

We also call upon the Profession, everywhere, to assist in expunging this evil, now in its incipiency, for it is a monstrous one, and a few years will develope it, when it cannot be eradicated. If there be found any in the Profession so devoid of respect for its dignity and honor, as to resort to this *abuse*, let them receive the condemnation of all men, both in and out of the Profession. Let us have and sustain those in our ranks who are worthy and well-qualified. Let us contend for just and remunerating prices, and maintain all other considerations in keeping with the cause. Then may the hopes and wants of the afflicted be realized in the timely,

skillful, and effectual ministrations of the genuine, true, and enlightened physician. JUSTITIA.

Sulphur and Nux Vomica in Hæmorrhoids.—M. Van Holsbeck recommends the following formula as being rapidly beneficial:—℞. Sulphur loti. sacchar. alb. *aa*, ʒj.; extr. strych. nuc. vomic. gr. vj.; mucil. gum. tragacanth. sufficient to form twenty-four lozenges. The patient is to take two the first day, increasing the dose by one daily until six a-day are taken. He now rests a few days, and then diminishes the dose in the same proportion, until he gets to the two again. If the cure is not complete, he must begin again; but it is rare to find the treatment required for more than a week. During its continuance alcoholic drinks and a too stimulating diet are interdicted. The treatment is applicable to all stages of uncomplicated hæmorrhoids.—[*Druggist's Circular.*

Wind of a Shot.—The following extract from an Indian letter confirms the doubts entertained as to deaths attributed to the "wind of a shot:"—"Brigadier Russell is also about to leave the army, under the advice of a medical board. Never, perhaps, in all the chances of war has there been such an escape as his. A cannon ball cut the gold watch chain at the back of his neck as cleanly as if it had been a pair of nippers, and did him no further injury, except inflicting a shock to his nervous system.—[*Med. Times and Gaz.*

Pennsylvania Medical College.—Dr. T. G. Richardson has resigned the Professorship of Anatomy in the Medical Department of Pennsylvania College, and Dr. J. H. B. McClellan has been elected to the vacant chair.—[*Med. News and Library.*

AUGUSTA, GA. THE HEALTHIEST CITY IN THE UNION.—We are pleased to record the following from the *Constitutionalist* of this city:

"The editor of the Charleston *Mercury*, in a recent article on the mortality of cities, says: 'Looking at the returns of Augusta, Ga., we find it to be, at the present time, the healthiest city in the Union, and having less deaths.'"

SIR PHILIP CRAMPTON'S COFFIN—As any thing which relates to this great Surgeon must be interesting, we insert the following:

"By the singular directions of Sir Philip Crampton, made just prior to his death, the body was placed in a solid Irish oak coffin without any lid; around this was placed a thick concrete of Roman cement, which was made to fill up all the spaces in the interior of the coffin not occupied by the body, which was covered over, and entirely imbedded in the cement, of which nearly five hundred weight was used. The heavy mass was placed within another Irish oak coffin of great strength, which was covered with fine black cloth, on the lid of which was a shield bearing the following inscription: 'Sir Philip Crampton, Bart., died June 10th, 1858, aged eighty-one years.'"—[*London paper.*

SOUTHERN

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ORIGINAL AND ECLECTIC.

ARTICLE XXII.

Observations on Malarial Fever. By JOSEPH JONES, A.M., M.D., Professor of Physics and Natural Theology in the University of Georgia, Athens; Professor of Chemistry and Pharmacy in the Medical College of Georgia, Augusta; formerly Professor of Medical Chemistry in the Medical College of Savannah.

[Continued from page 601 of September No. 1858.]

CASE XXVIII.—Scotch seaman; age 14; light hair, blue eyes, florid complexion; height 5 feet 2 inches; weight 95 lbs. From light ship, lying at the mouth of Savannah river. Was taken sick three days ago.

September 16th, 7 o'clock P. M. Face as red as scarlet; skin in a profuse perspiration, which has saturated his thick flannel shirt and wet the bed-clothes. Pulse 100. Respiration 24: does not correspond with the flushed appearance of his face. Temperature of atmosphere, 88° F.; temp. of hand, 102; temp. under tongue, 103.25. Tip and middle of tongue clean and of a bright red color; posterior portion (root) of tongue, coated with yellow fur; tongue rough and perfectly dry. When the finger is passed over the tongue, it feels as dry and harsh as a rough board. Lies in a stupor—it is almost impossible to arouse him. Great tenderness upon pressure of epigastrium: pressure here causes him to cry out.

℞. Blister, 6 by 6 inches, over the epigastric region. Mustards to extremities. ℞. Calomel, grs. x.; Sulphate of quinia, grs. vij. Mix. Administer immediately, and follow with castor oil in four hours. ℞. As soon as the blister and mustards have aroused the patient, administer sulphate of quinia grs. v. every three hours, up to grs. xv.

Sept. 17th, 11 o'clock A. M. Restored to the exercise of his intellectual faculties, and says that he is much better. Mustards and blister acted promptly, and aroused the patient. The calomel and castor oil acted six times. Rested very well during the night. Skin was in a perspiration during the night. Tongue moist. The bright red color and dry rough state, have disappeared. It is now slightly coated with yellow fur. Pulse 86; respiration 18, regular and gentle. Skin moist and relaxed. Temperature of atmosphere. 87° F.; temp. of hand, 100° 25; temp. under tougue, 101°. Has taken xxij. grains of sulphate of quinia.

℞. Sulphate of quinia, grs. xx.; infusion of Virginia snake-root, f℥xvi. Tablespoonful every three hours. Diet, gruel and flaxseed tea. Urine of a light orange color, a shade higher than normal. Sp. gr. 1008·2. Amount of urine collected during the last 16 hours, grains 8065. It is probable that much urine was lost during the action of the purgative.

ANALYSIS LVI.	Grs. 8065 Urine passed during 16 hours, contained grains	Grs. 12098 Urine calculated for 24 hours, contained grains	1000 parts Urine contained
Water	7830·128	11745·892	970·874
Solid Matters	234·872	352·108	29·126
Urea	83·100	124·600	10·290
Uric Acid	0·160	0·240	0·019
Ext. and Col'ing Matters.	118·216	177·224	4·077
Fixed Saline Constituents.	32·880	49·200	14·038

Sept. 18th, 12 o'clock M. Took a change for the worse this morning—now lies in a stupor. Tongue coated with yellow fur, much dryer than normal; reaction of saliva acid. Pulse 98, feeble; respiration 32. Temperature of atmosphere, 87° 5; temp. of hand, 103; temp. under tongue, 104. Has taken xxxv. grains of sulphate of quinia during the last 30 hours.

℞. A cut cup to each temple, and two to back of neck. Mustards to extremities. As soon as fever remits, give sulphate of quinia, grs. v., every three hours, up to grs. xv. Urine, light straw colored, resembles the urine of Diabetes Mellitus. Sp. gravity 1010. Amount of urea in 1000 parts of urine, 7.970; Amount of uric acid in 1000 parts of urine, 0.029.

8 o'clock P. M. The cut cups and mustards aroused him, and he asked for something to eat. The change, however, was only temporary, and he relapsed again into a state of stupor. Now can be aroused only by violent shaking, and then goes into a profound sleep in a few moments. Tongue, bright red at tip and edges, dry and harsh to the touch, and coated at the superior portion with light yellow fur. Pulse 90; respiration 26. Temperature of atmosphere, 85° F.; temp. of hand, 102° 25;

temp. under tongue, 103° 25. Has taken x grs. of the sulphate of quinia during the last eight hours.

℞. Blister to back of neck; mustards to extremities. Calomel, grs. vi.; castor oil in four hours. Neutral mixture.

Sept. 19th, 11 o'clock A. M. Appears to be better. Intellect more active than last night, but still inclined to stupor. Face still much flushed; tongue moist, red at tip and edges and coated with white fur; papillæ enlarged. Blister upon the back of the neck has drawn. Cathartics acted ten times. Skin moist and relaxed.

℞. Brandy, f ℥ viij.; Infusion of Virginia snake-root, f ℥ viij.; Sulphate of quinia, grs. xv. Mix. Tablespoonful every hour. Continue neutral mixture.

Has just passed 5020 grains of light orange colored urine. Sp. gr. 1004. After standing 50 hours, a very slight deposit of triple phosphate and urate of soda.

ANALYSIS LVII.	Grains 5020 of Urine contained grains	1000 parts of Urine contained
Water	4923·463	980·770
Solid Matters	96·537	19·230
Urea	38·482	8·480
Uric Acid	0·200	0·049
Ext. and Coloring Matters	51·112	9·317
Fixed Saline Constituents,	6·435	1·282

Sept. 20th, 12 o'clock M. Says that he is much better. The brandy, in conjunction with the infusion of snake-root, and sulphate of quinia, appears to have exerted decided beneficial effects. Face still flushed; tongue relaxed, moist, and slightly coated with white fur; papillæ enlarged, and prominent over the whole surface of the tongue. Surface of blister looks healthy. Amount of urine passed during the last 24 hours, grains 3030; sp. gr. 1001; reaction slightly acid; color, very light yellow, like diabetic urine.

℞. Continue brandy, infusion of snake-root and sulphate of quinia.

Sept. 21st, 1 o'clock P.M. Continues to improve. Countenance and intellect bright. Tongue has altered greatly in appearance—it is moist and pale, and very slightly coated with white fur; papillæ slightly enlarged; face not so flushed. Pulse 66; respiration 18. Temperature of atmosphere, 83° F.; temp. of hand, 98°; temp. under tongue, 100°. Skin cool and relaxed. Amount of urine passed from Sept. 20th, 1 o'clock P. M., up to 11 o'clock, (hours 10,) grs. 13013; light yellow color; sp. gr. 1001; reaction alkaline after standing 15 hours. Amount of urine passed from Sept. 20th, 11 o'clock P. M., up to the present time, grs. 5030; sp. gr. 1006. Deep orange color. Amount of uric acid in grs.

5030 of urine, grs. 1.050; amount of uric acid in 1000 parts of urine, grs. 0.200.

Sept. 22nd, 12 o'clock M. Tongue moist and normal in appearance; skin cool; face of natural color. Pulse 65; respiration, 18. Temperature of atmosphere, 84°5 F.; temp. of hand, 98°; temp. under tongue, 99°5.

℞. Quassia and soda; continue infusion of Virginia snake-root and sulph. of quinia, tablespoonful every six hours. Am't of urine passed during the last 24 hours, grs. 20.800; normal in color; sp. gr. 1004.

7 o'clock P. M. Pulse 57; respiration 16. Temperature of atmosphere, 81°; temp. of hand, 98°; temp. under tongue, 99°5. Amount of urine passed during the last 8 hours, grains 7021; sp. gr. 1003; light colored.

Sept. 23rd. *Examination of Blood No. V.*—Clot appeared to be softer than normal. Serum of a light yellow color. Specific gravity of blood 1042.4; sp. gr. of serum 1021.3.

Water		Solid Matters	
In 1000 parts of Blood,	827·901	In 1000 parts of Blood,	172·099
" " " " Serum,	928·370	" " " " Serum,	71·630
(1) " " " Liq. Sang.,	926·937	(1) " " " Liq. Sang.,	73·297
(2) " " " " "	887·034	(2) " " " " "	112·965

Solid Matters in Serum of 1000 parts of Blood, 62·789.

Fixed Saline Constituents,	
In 1000 parts of Blood,	4·041
" " Serum,	4·035
(1) " " Liquor Sanguinis,	4·045
(2) " " " "	6·246
" " Solid Matters of Blood,	23·202
" " " " " Serum,	56·338
" " " " " Blood Corpuscles,	4·584
" " Moist Blood Corpuscles,	1·119
In Blood Corpuscles of 1000 parts of Blood,	0·490
" Serum of 1000 parts of Blood,	3·551

1000 Parts of Blood Contained,

Water,			827·901
Dried Blood Corpuscles,	107·877	Organic Matters,	107·320
		Mineral "	0·490
Fibrin,			1·433
Albumen, Extractive and Coloring Matters,	62·789	Organic Matters,	59·210
		Mineral "	3·551

1000 Parts of Blood Contained,

Moist Blood Corpuscles,	431.508	Water,	323·631
		Organic Matters,	107·320
		Mineral "	0·490

Liquor Sanguinis, -	568·492	Water, - - -	504·270
		Organic Matters, - -	59·210
		Mineral " - -	3·551
		Fibrin, - -	1·433

1000 PARTS OF MOIST BLOOD CORPUSCLES CONTAINED,

Water, - - - - - - - - - -	750·000
Organic Matters, - - - - - - - - -	248·709
Mineral Matters, - - - - - - - - -	1·119

(1) 1000 PARTS OF LIQUOR SANGUINIS CONTAINED,

Water, - - - - - - - - - -	926·703
Organic Matters, - - - - - - - - -	67·380
Mineral Matters, - - - - - - - - -	4·035
Fibrin, - - - - - - - - - -	1·667

(2) 1000 PARTS OF LIQUOR SANGUINIS CONTAINED,

Water, - - - - - - - - - -	887·034
Albumen, Extractive and Coloring Matters, - - -	104·000
Mineral Matters, - - - - - - - - -	6·246
Fibrin, - - - - - - - - - -	2·520

A few days after this observation, numerous small boils appeared over all parts of the body of this patient. These were productive of nothing but pain and uneasiness, and disappeared in the course of two weeks. The patient continued to improve, and was discharged from the hospital.

This case exhibits the following points of interest:

1. The cerebral symptoms were strongly marked. There was a constant tendency, in the active stages of the disease, to profound stupor. The flushed face and hot head and torpid intellect, indicated congestion of the brain. Sinapisms, blisters, cut cups and purgatives, diminished the apparent congestion of the brain, and relieved the intellectual faculties temporarily, but not permanently. Stimulants and sulphate of quinia, so far from increasing the apparent congestion of the brain, diminished it permanently, and relieved the intellectual faculties. Under their action, the red, dry, rough tongue, became pale, moist and soft—under their action, the circulation and respiration were equalized, and diminished in frequency; the temperature was diminished and the intellect restored to its normal exercise.

As the sinapisms, blisters, cut cups and purgatives, were used in conjunction with the stimulants and sulphate of quinia, we cannot assert that the restoration of the functions were due solely to the action of the stimulants and sulphate of quinia. It is evident, however, from the history of the case, that the action of the former was temporary, whilst that of the latter was permanent. It is probable that the recovery of this patient would have been doubtful in the extreme, if either of these modes of treatment had been omitted.

During the height of the disease I had no hopes whatever of his recovery. The brain was more affected than all the other organs. Long after the pulse and respiration, skin and digestive functions were restored to their normal actions, the patient was scarcely able to stand or walk on account of the condition of the brain. His first efforts at walking resembled those of an infant just learning to stand and walk alone. This was not due to the loss of muscular power, for there had been but a slight reduction of the size of the muscles. It was due rather to the disordered state of the cerebro-spinal system.

2. The urine was abundant—of low specific gravity and light color. In these particulars this excretion presented a marked difference from the urine of the cases recorded in previous numbers of this journal.

3. The uric acid was diminished during the active stages of the fever, and under the action of sulphate of quinia.

4. The analysis of the blood shows that the organic matters of the blood corpuscles were diminished slightly, whilst the mineral matters were greatly diminished. The fibrin was diminished in amount, and appeared to be softer than normal. The albumen and extractive matters of the serum were somewhat below the normal standard.

When we consider that this patient was in a state of almost complete starvation, during the height of the disease, it is evident that the malarial poison acted but slightly upon the constituents of the blood. The malarial poison appeared to act almost entirely upon the brain and nervous system. This action may have been greatly increased by circumstances—as peculiarities of constitution, irregularities of habit, and continued exposure to the hot sun on the light-ship.

I was afterwards informed that this boy was in the habit of using ardent spirits freely.

It is probable that one or all of these causes may have predisposed the brain to congestion, and converted a light attack into a severe and dangerous disease. It is probable that the dose of malaria was small, and, aside from these circumstances, would have produced only a mild disease. We are led to this conclusion by the fact, that its effects upon the blood and excretions were comparatively slight.

CASE XXIX. American seaman, native of Philadelphia: age 30; weight 150; height 5 feet 8 inches; brown hair; brown eyes; dark complexion.

August 7th, 11 o'clock A.M. Has entered the hospital in a stupid, torpid condition. It is difficult to arouse him, and then his answers are incoherent.

His companion states that "he has been running up and

down the Savannah river in a steam-tug. One week ago, was attacked with chill and fever, which was treated with sulphate of quinia, by one of his companions. Two days ago took blue pill and castor oil. He is of intemperate habits, passing much of his time in a state of intoxication." Skin hot, but in a profuse perspiration; tongue coated with light yellow fur; pulse 112, moderately full; respiration 38, hurried, thoracic—chest heaving. Temperature of atmosphere, 81° F.; temp. of hand, 103°; temp. under tongue, 104°. The patient breathed through his mouth, was restless and stupid, and hence it was difficult to determine accurately the temperature under the tongue. Has just passed a considerable quantity of clear, limpid, high-colored urine. ℞. Castor oil, f℥ss. Diet, gruel.

August 8th, 9 o'clock A.M. Skin hot and dry; pulse 120. Continues stupid. Urine passed during the night and this morning, clear, high colored, (reddish orange). Sp. gr. 1013. Nitrate of urea well formed—silvery white crystals.

ANALYSIS LVIII.—1000 PARTS OF URINE CONTAINED,

Water,	957·282
Solid Matters,	42·618
Urea,	7·108
Uric Acid,	0·394
Extractive and Coloring Matters,	32·570
Fixed Saline Constituents,	2·621

11 o'clock A.M. Skin moist; pulse 112. During the last three hours the pulse has lost 8 beats to the minute. Respiration 36. Temperature of atmosphere, 80° F.; temp. of hand, 103°. Temperature under the tongue could not be ascertained, on account of the stupid condition of the patient. Castor oil acted six times—stools very offensive; breath offensive—acid. His body has a peculiar, disagreeable smell. Epigastric region somewhat tender upon pressure.

℞. Blister to epigastric region; soda powders. Diet, gruel.

Aug. 9th, 11 o'clock A.M. Worse: stupid. When aroused by shaking, cannot converse intelligently—attempts to pronounce words and fails. Passes his urine and feces in bed. Skin hot and dry. Has a pustular eruption over the surface of trunk and limbs—most abundant over the chest and abdomen. Pulse 112; respiration 40. Temperature of atmosphere, 80°; temp. of hand, 103°5. Stools dark colored and fetid. Blister has drawn, and he has torn off the cuticle with his hand—surface red and raw. Urine of a bright reddish brown color—cloudy, with epithelial cells from the mucous membrane of the kidneys, ureters, and bladder and urethra, and with mucous corpuscles and spermatozoa.

The deposit at the bottom of the vessel consisted of spermato-

zoa, epithelial cells, mucous corpuscles, prismatic crystals of triple phosphate, and small acicular crystals, soluble in hydrochloric acid.

The acicular crystals were in such small numbers that I was unable to determine accurately their chemical constitution.

The presence of the epithelial cells, mucous corpuscles, and spermatozoa in the urine, were due to the action of the cantharadin, absorbed from the blistered surface.

℞. Calomel, grs. xij.; James's powder, (pulvis antimonii compositus,) grs. xxij. Mix, and divide into six powders. Administer one every three hours. Diet, gum-water and gruel. ℞. Apply blisters to the calves of his legs.

6 o'clock P. M. No improvement of symptoms. Very restless. Intellect wandering. Bowels are loose—has several stools daily. Passes his urine and feces in bed. Pulse 104, weaker than this morning; skin not so warm; tongue dry; blistered surface of the epigastric region red, and without any discharge of serous fluid. The blisters upon the legs are very slow in their action.

℞. Camphor water, f℥viij.; Oil of turpentine, f℥ij.; Sugar, ℥ij.; Powdered gum-arabic, ℥ij.; Carbonate of magnesia, ℥j. Mix. Administer a tablespoonful every three hours. Stop the calomel and James's powders. Diet, arrow-root and a small quantity of brandy.

August 10th, 9 o'clock A. M. No improvement of symptoms. Passes his urine and feces involuntarily. Urine of a bright red color; sp. gr. 1012·6; reaction decidedly acid—*contains small quantities of albumen.* It has been carefully tested for grape-sugar, without the discovery of a trace. Amount of uric acid in 1000 parts of urine, 0·296.

11 o'clock A. M. Countenance has a peculiar look of stupidity and anxiety, or rather horror. These two apparently incompatible expressions are combined. Has had two stools this morning. Pulse 120, feeble; respiration, 40; blistered surfaces red and dry; complexion pale, sallow.

℞. Continue the mixture. Administer brandy and arrow-root every hour.

Urine a shade lighter in color than that passed during the night—after standing a few hours, gave off numerous small bubbles, which coated the sides of the glass vessel. After standing 12 hours, a heavy deposit of crystals of triple phosphate, of mucous corpuscles, and of spermatozoa fell.

August 11th, 10 o'clock, A.M. Stupid, almost insensible; expression of countenance, vacant. When aroused, mutters something, inarticulately, for a few seconds, and then relapses into his former state of stupor.

The eruption, alluded to before, is out, quite thickly, on the

back, and is distinctly pustular. Some of the pustules are commencing to slough. His elbows and shoulders, and hips, upon which the weight of his body has rested, are of a dark purplish color, and the skin is commencing to slough at those parts most exposed. This patient has a peculiar disagreeable smell.

Tongue dry and rough; teeth coated with sordes. Pulse 132; respiration 47. Temp. of atmosphere, 80° F.; Temp. of hand, 104°; Temp. under the tongue could not be taken with absolute accuracy; it was about 105°.

℞ Continue mixture. Diet, milk-punch and egg-nog.

After leaving the ward, the nurse raised the patient and placed him upon the night stool. Immediately his respiration became hurried, he gasped for breath, his head fell upon his breast, and the nurse called out that he was dying. He was immediately placed in bed. It is probable, that if he had remained in the sitting posture a few moments longer, death would have resulted from the exhaustion.

12 o'clock, M. *Examination of Blood No. VI.* Color of the venous blood when first abstracted, dark purple, almost black. After exposoure to the atmosphere, the surface of the clot changed to a cherry-red color, and not to the bright-red color assumed by the surface of healthy venous blood, when exposed to the atmosphere. Coagulation took place in the course of ten minutes, and the clot was moderately firm. Under the microscope, the colored blood corpuscles were found united together, forming rolls as in inflammation, and in the blood of the horse. Many of the colored corpuscles appeared to be altered in form and appearance. The colorless corpuscles appeared to be more numerous than normal. Serum, of a golden color, like that which escaped from the blistered surfaces. Specific gravity of blood, 1035; specific gravity of serum, 1021.

WATER		SOLID MATTERS	
In 1000 parts of Blood,	860·976	In 1000 parts of Blood,	139·024
" " " " Serum,	923·786	" " " " Serum,	76·214
(1) " " " Liq. Sang.,	921·233	(1) " " " Liq. Sang.,	78·767
(2) " " " " "	900·473	(2) " " " " "	99·527

Solid Matters in Serum of 1000 parts of Blood, 71·032.

FIXED SALINE CONSTITUENTS,

In 1000 parts of Blood, - - - - - -	7·317
" " " " Serum, - - - - - -	5·480
(2) " " " " Liquor Sanguinis, - - - -	6·489
" " " " Solid Matters of Blood, - - -	52·631
" " " " " " " Serum, - - -	71·902
" " " " " " " Blood Corpuscles, -	42·751
" " " " " " " Moist Blood Corpuscles,	10·649
" Blood Corpuscles of 1000 parts of Blood, - - -	2·795
" Serum of 1000 parts of Blood, - - - -	4·522

1000 PARTS OF BLOOD CONTAINED,

Water,			860·976
Dried Blood Corpuscles,	65·612	Organic Matters,	62·703
		Mineral "	2·795
Fibrin,			2·380
Albumen,	60·105	Organic Matters,	57·985
		Mineral "	2·010
Extractive and Color'g Matters,	10·927	Organic Matters,	8·415
		Mineral "	2·512

1000 PARTS OF BLOOD CONTAINED,

Moist Blood Corpuscles,	262·448	Water,	196·836
		Organic Matters,	62·703
		Mineral "	2·795
Liq. Sanguinis, 737·552	Water,		664·140
	Albumen, 60·105	Organic Matters,	57·985
		Mineral "	2·010
	Ext. and Color'g Matters, 10·927	Organic Matters,	8·415
		Mineral "	2·512
	Fibrin,		2·380

1000 PARTS OF MOIST BLOOD CORPUSCLES.

Water,	750·000
Organic Matters,	239·296
Mineral Matters,	10·649

(1) 1000 PARTS OF LIQUOR SANGUINIS CONTAINED,

Water,			918·579
Albumen,	64.632	Organic Matters,	62·510
		Mineral "	2·010
Fibrin,			2·553
Ext. and Coloring Matters,	14·236	Organic Matters,	11·650
		Mineral "	2·512

(2) 1000 PARTS OF LIQUOR SANGUINIS CONTAINED,

Water,			900·473
Albumen,	81·506	Organic Matters,	78·618
		Mineral "	2·725
Fibrin,			3·206
Ext. and Coloring Matters,	14·815	Organic Matters,	11·409
		Mineral "	3·405

Examination of Urine passed just after the Abstraction of the Blood.—Urine a shade higher than normal; reaction acid; specific gravity 1013·2—slightly cloudy from mucous corpuscles and spermatozoa. After standing 12 hours, the urine threw down a light yellow, almost white, deposit of triple phosphate, urate of soda, epithelial cells, mucous corpuscles, and spermatozoa.

ANALYSIS LIX.—1000 PARTS OF URINE CONTAINED,

Water,	961·112
Solid Matters,	38·888
Urea,	12·304
Uric Acid,	0·592
Extractive and Coloring Matters, Mucus, &c.	22·259
Fixed Saline Constituents,	3·333

August 12th, 7 o'clock A. M. Respiration hurried. Patient is entirely insensible, and is evidently dying. Urine passed at this time, normal in color; reaction acid; sp. gr. 1011·3. When treated with nitric and hydrochloric acids, there was considerable efferescence. Crystals of nitrate of urea, well formed and of a white, silvery appearance.

ANALYSIS LX.—1000 PARTS OF URINE CONTAINED,

Water,	972·728
Solid Matters,	27·272
Urea,	5·228
Uric Acid,	0·158
Extractive and Coloring Matters,	18·543
Fixed Saline Constituents,	3·030

This patient died one hour and a half after this observation, at 8½ o'clock A. M.

(2) AUTOPSY FOUR HOURS AFTER DEATH.

Exterior.—Muscles full, well developed. Body appears to have lost but little flesh during sickness. Universal sallow color.

Head.—Dura mater perfectly natural; arachnoid membrane opalescent (pearl colored) in most parts. There were different degrees of this opalescency, from almost perfect transparency to semi-translucency. This change was especially evident in the neighborhood of the large blood-vessels, and in those portions of the arachnoid which covered the depressions between the convolutions.

Blood-vessels of pia mater somewhat more distended with blood than usual, but not so much, however, as to account for the cerebral symptoms during life.

Substance of brain firm, and not more congested with blood than normal. Weight of brain without membranes, grs. 21000, which equals ozs. 48: equals lbs. 3, avoirdupois. The appearance of the structure and condition of the brain, and its blood-vessels and membranes, do not correspond to the condition of congestion, effusion or softening, which the cerebral symptoms led us to expect. The brain was not examined microscopically, and there may have been minute changes in the delicate structures, chemical or physical, which escaped the observation of the naked eye. This is possible, but not probable. It is hardly probable, or possible, that profound alterations could take place in so deli-

cate an organ as the brain, without some changes in its color or consistence, palpable to the naked eye.

Chest.—Lungs normal in appearance and structure; lower portions more congested with blood than the superior. Old adhesion of the pleura in several places. Weight of lungs 10,320 grains.

Heart.—Normal in size. Right auricle and ventricle presented the appearance of incipient fatty degeneration. Columnæ carneæ of left ventricle remarkably well developed. Weight of heart, 4440 grains.

Abdomen.—Liver externally of a slate color. When cut, the surface of the incision was of a dark bronze color, and appeared to contain more blood and bile than normal. The liver presented the true malarial color.

Gall bladder filled with bile of a greenish, black opaque color, when seen in mass, and of a gamboge yellow color, when spread out in thin layers.

Structure of liver, with reference to firmness, appeared to be normal. I did not discover any softening. Liver cells appeared to be normal in structure, under the microscope. Their color appeared to be a shade darker than usual, inclining to a light green. Blood of liver dark, and did not change to the arterial hue when exposed to the atmosphere.

Filtered decoction of the liver of a bright golden color, and resembled, in this respect, the serum of the blood. After this yellow colored decoction of the liver had remained twenty-four hours, it changed to a dark brown color. When the liver was boiled with a strong solution of potassa, it dissolved rapidly and completely, and the solution resembled in color venous blood, when viewed in mass. In thin layers, the color was of a bright purplish pink.

The liver also dissolved completely and rapidly when boiled with concentrated nitric acid. The same complete dissolution took place, but more slowly, when the liver was allowed to remain in cold solutions of potassa and nitric acid, without boiling. The decoction of the liver was carefully tested for grape sugar—not a trace was discovered.

Weight of the liver, 25,642 grains, equals 3 lbs. 11½ ozs.

Spleen.—Externally of a dark slate color, two shades darker than the liver. Enlarged, lobulated. There was a small additional spleen of the size of a rifle ball. This presented the same slate color, as the large spleen.

Structure of the principal spleen, soft. When pressed gently between the fingers, the tissues appeared to give way.

The contents of the cells of the spleen (pulp or mud) was of a dark reddish brown. When exposed to the atmosphere, this color was not altered. Under the microscope, the pulp was

found to consist of numerous colored and colorless corpuscles and granules. Weight of spleen, 7,920 grs., equals 1 lb. 2 ozs.

The lymphatic glands in the region of the liver and spleen, were larger and darker and more congested with blood, than normal.

Kidneys.—Normal. Weight, 5,760 grains, equals 13 ozs.

Alimentary Canal.—Stomach. Internal surface of stomach, colored yellow with bile. As far as the unaided eye could ascertain, the mucous membrane was continuous and unaltered in structure.

The blood-vessels of the mucous membrane were filled with blood, and several spots were more engorged with blood than the rest of the surface, presenting an ecchymosed appearance.

The mere stagnation of the blood in the vessels and capillaries of the mucous membrane is not a pathological condition. To the naked eye, there were no pathological alterations in the structures of the stomach.

Intestines.—The color of the intestines, externally and internally, was darker than usual. The small intestines contained fecal matters, epithelial cells, mucous corpuscles, and mucus, colored yellow with bile.

Blood-vessels of the mucous membrane of the small and large intestines injected with blood. The mucous membrane was most injected with blood, and presented a purplish color, in the last eight feet of the inferior portion of the ileum. This engorgment of the blood-vessels was greatest in the immediate region of the ilio-cæcal valve.

The solitary glands were numerous, enlarged, elevated and distinct, and of a brown color.

When the intestines were held up to the light, blood-vessels, engorged with blood, were seen passing to each gland. The blood-vessels supplying the solitary and Peyer's glands, were more engorged with blood than those supplying the mucous membrane generally. These solitary glands were most numerous in the neighborhood of the ilio-cæcal valve, and were found scattered over the superior portion of the colon, and over the cæcum, and over eight feet of the inferior portion of the ileum.

Peyer's glands were enlarged and elevated. These glands were of various sizes, from one quarter of an inch to three inches in length, and from a quarter of an inch to half an inch in breadth. They occurred at intervals of from one to two inches from each other, and extended from the ilio-cæcal valve, along the mucous membrane of the ileum, for about nine feet. The blood-vessels around these glands were engorged with blood. This part of the mucous membrane of the ileum, studied with the solitary and Peyer's glands, was far more injected with blood than the stomach, jejunum, or superior portion of the

ileum. Although these glands were enlarged, elevated, and injected with blood, still they could not by any means be compared to the condition of these glands, in an advanced stage of typhoid fever.

It is however interesting that a small dose of castor oil caused an unusual action upon the bowels, and also that the fever resembled, in the continued elevation of the temperature, and pulse, and respiration, typhoid fever.

We will now state the points of interest presented by this case:

The Pulse was feeble, and varied from 104 to 132 beats in the minute.

The Respiration was hurried, thoracic, and varied from 36 to 47 in the minute.

The Temperature under the Tongue varied from 104° F. to 105°.

The Temperature in the Hand varied from 103°F. to 104°. The temperature of both the trunk and extremities was remarkably uniform. When we compare the rapidity of the circulation and respiration, and the temperature of this case, with these phenomena manifested in the cases of intermittent fever, reported in former numbers of this journal, (see pp. 377, 393, 436, 449) it is evident that the elevation of the temperature corresponded more accurately with the increased action of the circulatory and respiratory systems in the latter, than in the former. The pulse and respiration were more accelerated in this case, whilst the temperature did not rise higher than that of intermittent fever.

The state of the Skin varied: sometimes dry, and at others, bathed in perspiration.

Tongue dry and coated with fur; and towards the termination of the disease, the tongue and teeth were coated with sordes. It is evident from these facts that there was no distinct remission of the febrile excitement.

The Urine was copious: of low specific gravity: of higher color than normal in the earlier stages of the disease. Twenty hours before death the urine changed to its normal yellow color. The urine contained small quantities of albumen. The urea was diminished relatively to the extractive matters. We cannot say absolutely, because the whole amount of urine excreted was not determined. The extractive matters were increased relatively to the other constituents of the urine. The uric acid was normal in amount.

The Blood exhibited profound alterations. The dried colored corpuscles were only 65·612, and the moist colored corpuscles, 262·448 in the the thousand parts. They were, therefore, diminished more than one half. Many of the colored corpuscles were altered in shape and appearance, and had in a great meas-

ure lost the power of changing from the venous to the arterial color. Many of them united together and formed rolls, as in the blood of inflammation. The fibrin was not diminished. The serum was of a golden color, and low specific gravity. The albumen was diminished, whilst the extractive matters of the serum were increased.

The mineral matters of both the blood corpuscles and liquor sanguinis were diminished relatively, but not absolutely. That is, their diminution corresponded with, but did not exceed the diminution of the other elements of the blood—the diminution of the mineral matters appeared to be due solely to the diminution of the solid elements of the blood—the remaining elements of the blood possessed the usual amount of mineral matter.

The pustular eruption, the offensive smell, the stasis of the blood in the parts of the body exposed to pressure, and the tendency of these parts to slough—all indicated alterations in the constitution of the blood, and derangement of the capillary circulation.

The loss of muscular power, exhaustion, stupidity, coma, low muttering delirium, insensibility to pain—all indicated derangement of the cerebro-spinal system.

The alterations in the actions of the capillary and general circulations, and of the respiration—the profound alterations in the blood—the alterations of the secretions and excretions, and of the structures of the liver and spleen, and of Peyer's and the solitary glands of the intestine, were all indicative of derangements of the sympathetic system of nerves.

Our knowledge of the early symptoms, and pathological changes of this case, do not permit an arbitrary decision as to which system of nerves was affected primarily. The fact that the post mortem examination revealed (to the naked eye) no prominent lesions of these two systems of nerves, would seem to indicate that the poison or poisons acted primarily upon the blood, destroying and altering the blood corpuscles, the active agents in the elaboration of the elements of the secretions, and of the muscular and nervous systems.

When the proper chemical changes in the blood were altered, when the compounds for the secretions, and nutrition, of the nervous system were altered, or not elaborated, then both, the cerebro-spinal and sympathetic systems, manifested aberrated action. As the circulation and respiration, and the secretions and excretions, and the action and integrity of the organs depend, in great measure, upon the integrity of the nervous system, it is evident that the derangement of the cerebro-spinal and sympathetic systems, through the derangement of the blood and secretions and excretions, would in turn act in concert with the disturbing agent or agents, and thus still greater derangements of the solids and fluids would be produced.

Another theory may account for the changes, and that is, that the poison or poisons acted primarily upon one or both the grand portions of the nervous systems, and the cerebro-spinal and sympathetic systems, singly or combined, in turn altered the actions of the organs and apparatus, and the secretions and excretions, and chemical and physical actions, over which they presided.

In the present state of Medical science, we are not able to decide positively upon the truth of these theories, because the ultimate facts are wanting. What is the poison or poisons which we have assumed to exist and act upon the organs and tissues, solids and fluids? What is the relation of these substances, physically, chemically, physiologically and pathologically, to the cerebro-spinal and sympathetic systems, to the blood corpuscles and elements of the blood, organic and mineral, and to the organs, tissues, and secretions and excretions?

In other words, what physical, chemical, physiological and pathological changes are they capable of producing on the solids and fluids of the human body, and what effects would these changes have upon the development and action of the vital and nervous forces?

These questions have not as yet been answered. Until they are answered, we will broach our hypotheses as hypotheses, and not as truth.*

The destruction of the colored corpuscles—the golden color of the serum—the slate color of the liver upon the exterior, and bronze color in the interior—the color of the bile—the absence of grape sugar from the structures of the liver—the slate color of the spleen and the disorganized state of its tissues, and the inability of its pulp to change from the dark reddish-brown to the arterial color, gave decided evidence that this was a case of malarial fever.

There were, however, other symptoms and other lesions, which indicated that there was something besides malarial fever.

The cerebral and nervous symptoms—the continued febrile excitement without intermission—the loose state of the bowels—the unusual action of a small dose of castor oil—the enlarged and congested glands of Peyer, and solitary glands of the intestines—indicated the presence of typhoid fever.

The history of the case, (the recent attack of intermittent fever,) and the fact that the glands of Peyer showed the marks of recent, only partially developed, inflammation and pathological

* These relations of the Nervous System to Febrile Phenomena have been discussed, at length, in an Essay, (now in type for the 11th volume of the Transactions,) read before the American Medical Association, at Washington, D. C., May 5th, 1858, by Henry F. Campbell, M. D.—[EDTS. SOUTHERN MEDICAL AND SURGICAL JOURNAL.

changes, and not the changes produced by typhoid fever of only moderate standing, lead us to the conclusion that the remittent fever preceded, or was at least simultaneous with the appearance of the typhoid fever.

The treatment of this case was radically different from that of all the cases of intermittent and remittent fevers, which we have as yet recorded.

The typhoid symptoms, masked to a great extent those of remittent fever, and our diagnosis was partially, but not wholly incorrect. The plan of treatment was correspondingly partial and incorrect. We considered, and treated the disease as uncomplicated typhoid fever, when we should have considered and treated it as typhoid and remittent fevers combined. The malarial fever was left entirely out of view, and marched on speedily and unchecked to a fatal issue.

The true mode of treatment would have been the free administration of sulphate of quinia, stimulants (brandy, carbonate of ammonia, and oil of turpentine,) and nutritious, stimulating diet (wine-whey, milk-punch and beef and mutton soups, and arrow-root), and the application of revulsives. Purgatives should have been rigidly avoided.

If this mode of treatment had been pursued, it is probable that the patient would have had a chance of recovery.

We will now proceed to consider several cases, which illustrate in a forcible manner, the fact which we have stated, and demonstrated in several previous articles in this journal, that in malarial fever the blood undergoes profound alterations.

CASE XXX. Irishman—age 26: height 5 feet 11 inches; weight 170 lbs.; black hair; black eyes; full, dark-brown beard and mustache. Has been in America (New York) nine years, and in Savannah three months. During this time, he has followed, steadily, the occupation of a baker.

Sept. 11th, 12 o'clock M. Has just entered the hospital with remittent fever. His pulse is accelerated, but feeble, and his complexion shows the effects of malarial fever. Says that he has been sick for one week: has been living near the Albany and Gulf railroad, in a low, malarious situation.

Under the action of sulphate of quinia and stimulants, the febrile excitement disappeared in the course of four days. The patient, however, was left in a very feeble condition—complained of great weakness; his pulse was feeble, the action of the brain slow, and he had a peculiarly disagreeable smell, which was not permanently removed, either by water or by a change of clothing. Under the action of tonics, he recovered sufficiently to walk about the ward; but continued, however, weak, low spirited, and indisposed to action.

Sept. 27th. Complained of a want of action upon his bowels. A mild cathartic was administered.

Sept. 28th. Has a cough. The wind has been from the North-east for some time, and the weather has been cool and damp, and epidemic catarrh is prevailing. About two-thirds of the patients in the hospital are suffering with the influenza. This patient was up, and about the wards, assisting and nursing the patients, all this day. He was up and about, when I went the rounds of the wards, at 9 o'clock P. M. Shortly after this he complained of oppression, difficulty of breathing, and loss of muscular power.

Sept. 29th, 9 o'clock A. M. During the night, took a sudden and remarkable change for the worse. Respiration spasmodic, and sounds as if the air-cells, bronchial tubes and trachea, contained large quantities of fluid—loud rattling sound in the throat. The churning, rattling, gurgling, crackling sounds of the lungs and trachea, are very loud, and can be distinctly heard over the upper wards of the hospital. Muscular power completely exhausted, lies upon his back, and is unable to turn upon either side. Surface of extremities cold; surface of trunk cool, several degrees below the normal standard. The temperature of the extremities does not differ essentially from that of the surrounding medium. The expression of his eyes and countenance, and his efforts to converse, show that he is intelligent. He is, however, entirely unable to articulate or expectorate.

Sinapisms were applied to the extremities, epigastric region and chest, and stimulants were administered freely. These did not produce any beneficial effects—did not arouse the circulation, and did not increase the animal temperature, because the supply of oxygen, necesrary for the chemical changes which generated the physical, muscular and nervous forces, was cut off. The mustards scarcely reddened the skin.

The patient continued in this state, with a gradual diminution of power, until 1 o'clock A. M. the next morning—when the painful respiratory sounds were hushed in death.

(3). AUTOPSY 8 HOURS AFTER DEATH

Exterior.—Body in good condition, not emaciated—limbs full and round; muscles of trunk and extremities covered by a thick layer of fat; face and hands sallow and sun-burnt; surface of the skin which had been covered by the clothes was fair.

Head.—Dura-mater presented the usual appearance. Arachnoid membrane transparent; blood vessels of pia-mater filled with blood. When the dura-mater was removed, an ulcer in the substance of the brain was discovered, occupying a position near the centre of the superior surface of the left hemisphere of the cerebrum. This ulcer was three-fourths of an inch in length,

half of an inch in breadth, and about one-eighth of an inch in depth. The walls were thickened and much harder than the surrounding brain. The blood-vessels of the surrounding pia-mater and brain were congested with blood, and there was an effusion of a small quantity of bloody serum between the arachnoid and pia-mater, in the immediate neighborhood of the ulcer, but nowhere else. The appearance of the ulcer, and the congestion of the blood-vessels around, by no means accounted for the death of the patient. The ulcer appeared to be of long standing. The thickened walls, the absence of pus, and the sound state of the structures of the brain around, show, not only that the ulcer was of long standing, but also that it was rapidly healing.

The existence of this ulcer will account, in part, for the dull, lethargic state of the intellectual faculties, but not for the death of the patient.

The ventricles of the brain contained a small quantity of clear serum. The structures of the brain presented the usual consistence and appearance.

Chest.—Heart, normal in size: the left ventricle contained a large, light yellow fibrinous clot, attached to the chordæ tendineæ and carneæ columnæ, and extending through the ariculo-ventricular opening into the auricle. This clot was firm in texture, and weighed one ounce.

The left ventricle contained a small light yellow clot. The aorta also contained a small flattened, riband-like, light yellow clot. These clots were evidently formed previously to death, when the circulation was exceedingly feeble.

Lungs.—The lungs were greatly inflated, and did not collapse in the slightest degree when the air was admitted into the pleura. They were congested with blood, and resembled liver. When handled, they were found to be remarkably heavy, and felt more like liver than lungs. When cut, the air-cells, and large and small bronchial tubes, were found to be filled with serous fluid and numerous fine bubbles of air. When the lungs were squeezed, pints of this serous fluid flowed out. In many portions of the lungs the serous fluid was clear—in others it was reddish. The fluid resembled serum in all respects, and was not mucus.

Here, then, we have the cause of the death of this patient. He was drowned.

Abdominal Cavity.—Stomach, pale and perfectly healthy in appearance. Intestinal canal, from the stomach to the anus, pale and healthy in appearance.

Liver.—The normal reddish-brown color of the liver was changed in most parts to a mixture of light bronze and light olive. In several places the color of the liver resembled the

normal color. In two circular spots, about three inches in diameter, the liver was of a dark-bluish, slated color, like that of a recent case of malarial fever. The cut surface of the liver approached more nearly to the normal celor than the exterior. The blood of the liver, after exposure to the atmosphere, assumed a red, arterial color.

It is evident, from this examination, that the structures of the liver were recovering from the effects of the malarial fever, and the organ was regaining its normal color.

Spleen—slate colored, enlarged and softened. The pulp of the spleen dark purplish brown. It did not change to the red arterial color, so rapidly as the pulp of healthy spleens. The change of color, however, was much greater than that of the pulp of the spleen in a recent case of malarial fever.

This organ, like the liver, appeared to be recovering from the effects of malarial fever.

Kidneys—healthy.

We believe that we have now all the facts necessary for a rational explanation of the phenomena presented by this case.

The malarious poison and its effects had produced profound alterations in the blood and capillaries, and liver and spleen, and secondarily affected the nervous system. The patient, although weak and lethargic on account of these pathological alterations, and the ulcer upon the brain, was nevertheless in a fair way of recovery. The alimentary canal had resumed its healthy actions, the liver and spleen were fast recovering, and he was gaining strength daily.

We can safely assert that, if no other disease had occurred, the lesion of the left hemisphere of the brain, and the effects of the malarial poison, would not have proved fatal.

In this state of slow convalescence, the patient was suddenly seized with the prevailing influenza. The mucous membrane of the bronchial tubes and air-cells was irritated. The irritation of the mucous membrane was followed by congestion of the blood-vessels and capillaries of the lungs. The capillaries were in an enfeebled state, and the blood in a watery, altered condition. Healthy limited inflammation was impossible. Diffused inflammation of all the structures of the lungs resulted. The serous portion of the blood poured into the air-cells, bronchial tubes and trachea—the supply of oxygen was in a great measure cut off—the chemical changes of the solids and fluids, in a corresponding degree, checked—the physical forces, heat and electricity, and the nervous force, developed by these chemical changes, were, as a necessary consequence, correspondingly diminished.

The immediate cause of the death of this patient was a deprivation of oxygen, and perhaps the partial retention of the

carbonic acid gas. We may say with truth that he was drowned.

The attack of malarial fever appeared at the time to be mild, and it is highly probable that all its effects were aggravated, and a fatal issue determined by the injurious effects upon the constitution of this patient, of his occupation and previous habits. He was a baker. As a general rule, this class are unhealthy, and easily succumb to disease. This will be illustrated at a future time, by another fatal case of remittent fever, occurring in this class.

The only two bakers which entered the hospital whilst it was in my charge, died from the effects of malarial fever, and their occupation.

The following remarks of C. Turner Thackrah, have an interesting bearing on this case:

"Bakers are generally pale and unhealthy. The temperoture in which they are placed is seldom below 80°, and often as high as 100°. The heat of the oven is rarely lower than 180°.

"Bakers are subject to disorders of the stomach, to cough and rheumatism.* The two former of these two affections arise, I conceive, from the dust which is largely inhaled.

"In the Plague of Venice, we find, from *Mercurialis*, that the bakers, and other persons in similar employments, suffered most. In the Dict. des Sciences Médicalés, it is stated that during the Plague at Marseilles, in 1720, all the bakers died. The debility produced by great heat, probably induces this susceptibility to disease.

"Bakers work by night; and from this change in the time of sleep, they have been supposed to suffer as much as from the dust of employ. Observation, however, on the health of watchmen, and others, does not support the opinion."—(*The Effects of Arts, Trades and Professions, on Health and Longevity, by C. Turner Thackrah, Esq.* London, 1832, pp. 133–134.

CASE XXXI. Irishman—laborer and boatman: age 30; height 6 feet; weight 150 lbs.; tall, spare frame, light hair, blue eyes; pale, sallow complexion. Has been running on flat-boats and rafts, up and down the Savannah river, between Savannah and Augusta, for the last twelve months. Habits irregular—addicted to the use of ardent spirits. Says that his constitution has suffered much from the exposure to the hot sun and night air on the river, and also from the intemperate use of ardent spirits.

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* In a report of a Hamburg Institution, it appears that rheumatic fever seized one-sixth of the bakers, and but one-fourteenth of the cabinet-makers, and one-fifteenth of the tailors. Raudices gravedines, ac pectoris morbi, ut pleuritides, peripneumoniæ.—RAMAZZINI.

" Merat says a great number of bakers are in the hospitals."

Sept. 20th. "A flat, laden with wood, which he was bringing to the city, was sunk in shoal water." He was all day in the water, up to his waist, fishing out the wood. This night had a chill, followed by fever. The fever went off before morning, and on the next day was employed again in the water. The chill returned at night, and was followed by fever. Has been sick, without any medical attendance, until the present time, September 27th. Pulse 106; respiration accelerated, labored; skin hot and dry; countenance distressed—has a haggard, anxious look; complains of great thirst, of pains in his back and bones, and of great exhaustion. His pulse, although rapid, is feeble, and his forces appear to be completely exhausted. His fever remitted slightly on the next day, but returned on the 29th inst. Under the action of large doses of sulphate of quinia, stimulants, sinapisms, snake-root tea, and milk punch and wine whey, and brandy and arrow-root, the febrile excitement subsided, the urine regained its normal hue, and on the 4th inst. his pulse was 70, and respiration 18—temperature normal, and function of skin normal; and although apparently very feeble, was able to be up and about the ward.

During this attack, the saliva was acid, and the urine copious: from 20,000 to 25,000 grains were exereted daily. The specific gravity was correspondingly low, from 1012 to 1014. The abundant discharge of urine was due to the large quantities of water which his thirst led him to take, and also to the diuretic action of the infusion of snake-root.

Throughout the attack his pulse was feeble and his forces greatly exhausted, and he required close attention and the free administration of stimulants.

October 5th. This morning absconded, clandestinely, from the hospital.

Oct. 8th. Has returned. Pulse 120; skin hot and dry; respiration accelerated, labored; complains of great pain in the back of his head and neck—these parts are swollen, and painful upon pressure.

As the 5th inst., on which he left the hospital, was the day of election of the city officers, it seems probable that he may have received a blow upon the head. This, however, he stoutly denies. ℞. Cold-water dressing to back of head and neck.

Oct. 9th. His head has been shaved, and the tissues above the occipital bone, and above the left temporal and parietal bones, are swollen, and the skin looks black and is ulcerated in several places. The swelling extends down along the neck, and reaches the superior portion of the left shoulder. To the finger, the swollen parts feel as if there was a collection of fluid beneath the skin. Says that he is suffering intense pain. Countenance distressed and haggard; pulse 128; skin hot and dry; respiration thoracic, labored, accelerated.

Oct. 10th. Pulse 160, feeble; skin hot; respiration spasmodic and labored. In addition to the intense pain in the back of his neck and left side of the head, he complains of intense pain in his chest. The pain in the chest cuts short the respiration and renders it spasmodic. His countenance is expressive of great agony and terror.

Oct. 11th. Pulse 140, rapid and very feeble; respiration 24, labored, thoracic, spasmodic. The pain in his chest is intense: he groans and cries out at every breath. The expression of his countenance is indicative of great agony, terror and horror. Was restless and delirious during the night, and during his delirious visions spoke and acted as if he was engaged in mortal combat. Has no hope of himself, and refuses all medicine. The back of neck and back and side of head is much swollen, and when pressed with the hand there is a distinct fluctuation.

Hoping that a discharge of the pus, or fluid, would afford relief, a free crucial incision was made at the most prominent part of the swelling. Nothing but blood issued. The hemorrhage was so great, that it was necessary to check it, by the application to the wound, of a compress, saturated with the tincture of muriate of iron.

Oct. 12th. During the night was delirious—would rip out the most terrible oaths, and cry out that the devils were after him—had beaten him severely, and were endeavoring to throw him out of the windows. At other times, he would speak and act as if he had been in mortal combat, and was wreaking vengeance upon an imaginary antagonist. These actions excited the suspicion, that the injury on the back and side of the head was received from a blow.

The patient died at 1 o'clock A. M., this morning.

(4). AUTOPSY 9 HOURS AFTER DEATH.

Exterior.—Body much emaciated; back and left side of neck much swollen. The inferior surface of the trunk and neck presented a mottled appearance, from the settling of the blood by gravitation, in the most dependent parts of the body. On the left buttock, just below the position of the glenoid cavity, was a black, gangrenous spot, about one inch in diameter. An incision showed that the change of color was confined entirely to the skin. On the right leg, there were the marks of an extensive ulcer, upon the skin covering the tibia.

The cicatrix presented a purplish, angry color.

When incisions were made into the swollen parts of his neck, and back and side of head, the spaces between the muscles, the meshes of the fibrous tissue surrounding and connecting together the muscles and the fibrous tissue of the skin, were found to be completely filled and distended with golden-colored serum.

Head.—Dura mater healthy. *Arachnoid membrane* transparent throughout its extent over the hemispheres of the brain. At the base of the brain, it was slightly opalescent.

Blood-vessels of *pia mater* not more filled with blood than usual. The cortical and medullary substances of the cerebrum, and of the cerebellum, the pons variolii, the medulla oblongata, and superior portion of the spinal marrow, appeared natural in consistence and color.

Ventricles of brain contained f ℥iv. of golden colored serum.

The superior longitudinal sinus of the dura mater contained a golden yellow elongated clot, the diameter of which was about one half that of the longitudinal sinus.

Chest.—Heart somewhat enlarged. Pericardium contained f ℥i, of golden serum. All the cavities of the heart contained golden colored clots. The right auricle had a large golden colored clot, which was attached to the carneæ columnæ of the ventricle, and the chordæ tendineæ of the tricuspid valves, and extended through the auriculo-ventricular opening into the right auricle. The left ventricle and auricle also contained a large golden colored clot, which was in like manner attached to the carneæ columnæ and chordæ tendineæ of the auriculo-ventricular valves. The aorta, carotids and pulmonary arteries contained elongated golden-colored clots, having diameters nearly equal to those of the arteries. All these clots were firm, and appeared to be almost organised.

Lungs.—The lungs did not collapse when the cavity of the thorax was opened. Exterior surface of the pleura, covering the lungs and lining the walls of the thorax, covered with coagulable lymph of a golden color. Adhesions were numerous, but as yet not strong on account of the soft, fresh condition of the coagulable lymph, which was evidently but recently effused, probably within the last 70 hours. This inflammation of the pleura accounts for the severe pain in the chest during life.

The lungs were much congested with blood, and when cut they resembled liver. The bronchial tubes and air-cells contained much serum. The amount of serum was much less, however, than in the previous Case XXX. The anterior surface of the middle lobule of the right lung had a dark blackish red spot, about one inch in diameter, which resembled at first sight the wound from a sharp instrument.

The examination of the exterior of the chest, and interior surface of the ribs, showed neither wound nor fracture of the ribs. When closely examined, this portion of the lung was found to be more congested and solidified than the surrounding portions, and would in all probability, if the patient had survived, been the seat of an abscess.

Liver.—Liver of a light bronze color. The color is lighter

than that of a recent attack of remittent fever, but resembles the color of a liver which was recovering from the effects of remittent fever. Cut surface of a light bronze color, and of not such a deep and decided bronze as the liver of a patient who had died from a recent attack of malarial fever.

The right lobe of the liver had upon its under surface a slate colored spot three inches in diameter, which resembled in all respects the liver of a recent case of malarial fever. When an incision was made across this spot, the cut surface presented for one-sixth of an inch, the true malarial hue, below this it approached more nearly the normal hue. The liver appeared to be somewhat enlarged. The weight, however, was not ascertained. Its structure did not appear to be materially altered.

Spleen.—Much enlarged, and of a dark slate color. Although much softer than a normal spleen, it was much harder than a spleen of a recent case of malarial fever. This organ, like the liver, appeared to be just recovering from the effects of malarial fever. Weight of the spleen, grains 13562, equals ozs. 31.

Kidneys appeared to be somewhat enlarged. The calices, infundibula and pelvis of the kidney, contained a fluid resembling (to the naked eye), in all respects, pus.

Alimentary Canal.—Stomach enormously distended with gas. Mucous membrane pale and healthy in appearance. Small intestines and colon healthy in appearance to the naked eye.

The following appears to be the cause and history of this last attack:

The patient left the hospital when he was in an exceedingly feeble condition, after a severe attack of remittent fever. It is probable that upon election day he indulged his taste for ardent spirits. The wind was from the northeast, and the weather damp and cool, with occasional scuds of rain and mist. Exposure to this cool damp wind, fresh from the ocean, and the low grounds and swamps of Georgia and South Carolina, not only during the day, but probably during the night also, in a state of intoxication, induced a severe attack of pleuro-pneumonia.

The swelling on the back of his head, was due, either to a blow, or to inflammation in the cellular tissue and muscles, analogous to the inflammation of the lungs, and probably arising from the same cause. The large amount of golden-colored serum which was effused into the cellular tissue of the neck and head, indicated the altered condition of the blood. The determination of the true mode of treating this case was exceedingly difficult.

Here was a patient whose blood had been depraved, organs impaired, and forces exhausted, by dissipation, intemperance, and exposure, and by a severe attack of malarial fever, suddenly attacked with pleuro-pneumonia of both lungs, and a

painful inflammation of the cellular tissue and muscles of the neck and head. The usual treatment for pleurisy and pneumonia was impossible. A single bleeding would have taken life immediately, or at all events hastened the fatal issue.

He could bear neither purgation, starvation, nor tartar emetic. The only rational plan of treatment was to support the constitution and strengthen and relieve, if possible, the congestion of the internal organs, by revulsives. The only hope was that nature would work her own cure.

This was the plan of treatment which we adopted.

Many other points of interest in this case might be noticed, but we defer them until a future time, when we hope to generalize all the facts and phenomena observed.

(To be continued.)

ARTICLE XXIII.

Medical and Medico-legal Notes of a Case of Extra-Uterine Pregnancy. By G. HARRISON, M. D., of Macon, Ga.

On the 10th of June last, I was called to see a servant girl, of one of my patrons, who was suffering from abdominal or uterine pains, at intervals of six or eight minutes, indicating that she was threatened with a miscarriage. I judged from her size, in a lying position, that she was near the full period of utero-gestation; but on investigation I found that she was (according to her and her mistress' statements) only about the fifth month. Learning these facts, I immediately gave a teaspoonful of laudanum, which soon arrested the pains.

After leaving, I heard nothing more from her until the month of August, two months after I was first called to the case; when I was sent for again about three o'clock in the morning, to see the girl, with a request, that I would be in great haste, that she was thought to be dying. On my arrival, I found her dead. A report was soon put in circulation that she had been killed—as there had been a difficulty the day before between her and her mistress, who had stricken her several blows. This gave rise to a post-mortem examination. After the necessary preparations, the abdomen was opened, by a crucial incision through its walls, exposing to view a great quantity of blood, which was carefully removed by the sponge, when a fœtus was seen, sepa-

rated from the cord, lying loosely with the other contents of the abdomen. The fœtus was removed and examined; no marks of injury could be detected on it, and it was concluded, judging from its size and general appearance, that it could not be more than a five-month child. The examination was continued, and it was found to be an extra-uterine fœtation of the ovarian class. The uterus, with its entire appendages, were removed, and we now have them together with the fœtus in a state of preservation. The uterus presents no unnatural appearance—possibly a little enlarged.

Two facts connected with this case deserve notice, which I will give, before proceeding to remark upon the general interest of the case. Attached to the placenta were two ligaments, independent of the cord, one about six inches long, connecting with the transverse colon; the other about four, connecting with the body, just above the point of the ilium. How these attachments happened to be made at such remote distances is a matter of some little astonishment, while other parts were so much more convenient, as might have served the same purpose —is left as a matter of speculation for the curious.

In a medico-legal point of view, this case has become one of some interest from the fact, that Rogers, the owner of the woman, refused to pay five hundred dollars, a balance due for the purchase of the woman and her two children, alleging that he had bought her and paid a high price for her, because of her pregnancy, and the future prospects of raising children from her. Rogers alleged in his plea that the woman was warranted to him sound, and produced a warrantee of soundness, a fact which defendant did not pretend to deny. Yet the seeds of death had been sown anterior to the purchase, and of right he ought not to pay any more. The reason for the plea was not based on the unsoundness of the woman, but upon the fact that she had in her system at the time of sale that which would inevitably produce death. To prevent a suit the parties agreed to leave it to arbitration, under the late law, known particularly as "Judge Cone's arbitration law." A jury of three very intelligent gentlemen was selected, the witnesses were summoned and sworn, and their testimony taken. After which, Thomas P. Stubbs, Esq., attorney for Rogers, proceeded to the investigation of the facts as proved. It was proved by several witnesses

that the woman was represented by Mrs. Jeffers, her former owner, as being pregnant at the time of sale, which induced her to ask more for her than she otherwise would have done. In addition to the testimony there present, Mr. Stubbs introduced the sayings of the woman to her physician when called to visit her professionally, to show that she was pregnant at the time of sale, judging from the ordinary symptoms usually taken as the best evidence in such cases, viz: suppression of the menstrual flux, which had ceased on her two months before the sale—morning sickness, etc.

He next proved by Dr. Fitzgerald, who assisted in the post mortem examination, and myself, that the woman was pregnant and of the class above specified, and under such circumstances death was inevitable.

Judge Nisbet, the counsel for Mrs. Jeffers, admitted the warrantee of soundness, but insisted that the negro was sound at the time of sale, and that all the facts taken together showed no breach of warrantee. He showed that the kind of pregnancy was no evidence that she was not sound, but rather good evidence that she was a healthy woman. He also proved that a suppression of the menstrual flux was not always an infallible sign of pregnancy, and that most or all of the symptoms mentioned in this case, might have arisen from a suppression, produced from other causes. He insisted upon the rejection in toto, of all the sayings of the woman, and showed from the statute laws of Georgia, that her testimony was inadmissible and could not be relied on, even in this case. He, therefore, contended that the plea was not sustained: putting it upon its own merits, assuming that the woman was pregnant at the time of sale, a fact which they had failed to establish, insisting that the suppression had been produced from another cause.

The examination of the witnesses being through, Mr. Stubbs proceeded briefly to argue the case before the jury: he commented upon the testimony, showing that he considered that it made out his case, and thought that he ought certainly to be entitled to a verdict, saying nothing about the sayings of the woman, which he contended should be taken by all means in this case. He urged this fact forcibly on the minds of the jury, and in support of his argument, produced cases which had been decided by the Supreme Courts of Kentucky and Tennessee.

and a case by the Supreme Court of this State, where the sayings of negroes were admitted to prove the existence of long standing disease—the doctors who testified being allowed to use the statements of the negroes when called to visit them, to complete their testimony. He concluded his argument by pleading the justness of his cause, and asked the jury to release him from the farther payment of the purchase money, as he thought he had clearly shown that the seeds of death had been sown prior to the sale of the negro.

Judge Nisbet commenced his argument by admitting, that if Mr. Stubbs could prove positively that the seeds of death had been sown, in this case, prior to the sale, it would be good grounds for the release of defendant from all liability, but in this he had failed. He said, that he had not proven this fact by any witness, for all had testified according to the sayings of the negro and Mrs. Jeffers, which, as to the negro, was not good, as he would proceed to show. He insisted upon rejection of the sayings of the negro entirely, and would now show from the best authority that the woman could not have been pregnant at the time Rogers bought her. He read from Ramsbotham's Midwifery to show that ovarian pregnancies seldom if ever passed the second or third month, rarely reaching the fifth, and never exceeding the sixth. He read a number of extracts from different authors, showing the strength of his position, and concluded his argument by a few extracts from Beck's Medical Jurisprudence and a short comment on the statute laws of Georgia, against the propriety of negro testimony as against white persons, as rebutal to the decisions of the courts, read by the opposite side; that the facts set forth in the plea were not sustained; that Rogers ought to comply with his contract, and pay the balance of the purchase money.

I have the opinion of two distinguished gentlemen, both teachers of medicine, one saying that he believed the woman was pregnant at the time of sale; circumstances and appearances, and the woman's statement (which is "good evidence in medicine if not in law,") give sufficient ground for the belief; but think that the arbitrators did right in requiring Rogers to pay, putting it to his charge as a bad and unfortunate speculation. The other gives no opinion relative to the pregnancy, but believes that the verdict ought to have been different; be-

cause of the high price paid for the property, and that in justice a division of the loss would have been equitable, since the whole would have fallen on the other party, had she not been fortunate in selling.

Had the case to be tried again, I would give it as my opinion positively, that it was a seven months' pregnancy, taking all the circumstances into view, notwithstanding most of the authorities—indeed, all which I have consulted, take the opposite grounds—and say that ovarian pregnancies rarely, if ever, pass the fifth month.

ARTICLE XXIV.

Remarks on the Alleged Deleterious Effects of Honey. By VICTOR LA TASTE, Pharmaceutist, Augusta Ga.

GENTLEMEN:

I have been making various observations, enquiries, &c., with a view of solving the question, whether honey is, within itself, a poisonous substance, but must acknowledge a total failure up to the present time. I know that there is a prevailing opinion in favor of the affirmative of the question; but, then, is that sufficient to establish the fact, any more than that turnips will grow better, or soap more successfully made, if the seed of the one are planted, or the ingredients of the other mixed in particular reference to certain stages of the moon? I hope, in this enlightened age, such superstitious notions are confined to the illiterate. In the progress of my investigations, I addressed a note to the Editor of the "Druggist's Circular," and asked to append his answer, which may be found in the last number of that excellent journal.

"You may be correct in your opinion, that the notion that honey is sometimes poisonous is one of the popular errors of the times. It is perhaps difficult to prove it to be so; but common opinions have generally some foundation in fact. It is known to most persons that the quality and flavor of honey is modified by the sources from which it is gathered. It may therefore be logically inferred that the change in quality and flavor may be so great as to render it pernicious to human health, when it is used as food. What the changes are that take place in the organs of the bee, we cannot know; but that changes do take place is extremely probable, as the saccharine matter of the

nectaries of flowers are not exactly identical with the characteristic properties of honey. Yet the change effected in the elaboration of honey, is not sufficient to eliminate all the peculiarities of the flowers from which the materials are obtained.

"Several cases of poisoning, from eating honey, are recorded in the New Jersey Medical Reporter, for Nov. 1852. A few cases of this kind are not sufficient, certainly, to establish the fact, but they lead to strong suspicions. The argument, that honey may sometimes be poisonous, is one of the *post hoc, ergo propter hoc* kind."

All that the learned Editor has said may be strictly true; still I am of the same opinion—that honey is quite harmless; and I think so, because my experience with the bee teaches me that this insect has too much sagacity not to know the difference between those flowers having noxious properties and those that have not. It is also true, that naturalists differ as to whether honey is a secretion of the bee, or whether it exists already formed in plants. I believe that it does exist already formed, and deposited by the bee just as it was gathered. If this were not so, the honey gathered from the buckwheat, and that from the white clover, would have the same appearance—whereas, that from the latter is much whiter: proving, also, that whatever chemical change may take place in the stomach of the bee, if any, that the quality of the honey does not partake of the change. But leaving all theory out of the question, does it not appear that if honey is poisonous, cases of poisoning ought to be more frequent, taking into account the quantity that is used? And again, when you physicians prescribe the use of honey, do you do it with the same understanding as when arsenic is prescribed, or do you recommend it as an innocent adjunct? I would be glad to have your opinion in full.

Epithelial Cancer of the Anus and Rectum. By T. B. Curling, Esq., F.R.S., Surgeon to the London Hospital.

The parts of the body most prone to epithelial cancer are those in which a junction takes place between the skin and mucous membrane. We see this in the lips, and in the extremity of the penis, and in the prepuce. The anus, though less frequently attacked than these parts, is nevertheless liable to this form of cancer. Its occurrence, however, at the verge of the rectum, and within the bowel, has been scarcely noticed by

writers, and there are no satisfactory accounts of the results of operations performed for its removal from this situation. This may be owing, in part, to the disease being somewhat rare, but is more probably due to the circumstance that epithelial cancer has been distinctly recognised only in recent years. The following cases in which growths of this character were successfully excised seem deserving of record, as a contribution to our knowledge of this disease:

Case 3.—*Epithelial Cancer of the Rectum cured by Excision after repeated Failures of Treatment.*—Mrs. M....., aged forty, an English lady married to a German, but without having borne children, consulted me in April, 1855, on account of an obstinate disease of the rectum. On examination, I found a large, elevated and slightly indurated sore, occupying the whole of the right side and part of the back part of the rectum, just within the sphincter muscle, and extending up the bowel the distance of about an inch and a half. The sore was somewhat larger than a crown-piece. There was slight bleeding from the surface after the removal of the finger. The chief symptom she complained of was a frequent smarting pain, which became more severe after an evacuation. At this time there was usually a slight discharge of blood. There was no obstruction in the passage. The lady looked pale and anxious, but in other respects seemed free from disease. It appeared that the complaint of the rectum was first noticed two years before. At that time she was residing in Germany, and she consulted the late Professor Siebold, of Jena (Saxe-Weimar), who excised the diseased part in September, 1853, whilst she was under the influence of chloroform. She recovered slowly from the operation, and remained apparently well until July, 1854, when a return of the disease was noticed, and the complaint shortly became as painful as before. She subsequently went to Paris, and in August placed herself under the care of a German surgeon practising there. He made repeated applications of a caustic nature to the sore, and finding them unsuccessful, at length proposed the actual cautery, which was used in February, 1855, the patient being placed under the influence of chloroform. She remained under the care of this gentleman, altogether six months, but according to her account, she derived no benefit from his treatment, and was not free from the shooting-pains any part of the time. She was induced, therefore, to come to London for further advice, and at the recommendation of Swayne of Clifton, consulted me.

By getting the patient to strain, and by introducing my finger into the vagina, and pressing in a direction to evert the sore, I managed to get a tolerably good view of the part. It was an irregular, spongy-looking ulcer, of a deep-red colour.

Judging from the characters of the sore, I had little doubt that this was a case of epithelial cancer of the rectum, and that the disease had been only imperfectly removed in the various proceedings for its extirpation. After careful consideration, I proposed the operation of excision, but considering the failure of the treatment previously adopted, I advised her husband to take another opinion. Mr. Hilton, a few days afterwards, met me in consultation, and fully agreed with me that the disease could be entirely removed with the knife. The disappointment which they had experienced naturally led both the patient and her husband to distrust a repetition of excision. I consequently saw nothing more of them for a month, during which period they sought other advice, and also communicated my proposal to Professor Siebold, who wrote and recommended her to submit to the operation, when they again applied to me.

May 30th, 1855.—The bowels having been well relieved by castor oil, the patient took chloroform, and I then excised the growth, taking care to cut wide of the disease so as to extirpate all the morbid parts. In doing so, I removed nearly the whole of the sphincter muscle on the right side. By carrying the point of the forefinger of the left hand beyond the upper margin of the ulcer, and cutting over it, I made sure of excising completely the portion of the disease which was deeply seated in the rectum. Several large arteries which bled freely were at once secured. This was attended with a little difficulty, owing to their depth in the pelvis consequent on the retraction of the levator ani muscle. The wound was afterwards plugged with sponge. My friend, Mr. Hamilton, of the Richmond Hospital, Dublin, being in London, accompanied me to the operation, and gave me his valuable assistance. No unfavorable symptom followed. The wound healed very slowly, but steadily; and by August 9th, had quite closed. For some weeks after the operation, the patient lost the power of retaining the fæces; but it was regained by the time the wound closed, except when the bowels were much relaxed. The contraction at the anus was less than might be expected considering the amount of substance, and of the sphincter muscle removed. The aperture admitted the passage of the forefinger without difficulty.

Nearly three years have elapsed since the operation; and during this period I have repeatedly examined this lady, who has naturally remained anxious respecting a recurrence of her disease. In February this year, the parts were quite sound. There was no warty growth, nor any appearance of a return of the disease. She experiences no pain in the part, and the passage is free and ample.

The diseased part, when examined in the microscope, exhibited the characters of epithelial cancer.

Case 4.—*Epithelial Cancer of the Anus and Rectum removed by Excision.*—E. C....., a stout, married woman, aged forty-nine, the mother of several children, of pale complexion, but in tolerable health, was admitted into the London Hospital, January 11th, 1855, in consequence of a disease of the rectum. It appeared that she had suffered from what she believed to be piles for about sixteen years, and had been subject to bleedings. About three months before her admission, her surgeon, the late Mr. Aitkin, of Kingsland, excised a tumour from the anus, which she described as being the size of a hen's egg. The part healed, but afterwards ulcerated, giving rise to the present disease. Since its formation, she had suffered sharp irregular pains in the part, and soreness during the passage of stools. None of her family had suffered from cancer. On examination I found an ulcerated sore occupying the right side of the anus, and extending some distance into the rectum. It was about the size of a crown-piece, and not very hard. Its edges were raised, ragged, and slightly overlapping; its surface irregular. A small piece detached from the sore, and examined in the microscope, exhibited the characters of epithelial cancer. There were also some warty growths in the vicinity of the large sore, and on the opposite side of the bowel, but they were neither hard nor ulcerated; and I did not regard them as cancerous.

On the day after her admission, the bowels having been well relieved, I excised the cancerous growth, taking away a considerable portion of the sphincter muscle on the right side. There was smart hæmorrhage from several vessels, their orifices being retracted and deeply seated. With some trouble they were secured, and the wound was afterwards plugged. She bore the operation very well without chloroform, which she objected to take. An astringent draught with opium was given after the operation, the bowels remaining unrelieved until the fifth day after the operation, when they were acted on by castor oil. She quite lost the sharp pains, and the wound soon began to heal. The soft warts about the anus were touched with potassa fusa, under which application, repeated three or four times, they gradually disappeared. She was discharged from the hospital on the 14th of April, the wound being quite healed. The anus was contracted, but it readily allowed the passage of the fore-finger, and no difficulty was experienced in defecation. She was also able to retain her motions as before. There was still a strong disposition to warty growths about the anus; and after her discharge from the hospital, she returned occasionally to have the potassa fusa applied to them. A lotion of the nitrate of silver was also kept to the part. After a time she ceased to attend; and in January, 1856, she was again admitted in consequence of a mass of soft warts having sprung up close to the

cicatrix at the anus. They were not ulcerated, and caused no pain; but being apprehensive that they might undergo cancerous degeneration, I thought it desirable to remove them. Chloroform was given, and they were excised on the 28th. The tumour, on minute examination, proved to be simple epithelial growths, or hypertrophy of the normal elements of the part. The wound healed favourably, and she was discharged in the beginning of February, and recommended to keep a rather strong nitrate of silver lotion to the part. The tendency to warty productions in the skin above the anus, though partially restrained by the lotion, was, however, quite remarkable, and in September of the same year she was admitted into the hospital a third time, on account of fresh growths having arisen. They were slightly prominent, and exactly similar in character to those removed in January, and free from ulceration; but she complained of their being painful. Allowance, however, must be made for their repeated recurrence having made her anxious and apprehensive of a return of the cancerous disease. The warts were removed this time by the repeated application of a caustic composed of muriate of antimony, one part; chloride of zinc, one part, and plaster of Paris, three parts. This composition formed a sort of paste very convenient for use, but it caused a good deal of pain, which lasted some hours, and had to be alleviated by full doses of opium. She remained in the hospital until the middle of November. The warts had not entirely disappeared, but she was anxious on account of her family, to return home.

In February, 1857, I again admitted her on account of large flattened warty growths around the anus, in two considerable masses, and one small one. There was ulceration on the surface of one of the former, with some amount of induration, and this was the seat of a good deal of pain.

On the 12th, I examined these growths, and at one spot near the verge of the anus, applied some strong nitric acid. The patient was under the influence of chloroform during the operation.

In a few days the nitrate of silver lotion was applied to the wound, which healed favourably, without further contraction of the orifice, and all pain ceased. There was afterwards some indication of a rising of fresh warty growths, but it was checked by the application of strong nitric acid. I should now have discharged my patient cured, but for some weeks a glandular swelling had been forming in the neck, on the left side, just beneath the lower jaw, and it ended in an abscess, which was opened on March 26th.

About a week afterwards she was seized with erysipelas of the face, which unfortunately had a fatal termination on the

8th of April. The body was examined, but there were no enlarged glands, indeed no internal organic disease.

About thirty years ago, M. Lisfranc performed, in Paris, some bold operations for the removal of cancerous rectums. Those who witnessed these formidable excisions gave sad accounts of the results, such as death from hæmorrhage or from peritonitis, and subsequent obliteration of the passage, but they reported no permanent successes. The operation was generally condemned by British surgeons, and I know no instance of its repetition in this country. The objections justly made to the excision of cancers of the rectum do not apply, however, to cases of epithelial cancer at the extremity of the bowel, and the cases just related show that a considerable portion, not only of the anus, but even of the rectum itself, may be removed with a satisfactory result. Excision is, indeed, the treatment best adapted to the entire removal of an epithelial cancerous growth of any great size in this part. Powerful caustics, even the actual cautery, failed to obtain a cure in Case 3. There is this great advantage in the recourse to the knife, that the surgeon can make pretty sure of thoroughly removing all existing disease; whereas the extent of the operation of a caustic is somewhat uncertain; it may destroy too much or too little. It may be objected that in Case 3, the first operation of excision was not successful, the disease having returned; but it seems highly probable that Professor Siebold was not then aware of the real nature of the lesion, and regarding it as an innocent growth, was not so careful to excise freely all the morbid parts. We have some ground for this conclusion, not only from the rarity of the disease, but also from the circumstance that the distinguished surgeon when appealed to, twenty months afterwards, for his opinion respecting a repetition of the operation which I then proposed, advised its performance. The length of time—nearly three years in Case 3, and upwards of two years in Case 4—which elapsed after the operations, without a recurrence of the cancerous disease, is sufficient to show that in each instance the growth was entirely removed.

Case 4 is remarkable also for the strong tendency which existed to the formation of warty growths—a tendency which was limited to the skin in the immediate vicinity of the contracted anus, and which did not implicate the rectum. Dr. Andrew Clark, who examined the mass removed by operation in January, 1856, a year after the excision of the epithelial cancer, had no hesitation in determining the simple character of the growths. They consisted of areolar tissue, hypertrophied papillæ, and enormously accumulated epithelial cells of the cutis. From the fact that these elements had preserved their normal relations; that the cells had not invaded the subjacent tissues; that there

were no nest, or granule cells, and no heterogeneous forms of any kind, it was inferred that the growth was innocent. The warts which sprang up afterwards were removed by escharotics, which caused considerable pain, and my experience of the action of caustic on morbid growths connected with the skin, convinces me that they produce, as in this instance, more suffering than the knife. It was very necessary to get rid of these warty growths as they were renewed, not only on account of the irritation they produced, but also because of their liability to degenerate into cancerous disease.

These cases show that a large portion of the sphincter muscle may be excised without seriously weakening the retentive power of the anus, or contracting the orifice so as to produce any important impediment to the passage of stools.

I am not acquainted with any recorded case in which a growth ascertained to be an epithelial cancer of the anus or rectum has been excised. It is very probable, however, that operations have, in some few instances, been performed for this disease. Thus, Mr. Herbert Mayo mentions having removed from a woman, forty years of age, a painful indurated ulcer, which extended round the rectum, half an inch within the anus. She died two years afterwards of abdominal inflammation, when the cicatrix had begun anew to ulcerate.* Dr. Bushe also states that he also excised a cancerous transformation which commenced, apparently at the verge of the anus, and was confined to an inch and a half of the intestine. The wound healed rapidly, and the patient's health afterwards improved.† In a future communication I shall adduce some more cases of epithelial cancer of the rectum, but which were unfit for operation. They will serve to illustrate further the character and progress of the disease.—[*London Lancet.*

On some of the Inflammatory and Obstructive Diseases of the Cœcum; with Remarks on the Abuse of Violent Purgatives. By W. R. Rogers, M. D.

The author commences by alluding to the slight and cursory notices of these diseases in systematic treatises on medicine, and how frequently they are confounded with essentially different diseases of the intestinal canal. They are of frequent occurrence, are dangerous, and often fatal, and are characterized by a train of symptoms which render their recognition certain. He believes that the cæcum may be the seat of fatal diseases without any other part of the digestive tube being implicated; and that

* Observations on Injuries and Diseases of the Rectum, 1833, p. 212.
† Treatise on the Anus and Rectum. p. 294.

it often is first in the chain of causation of other disorders, with which it has been generally *believed* to be only accidentally related, these evincing the most marked disturbance, while the cæcum apparently exhibits but little disorder. Thus its diseases are not unfrequently mistaken for hysteritis, cystitis, enteritis, peritonitis, puerperal fever, and pelvic abscess. The author quotes Tiedemann and Gmelin, Drs. Copland, Carpenter, and others, to prove the importance of the cæcum in the animal economy, partaking of the nature of a stomach in the gramnivorous and ruminating animals, and that it is the viscus in which the last act of digestion is performed, secreting an acid, albuminous, and solvent fluid, and also pouring out of its numerous follicles an unctuous and oily material, with hydro-sulphuretted gases, to be eliminated from the economy. Thus, like the lungs, kidney and skin, it is a depurating organ, so that when costiveness exists there is danger of these excretions being reabsorbed and contaminating the blood. He states that he had within the last twenty years met with not a few cases of these diseases, some of which he would class as "acute," others "chronic," inflammation of the cæcum—tuphlo-enteritis; they had not appeared to arise from the ordinary causes of inflammation—viz., exposure to the vicissitudes of the weather, or alternations of temperature, but seemed to be produced by some mechanical, exciting and irritating cause, the lodgement of impacted, hardened feces, undigested food, fruit-skins, and stones of fruit, and concretions of varied and different kinds, and often arise while the person is in good health. The symptoms may begin mildly, and gradually proceed to greatnr intensity; or they may, in excitable subjects, be violent from the onset. There is but little febrile disturbance compared with the local pain and suffering; less anxiety of countenance than in enteritis; pulse not small, or much quickened at the commencement; there is great tension and tenderness over the cæcum, so that the least pressure cannot be borne; there are no rigors; the pain is constant, does not intermit, and its area goes on extending till the whole abdomen is involved; but the right ileo-inguinal region is ever the most tender part. There is obstinate costiveness; nausea and violent vomiting may set in, especially when drastic purgatives have been persevered in; the position is characteristic—the patient lies on the right side, body bent, and thigh drawn up; the countenance has not the anxious aspect of enteritis. If neglected or wrongly treated, the abdomen becomes tense and tympanitic, and general enteritis or peritonitis may supervene. Should the appendix be inflamed or ulcerated, all the symptoms are more acute, and likely to terminate fatally by peritonitis or fecal abscess. In the progress of these diseases, adhesions are often formed in its interior, or to other parts; the areolar tissue around

may inflame, suppurate, and give rise to abscess, which may tend upwards and downwards, and require to be opened; they may either open externally, or find their way into other parts of the intestinal canal, the patient recovering, or may die worn out by the discharge. Should the ulceration open into the peritoneum, peritonitis of a diffused and fatal character will be set up, as in one of the cases related by the author. This termination is fortunately most rare, though not uncommon in typhoid and dysenteric fevers. When resolution takes place, it is preceded by action of the bowels and gradual subsidence of the pain, tenderness, sickness and fever, about the fourth, sixth, or even the eighth day. This result can only be obtained by most judicious treatment; but when mistaken, and treated too actively by large and repeated bleedings, or violent and continued purgatives, there is much danger of a fatal termination, or of a long and protracted convalescence. If fecal abscess forms, the drain on the system is long and exhausting. The author coincides very much with Doctor Burne, whose papers in the "Medico-Chirurgical Transactions" he refers to. In these acute cases, leeching, fomentations, soft poultices, mild effervescing aperients, and large bland enemata, will often resolve the inflammation; if not, calomel and opium, or opium alone, should be given, but violent purgatives are to be avoided. Dr. Rogers places great reliance on bland mucillaginous enemata, passed into the bowels with a long O'Beirne's tube, with which he has often relieved and cured cases of simple obstruction and constipation that had resisted other treatment; he thinks the use of this instrument is much neglected. The author lays great stress on cautious dieting, which should be, for a long time, of the simplest and blandest form—arrow-root, rice, milk, eggs, and subsequently beef tea and jellies. In those forms of acute inflammation that have supervened on some subacute chronic form, long perseverance in this cautious regimen is even of more importance. In chronic inflammation, careful regimen and regulated action of the bowels are essential; the symptoms now are all more or less subdued and indistinct: irregular action with colicky pains; diarrhœa alternating with costiveness and fetid dejections; hardness and fulness over the cæcum, with tenderness on pressure. The author relies on blisters, iodine and liniments, mild saline aperients, and strict attention to dietetic rules: from neglect of these, he has had occasionally to regret the loss of a patient. In simple obstruction, he relies on a large enemata and mild saline aperients, with a sedative, as hyoscyamus, belladonna, &c.; he quotes cases from different authors on the frequency of these obstructions and the mistakes often committed by the reckless abuse of violent purgatives, which, even in cases of hernia, have been given till death removed the sufferer from his tortures. In the

more obstinate cases, electricity, dashing cold water, tobacco fomentations over the abdomen, and inflation with bellows, have each been successful. Should all means fail, operative surgery comes to our aid.—[*British Med. Journal*, and *Ranking's Abstract.*

Autopsy of a Woman whose Uterus had been removed thirty years previously. By Dr. G. S. GODDARD.

In the anatomical collection at Rotterdam a remarkable specimen is preserved: it is the uterus of a woman, in whom inversion of that organ had occurred in the year 1821, probably in consequence of forcible separation and removal of the placenta. After repeated but fruitless efforts to reduce the uterus, and when the symptoms had assumed a more and more threatening aspect, the part was tied by Surgeon Nortier thirteen days after delivery; and eight days subsequently the tumor below the ligature was removed with a pair of scissors; in the evening of the following day the ligature lay loose in the vagina, and exhibited the small opening through which the pedicle had passed. A month later the woman had quite recovered, menstruation did not recur, and the sexual passion was wholly extinguished. In the preparation the uterus is seen, of the size of the head of a child at full term, with an internal rough, flocculent surface, which, at the right side, in the neighborhood of the fundus uteri (where the placenta was attached), has an opening with uneven edges, of about an inch and a fifth in circumference. Less extensive on the under side, this sacciform body ends with an opening of about two and a third inches. On the left side of the fundus portions of the Fallopian tube and of the round ligament, both, as well as the uterus, still enlarged, are seen; while on the right side the round ligament appears to be partly destroyed, and a much larger portion of the Fallopian tube is evidently also destroyed in its whole length. The woman died in 1850, in consequence of an acute disease, in which the genital organs were not involved. On opening the body the internal genitals, on a superficial inspection, presented a tolerably natural appearance, except that the right broad ligament was rather tense, giving rise to a degree of obliquity; there was a great accumulation of fat in the connective tissue around the vagina and between the laminæ of the broad ligaments, in which no cicatrices, but only modified plaiting, were to be seen. The folds of the mucous membrane of the vagina were very strong and irregular; the vagina itself was much shorter than usual. Of the uterus only the cervix remained; the cavity of the latter was scarcely large enough to contain a lemon pippin, was very pointed, and was about three inches in length; the palmæ plicatæ were very

strongly marked; the walls, which were thicker than usual, terminated as cut off; on the surface looking towards the cavity, was a white, firm, cellular, intervening substance, a couple of lines in length, and particularly dense on the right side, which as the cicatrix had filled the space left open in the operation, as well as the truncated substance of the uterus, had become covered with peritoneum. The free extremities of the Fallopian tubes were normal; each terminated in a cul de sac, the right was shorter than the left, and with the ovary was drawn strongly downward by a fold of peritoneum. The round ligaments were in great part deficient on both sides; the right was the shorter, and was surrounded with much connective tissue. The left could be followed a little further. The ovaries were more atrophied than even the woman's time of life should lead one to expect; the ligament of the right ovary was very small; that of the left still in a great measure existed. On either side there was one of those pediculated hydatid-shaped bodies, which Kobelt and Follin regard as remnants of the ductis Mulleri in the corpus Wolfianum; the right possessed a short and broad, and the left, on the contrary, a long pedicle.—[*Nederlandsch Lancet*, and *Dublin Medical Press.*

Fatty Degeneration of the Heart—Death from the Inhalation of the Tincture of Chloroform. By William A. Hammond, M. D., Assist. Surg. U. S. Army. (Read before the Biological Department of the Academy of Natural Sciences of Philadelphia, April 19th, 1858.)

Private S——, of Company "C," 2d U. S. Dragoons, was admitted into the hospital at Fort Riley, Kansas Territory, on the 23d day of November, 1856, with an injury of the left elbow-joint, caused by his falling from his horse whilst intoxicated on the afternoon of the previous day. I did not see him till eighteen hours after the accident, when, owing to the swelling and inflammation of the part, I was unable to determine the exact nature of the injury. Erysipelatous inflammation immediately ensued, and lasted for ten days, requiring absolute rest, and the ordinary remedies for its removal. At the end of this period there was still a good deal of swelling, and the motions of the joint were very much impaired. Dr. Coolidge (who in the mean time had joined the post) and myself were unable still to make out the exact condition of the parts; and after repeated examinations, we decided to induce anæsthesia with the view of obviating the great pain caused by the necessary manipulations, and thus to make a more satisfactory examination than had yet been accomplished.

A sponge wet with two or three drachms of the tincture of chloroform was placed in a tubulated bell-glass and held to the

mouth of the patient, he having previously removed his coat and stock, unbuttoned the neck band of his shirt, and laid down on a bed. He continued to breathe the vapor for five minutes without any appreciable result. The pulse, which at the commencement of the inhalation was 100 per minute, remained about the the same. The sponge was again moistened with the tincture of chloroform, then placed in a towel, and again held close to the mouth. Full, deep breathing was directed, and in two or three minutes some excitement was produced. During this period the face became red and flushed, but not to an unusual extent; the respiration was not affected in any remarkable degree, nor was there any notable variation in the pulse. In an instant, however, all was changed; the eyes were turned up, the face became turgid, the muscles became relaxed, and vomiting ensued. My hand was upon his pulse, which, from beating at the rate of 100 per minute, stopped as if he had been struck with lightning. Dr. Coolidge immediately discontinued the inhalation, and judging from the character of the vomited matters, thought at first that some substance was closing the larynx. Introducing his finger into the posterior fauces, he removed a large piece of cabbage. Subsequent to the vomiting the patient breathed two or three times, but it is probable the heart ceased to act before respiration was entirely suspended.

Every means proper in such cases was used to re-excite respiration, Marshall Hall's method among others, but without the least success. Stimulants were thrown into the rectum, the body rubbed sedulously, &c., but no evidence of life was perceived, and after persevering for nearly two hours, we abandoned all hopes of resuscitation.

Autopsy twenty-two hours after death.—Body well developed, no superabundance of fat. Great muscular rigidity, and considerable hypostatic congestion of the back of the head, neck and body. The brain and appendages were healthy. The stomach was large but not distended with gas, and contained about three ounces of pultaceous matter, and several large pieces of unmasticated and undigested beef. The spleen was about three times its natural size. The liver presented no unusual appearance; it was not minutely examined. The thoracic cavity was free from effusion and pleuritic adhesions. The lungs, especially their inferior and posterior portions, were intensely congested, and of a deep purple hue. On opening the pericardium, the heart appeared of unusual size. The right auricle and ventricle were distended with blood and covered with fat. On removing the heart in the usual manner by dividing the great vessels at their origin, about two quarts of dark, thin, uncoagulated blood escaped. No coagula were found in the heart or large vessels; the left ventricle was empty. The heart weighed within a fraction of fourteen ounces, and

measured in its longitudinal diameter full six inches, and in circumference, at its base, eleven and a half inches. The wall of the left ventricle at its base was $\frac{6}{8}$ of an inch in thickness, at the middle $\frac{5}{8}$ of an inch, and at the apex $\frac{5}{8}$ of an inch. The extreme thickness was one inch. The thickness of the right ventricle ranged from $\frac{1}{8}$ to $\frac{2}{8}$ of an inch, exclusive of its fatty covering, which, near the auricle, was quite thick. The walls of the right auricle were extremely thin, and were loaded with fat. The substance of the heart was of a very pale red or dirty pink color, comparatively soft and flabby, less resisting in the right than in the left ventricle, but easily penetrated in both with the finger or handle of the scalpel.

In order to form a more definite conclusion as to the exact pathological condition of the heart, I submitted several sections to microscopical examination; many portions of the right ventricle were thus found to consist almost entirely of fat-cells and oil-globules; in others, muscular fibres were visible. In the left ventricle both fibres and striæ were to be seen, with many fat cells and oil-globules. The more precise results of the examination are as follows:—

1st. A piece of the right ventricle taken from the central portion of its wall, *i. e.*, midway between its external and internal surfaces, and in which no fat was visible to the naked eye, exhibited under the microscope numerous fat-cells and oil-globules. One hundred grains of this character of tissue, when subjected to the action of ether, yielded 32.75 grains of ether extract.

2nd. A section of the right ventricle extending through its entire thickness, and in which fatty deposit was visible to the naked eye, yielded 69.92 per cent. of ether extract.

3rd. A portion of the left ventricle, in which no fat was visible to the naked eye, was perceived by the microscope to contain a few fat cells, and yielded 9.89 per cent. of ether extract.

It is evident, therefore, from this record, that the heart, besides being loaded with fat, was in a state of fatty degeneration. It is worthy of note that there was no *arcus senilis* observed in this case.

A few words in relation to the anæsthetic employed, will not, I think, prove uninteresting.

The anæsthetic issued to the medical officers of the army is (or was at that time), the tincture of chloroform, or chloric ether of Dr. J. C. Warren and others. When properly prepared, it consists of one part of chloroform, and two parts of absolute alcohol, and such was the preparation intended to be furnished. The contents of the same bottle used in this case had been a short time previously used in six cases; one of amputation of both legs; one of Chopart's operation on right foot, and Hey's on left foot; one case of delirium tremens following fracture of arm, and complica-

ted with severe convulsions; one amputation of great toe; and one excision of a portion of the fibula. In all these cases the anæsthetic had acted unpleasantly, and in that of amputation of the great toe great prostration was produced, and the pulse fell from 60 to 40 per minute. By the use of stimulants, &c., further ill effects were obviated.

It did not, however, occur to Dr. Coolidge or myself, that these consequences were due to the peculiar character of the anæsthetic, but after the death of S—— I submitted it to a chemical examination with the following result:

The specific gravity was 980. The reaction was strongly acid.

A solution of nitrate of silver caused a flaky precipitate, soluble in ammonia, and precipitable from this solution by nitric acid, showing, therefore, the presence of chlorohydric acid.

A portion was put into a glass tube graduated to tenths of a cubic centimetre, and an excess of water added so as to destroy the solvent property of the alcohol. The chloroform thus precipitated amounted to but one-sixth of the whole.

The alcohol entering into its composition, instead of being absolute, was the common diluted alcohol of the Pharmacopœia.

The tincture of chloroform was thus shown to be very impure, and not the article contemplated by the medical department. It had been carefully preserved whilst under my charge and that of Dr. Coolidge, in closely stopped bottles carefully kept from the light, so that it is probable the chlorohydric acid had been present from the time of its manufacture.

How far this impure character of the anæsthetic may have tended to cause death in the case related, is difficult to say. I believe, however, that it was not without influence. The condi- of the heart was doubtless, however, the chief cause of death. Persons suffering under fatty degeneration of this organ are peculiarly liable to sudden death, and it is also true that there are no certain signs from which its presence can be determined during life. Of fifty-eight cases cited by Dr. Richard Quain,* death was sudden in fifty-four.

Two cases have recently been published of fatty degeneration of the heart, in which death occurred from the inhalation of chloroform. In one of them, that of Mr. Erichsen,† it took place at the time of inhalation. The other occurred in the practice of Dr. Macgibbon,‡ at the New Orleans Charity Hospital. In this latter case death ensued on the day following the administration of the chloroform.

Private S—— was 23 years of age, 5 feet 6 inches high, of ruddy complexion, gray eyes, and brown hair. He was exceed-

* Medico-Chirurgical Transactions, vol. xxxiii.

† British and Foreign Medico-Chirurgical Review, January, 1855, p. 222.

‡ American Journal of the Medical Sciences, Janury, 1856, p. 261.

ngly intemperate in his habits. He had never, as far as I am aware, complained of any affection of the heart, and never, to my knowledge, had any symptoms which would indicate disease of this organ.

In the preparation of this paper I have freely availed myself of the notes of Dr. Coolidge, especially those relating to the post-mortem appearances and measurements of the heart.—[*American Journal of the Med. Sciences.*

History of two cases of Hernia of the Ovary, in one of which there was periodical Enlargement of this Organ. By Dr. Oldham, Obstetric Physician to Guy's Hospital.

These cases are examples of a rare conformation of the female sexual organs, in which the ovaries had descended through the inguinal canal, and become permanently lodged in the upper part of the external labia. In both of them it was impossible to detect either uterus or vagina; and in the first there was a periodical increase of one or other of the ovaria, followed by its gradual reduction—a direct evidence of an ovarian menstrual act.

Case 1.—The subject of this case applied to me in September, 1851, for advice on account of never having menstruated. She was nineteen years of age, of a tall figure, symmetrical frame, well-expanded pelvis, and womanly aspect, bearing all the marks of a full completion of the physical changes of puberty; and her general health, though not robust, was fairly good. She was one of a family of five children, and her sisters had menstruated between 15 and 16 years of age. The principal point which was elicited from her history in connection with her complaint was, that, eighteen months before, a swelling had somewhat suddenly appeared on the right side of the external organs, which had caused her some pain for a few days and had then disappeared. In four or five months a similar swelling again appeared, but was attended with so much suffering that a medical man was consulted, who took it for an abscess and ordered it to be poulticed. Again it passed away, again to recur at the end of two months; and so it had gone on at irregular intervals until the time of her seeing me, when the pain of a renewed attack of unusual severity had occasioned her some alarm. On examination, a swelling the size of a goose-egg was found to extend between the external abdominal ring and the centre of the labium on the right side, which was very tense and firm to the touch; and the cellular tissue, skin, and mucous membrane of the labium were œdematous and inflamed. It was painful, but by no means so painful as a labial abscess, which in its general aspect it resembled; and there was but little febrile disturbance. A more critical examination de-

tected the presence of a solid body of an oval shape within the tissue of the labium, which proved to be the ovarium, whose enlargement had so compressed the surrounding tissues as to swell and inflame them. On the opposite side there was another oval body, the size of a walnut, which passed just beyond the outer ring, but readily slipped into the canal. This was the left ovary in a quiescent state. The external sexual parts were normally formed; but the ostium vaginæ was closed, a slight indentation in the median line alone marking its position. Frequent careful physical examinations failed to detect any trace of a vagina or uterus, and the conclusion arrived at was that these central pelvic organs had not been developed. The mammary glands were fully formed.

I have had repeated opportunities during the six years which have intervened since first the case came before me, of examining the organs both during the periods of ovarian excitement and during the intervals. For nearly two years, however, I completely lost sight of her, when I learned, to my amazement, that in spite of my strong admonition both to her mother and herself, that she should lead a single life, she had married. For some time past I have seen her more frequently, and have watched the recurrence of the ovarian swellings.

For the first three years the right ovarium was exclusively enlarged, and the intervals were not so regularly marked, varying between three and six weeks: excepting for the first year, when they were much longer, occasionally extending to three months. For the last two years the left ovarium has been far more frequently affected, the right remaining quiescent; occasionally both are painful and tumid, but even then one more than the other. The intervals are now pretty regularly three weeks. The acute inflammatory symptoms which accompanied the onset of these swellings have long since ceased to recur, which is obviously due to the loose state of the tissues from repeated stretching, so that the swollen organ is no longer compressed.

The accession of a menstrual time is sometimes suddenly felt. She will go to bed well, and in the morning the ovary will be swollen: more commonly, however, it is very gradual, augmenting in volume for four days, then remaining stationary for three days, and then gradually declining; the whole process, before the ovary is reduced, generally lasting ten or twelve days. On separating the ovary, when at its height of swelling, from the tissues surrounding it, it appears scarcely, if at all, less than double its usual volume; its outline is clearly defined, and it is plain that the whole, and not merely a part of the organ, is involved. There is no suffering worthy of notice during the time; the swelling is tender if pressed; and tender, too, in the act of sitting down or rising up; but she walks about as usual without distress, and

there is but little lumbar or hypogastric pain. Neither are there any manifest sympathies excited, either of the mammary glands or other organs. Nor is there any vicarious flux, either of blood or any secretion, with the exception of an excess of saliva, but this is not in any large flow. The ovary alone appeared to be engaged in this periodical act, which it is not too much to suppose, in accordance with modern physiological views, would have been attended with a flux of blood, had not the organs which normally supply it been absent.

But while this may be said to represent the usual course of a period, yet the volume of the ovary, and the length of time it remains swollen, is subject to occasional variation; sometimes being much less tumid, and dying away in a shorter time.

The repeated attempts at sexual union have only had the effect of somewhat loosening the tissues around the vulva, but the vagina remains imperforate as before, and is beyond the reach of surgical remedy. It may be added, that the subject of this history recognizes an increase of sexual feeling at and soon after the periods of enlargement of the ovary.

Case 2.—This case was that of a young woman who had attained the age of twenty without having menstruated. She was a tall, strumous-looking person, in weak health. There had not been any well-marked efforts at menstruation, but she had suffered slightly from lumbar pain. The mammæ was well developed. The pelvis was fairly formed. On examination I found the two ovaria just appearing beyond the external abdominal rings, and readily returning by pressure into their respective inguinal canals. They were of equal size and similar shape, being ovoid bodies about the size of small chestnuts. They were not tender when touched, although organically sensitive, and she had never experienced pain in them. The external sexual organs were somewhat less perfectly developed than usual; the vaginal orifice was closed, and no trace of a canal or uterus could be detected by exploration with a catheter in the bladder and the finger in the rectum. These organs, as in the former case, were absent. During the time I saw the patient, which was only for two months, the ovaria did not enlarge, although her general health improved.—[*Proceedings of Royal Society*, and *Ranking's Abstract.*

Observations on the Poison of the Upas Antiar. By Professor Kolliker.

The results of Prof. Kolliker's investigations into the effects of the antiar upon frogs, are the following:—

"1. The antiar is a paralyzing poison.

"2. It acts in the first instance and with great rapidity (in 5 to 10 minutes) upon the heart, and stops its action.

"3. The consequence of this paralysis of the heart are the cessation of the voluntary and reflex movements in the first and second hour after the introduction of the poison.

"4. The antiar paralyzes, in the second place, the voluntary muscles.

"5. In the third place, it causes the loss of excitability of the groat nervous trunks.

"6. The heart and muscles of frogs poisoned with woorara may be paralyzed by antiar.

"7. From all this it may be deduced that the antiar principally acts upon the muscular fibre and causes paralysis of it.

"So much for this time. My experiments with the antiar upon warm-blooded animals have only begun, and I am not yet able to draw any conclusion from them. As soon as this will be possible, I shall take the liberty to submit them to the Royal Society, together with the results of my experiments with the *upas teinté*, which poison I had also the good fortune to obtain through the kindness of Sir Benjamin Brodie and Dr. Horsefield. With regard to the antiar, I may further add that experiments made independently, and at the same time, by my friend Dr. Sharpey with this poison, have conducted to the same results as my own."

[*Proceedings of the Royal Society*, and *Ranking's Abstract.*

Puerperal Fever.

The Academy of Medicine in Paris has for some time been occupied in a discussion on Puerperal fever, in which the leading obstetricians of the French metropolis have given utterance at length to their opinions. From among the numerous speeches, we translate that of M. Cazeaux, as it gives a very good digest of the different opinions entertained.

I think that it would be superfluous, after the speeches you have heard, to revert to the symptomatology and anatomical characters of the disease or diseases collectively described under the names of *puerperal fever* or *puerperal peritonitis.* These points in the discussion appear to me to have been sufficiently studied by M. Depaul and M. Cruveilhier. You are aware of the importance given by the last named speaker to lymphangitis among the alterations peculiar to puerperal fever; so much so, that he considers it characteristic of that disease. But that opinion has been vehemently disputed by M. Béhier, who maintains, on the contrary, that, in autopsies of women who have died of puerperal fever, he has found inflammation of the veins more frequently than of the lymphatics. This assertion of M. Béhier's has surprised me greatly. I have, for my own part, opened a good number of bodies of women who have died of puerperal diseases, and I declare that, like M. Cruveilhier, I have found pus much more frequently in the uterine lymphatics than in the veins. Does

not M. Béhier's error depend on an anatomical confusion? For it is remarkable that, although he describes the pus as being in other vessels than M. Cruveilhier does, he still finds it in the same parts of the uterus or its appendages; that is to say, in those portions which are particularly rich in lymphatic vessels. But there is one question which has in an especial degree excited the speakers; it is that of knowing what is the nature of puerperal fever, and what nosological rank it is proper to assign to the lesions which it presents.

In this respect the speakers have been divided into two camps. In the one, they admit the existence of an essential fever—of a pyrexia; in the other, they see only local phlegmasiæ. Up to the present moment, M. Beau is the only one who has formally declared himself in favor of this latter doctrine. With regard to the doctrine of essentiality, it has found supporters in M. Depaul, who has the most boldly and the most clearly laid down the question; In M. Danyau, who has also spoken out resolutely enough; in M. Trousseau, who, after having formally rejected the puerperal fever, has so well generalized it subsequently, that he has admitted it not only for women in child-bed, but even for women not in the puerperal state at all, for the fœtus, for the new-born child, and for all subjects attacked by any kind of traumatism. M. Dubois has equally announced himself an essentialist; but he has produced no new arguments in favour of that opinion, and he has enveloped his ideas in such thick clouds, that it is difficult through such a veil to distinguish a pure essentialist. The question, therefore, is solely and entirely between M. Depaul and M. Beau.

M. Beau appears to me to have replied victoriously to M. Depaul, invoking the epidemic and contagious characters of the disease as proofs of its essentiality. I will not revert to these arguments; but I will add that one of the characters of pyrexia, viz., the manifestations of the fever some days before the appearance of the local symptoms, as is the case with typhus and small-pox, is not what is observed in puerperal fever, in which the pain, which is the sign of local phlegmasiæ, shows itself almost at the the same time as the shivering, which is the sign of the general pathological state. I find also a very good argument against essentialism in the speech of M. Dubois, who nevertheless makes profession of being an essentialist. Have we not heard that honourable professor tell us that the multiplicity, the variety of the lesions in puerperal fever, would be consistent with placing it among pyrexiæ, the principal character of which is to present anatomical alterations, constant and always identical.

With regard to the negative autopsies quoted by M. Depaul as an argument in favour of essentiality, while I admit, as I do willingly, that they have been well made, I can neither consider them as convincing proofs, nor as motives for rejecting the doc-

trine of local phlegmasias. In fact, do we not see peritoneal inflammations, traumatic, or by perforation, kill so promptly, that material alterations have not had time to be formed? Do we not see, also, burns in the first or second degree cause a rapid death—the effect assuredly, not of the lesion of the tissue, but solely of the extent and violence of the inflammation? On the other hand, is it really necessary to find severe organic lesions to explain functional disorders, and even death, in puerperal fever? I do not think it is; for, in my opinion, the blood in this disease has undergone so profound an alteration as to acoount for all the accidents, and for the usually fatal termination of the disease.

The mistake committed by those nosologists who have wished to assign a place to puerperal fever, consists, in my opinion, in their having studied it under its epidemic form. In order to form a true and clear idea of the disease, we must look at it under its sporadic form; that is, in its condition of simplicity, disengaged from the special elements of gravity necessarily given to it by the epidemic character. Let us then imagine a physician who has never seen a case of puerperal fever, and who has never read a description of this malady. He is brought into the presence of a woman recently confined, in whom a laborious parturition, a prolonged labour, has produced numerous bruises and lacerations, speedily followed by violent shivering, by very severe abdominal pains, and by a series of other severe general and local symptoms which will rapidly terminate in death. At the autopsy, he finds pus in the peritoneum, in the veins and lymphatics of the pelvis. What idea can this physician form of the nature of the disease, but that it is phlegmasia?

Now, must we admit that there exists a natural difference between the epidemic and sporadic forms of puerperal fever? By no means—any more than that there exists a difference between epidemic and sporadic pneumonia. Nevertheless, M. Trousseau has brought forward one difference which he describes as very essential; it is the existence of a specific cause, of a kind of virus which would be the essence of the epidemic puerperal fever. Well, a specific cause always produces a corresponding specific disease, announcing itself by signs or lesions always identical; thus, the virus of rabies always produces rabies; the virus of syphilis, syphilis; the smallpox virus, smallpox; while here we have to do with a disease which presents itself with lesions the most varied, sometimes a metritis, sometimes a peritonitis, sometimes a phlebitis, at other times a lymphangitis, a pneumonia, a pleurisy, a suppurating arthritis, etc. We cannot, therefore, allege a sole cause for effects so varied.

The difference which I admit, for my own part, is not where M. Trousseau has placed it—in the nature of the disease; I find it in the very fact of the epidemic, which renders the disease

more severe, without changing anything of its essence. It is here with puerperal phlegmasia as with cholera, angina, dysentery, and a hundred other affections that I might name.

Do not think, however, that beyond the local inflammation I see nothing whatever, and that I believe that in that resides the whole gravity of the affection. If, indeed, I do not admit a puerperal *fever*, I do admit a puerperal *state*, which, in preparation throughout the pregnancy, arrives at its maximum of intensity at the time of the accouchement, and shortly afterwards. This puerperal state consists in a notable alteration of the fluids, which is present, in a greater or less degree, in all pregnant women. I have heard M. Trousseau speak to us with some disdain of recent hæmatological researches. For my part, I think they are destined to open to medicine a way of progress, and to enlighten us on many questions which are still obscure. It is not my place here to recall all the results already obtained; but I cannot be silent on the very special services rendered by hæmatology to obstetric physiology and pathology. Thanks to that science, gentlemen, it is now admitted that pregnancy, so far from constituting a condition of plethora, actually, on the contrary, engenders an anæmic state. Thanks to hæmatology, we now understand the etiological analogies existing between eclampsia and the epileptiform convulsions which terminate Bright's disease. It has been established very clearly that in both cases the nervous phenomena depend on an intoxication of the blood by urea—on an uræmia.

It is also in the blood—in the blood so profoundly modified in pregnancy—that we must seek the first cause and the *point de départ* of puerperal diseases. Thus, diminution of globules, of albumen, of iron, a notable augmentation of water and of fibrine—such are the modifications—I ought to say, the alterations—of the blood in a woman about to lie in. If in such a condition there supervene an extensive inflammation of an important organ, you may conceive what development it must assume in invading an organism so seriously altered. Who can foresee to what extent these alterations of the blood may go, and what may be the consequence of them? For myself, I do not hesitate to say that, in certain cases, they may be carried to a point at which they will produce a transformation of blood-globules into pus globules; and that without a wound, without phlebitis, without any lesion of the solids.

And on this subject, let me recall a fact reported by M. Andral, and which is very well adapted to impart a certain value to this hypothesis. A man was brought in dying, in a most formidable ataxo-adynamic state; he died at the end of three days. At the autopsy, numerous abscesses were found in the brain, in the lungs, in the spleen, in the kidneys; the blood everywhere was like very loose currant-jelly. In the midst of the blood-globules, which

were misshapen, strawberry-like (*framboisés*), a great number of pus-globules were plainly distinguished. Nowhere was there the slightest trace of phlebitis. Collections of pus in many of the solids, and pus in the blood itself, were the only alterations demonstrable.

There is, therefore, in lying-in women, as M. Trousseau has said, a great morbid aptitude, which I will at once call a *pyogenic state*, which not only manifests itself in abdominal phlegmasias, but makes its sad influence felt, whatever be the disease attacking the puerperal female. It is thus that, according to M. Chomel and M. Grisolle, the pneumonias which supervene during the puerperal state acquire an extraordinary degree of virulence, which renders them promptly mortal.

Be the puerperal fever sporadic or epidemic, it always consists essentially in an alteration of the blood and a special aptitude of certain organs to inflame, and to rapidly produce pus; with this sole difference, that with epidemics this aptitude finds itself singularly increased by this agent, unknown in its essence, but so manifest in its effect, and to which has been given the vague denomination of epidemic influence (*génie épidemiqué*); whence also the gravity of the disease, and its termination more promptly and more constantly deadly.

I will only say this regarding the contagious character of puerperal fever, that I adhere without reserve to what MM. Depaul and Danyau say about it. After a demonstration so clear, so peremptory, as that furnished by those two speakers, it is impossible that there can remain any incredulous on the point. M. Danyau has therefore, with good reason, insisted on the precautions to be taken to avoid the dangers of contagion.

What shall I say of the treatment? The speakers who have preceded me have superabundantly proved the uselessness of the different methods of cure, and the vanity of certain remedies considered prophylactic.

For the curative treatment, I will confine myself to the declaration that all the means I have tried have failed in my hands, as in those of my colleagues, in cases of virulent or epidemic puerperal fever. I must, however, say that I have obtained good effects from the employment of mercury. I have seen every case get well in which powerful doses of mercury have produced an abundant salivation; a circumstance which induces me to think that he who shall find an infallible means of bringing on a copious salivation will have perhaps discovered a specific for puerperal fever.

As for prophylactic measures, I see none better at present than such as consist in diminishing the agglomeration of women in lying-in; and on that point, I entirely agree with M. Danyau. The measures he proposes appear to me the wisest, the best un-

derstood, and the most conformable to the rules of a prudent hygiene.—[*British Med. Journ.*, from *Gaz. Hebdomadaire.*

On the Injection of Urea and other Substances into the Blood. By Dr. W. A. Hammond, Assistant Surgeon U. S. Army.

The principal object in undertaking the experiments detailed in this paper, is that of deciding upon the correctness of the theory advanced by Frerichs explanatory of uræmic intoxication. As is well known, this distinguished author regards the symptoms of blood-poisoning, so frequently present in Bright's disease, as not directly depending upon the presence of urea in this fluid, but as being caused by its conversion, through the agency of a ferment, into carbonate of ammonia.

Frerichs performed two series of experiments, which he regards as tending to sustain his hypothesis. In the first series, he injected a solution of urea into the blood of animals whose kidneys had been previously removed. In from an hour and a quarter to eight hours they became restless, and vomited. Ammonia was detected in the expired air, and simultaneously convulsions ensued. Death occurred in from two hours and a half to ten hours from the commencement of the experiment. Ammonia was found in the blood, the contents of the stomach, and in the bile and other secretions.

In the second series, a solution of carbonate of ammonia was injected. Convulsions ensued almost immediately, and were quickly followed by stupor. The respiration was labored, and the expired air was loaded with ammonia. This substance, however, gradually disappeared, and the animals recovered their senses.

Frerichs offers no explanation of the nature of the ferment which he conceives to be necessary to produce uræmic poisoning, nor does he even attempt to demonstrate its existence, except indirectly, through the experiments above cited.

While admitting the facts set forth by these experiments, Dr. Hammond differs with Frerichs in his theory. Ammonia has often been met with as a constituent of the expired air of healthy individuals. He has himself frequently detected it in such cases; it has been demonstrated to be constantly present in the blood; and Frerichs' own experiments (those of the second series) show that it was not capable of causing death even when injected directly into the circulation, and when its presence in the blood was evidenced by its being exhaled in large quantity from the lungs.

The fact that in the first series of investigations the kidneys were extirpated, while in the second the animals were unmutilated, while different substances were used in each, prevents our drawing any comparative conclusions from the results obtained.

The experiments to which the present paper relates consisted of two series. In the first the substance was injected into the blood of the sound animal; in the second the kidneys were previously extirpated. The two series were, as far as possible, alike in every other respect. The substances injected in both series were urea, urea and vesical mucus, carbonate of ammonia, nitrate of potash, and sulphate of soda.

Dr. Hammond's conclusions are:

1st. That urea (simple and combined with vesical mucus), carbonate of ammonia and sulphate of potash, when injected into the blood-vessels of sound animals, do not cause death.

2nd. That nitrate of potash, when thus introduced, is speedily fatal.

3rd. That death ensues from the injection of any of the foregoing named substances into the circulation of animals whose kidneys have been previously extirpated.

4th. That in neither case does urea when introduced directly into the circulation, undergo conversion into carbonate of ammonia.—[*N. A. Med. Chir. Rev.*, and *Ranking's Abstract.*

Menstruation during Pregnancy. By Dr. Elsasser.

This contribution to a disputed topic is founded upon 50 cases, extracted from the journal of the Stuttgart Lying-in Hospital, cases which are said to rest upon the most certain information. The subjects were 15 primaparæ and 36 pluriparæ, who, with the exception of two women (aged 36 and 41), were between 20 and 30 years of age. Of the 51 children born, 34 were boys and 17 girls, 36 being mature, and 15 immature. The menstruation during pregnancy occurred in 50 women, in the following manner: Once in 8, twice in 10, three times in 12, four in 5, five in 6, eight in 5. and nine in 2. In 13 cases the peculiarities of the rhythm of the discharge were inquired into, and the rhythm was found regular in 4, in 1 it occurred at the sixth week, in 3 there were pauses between the epochs, in 2 the menstruation first appeared after the second month, in 2 after the fourth, and in 1 after the fifth month. In one case the menstruation first appeared in the middle of gestation, and henceforth came on every four weeks, lasting three or four days. The child perceived but feebly at first, was strongly felt during the last four or five weeks. Hemorrhage occurred twice within a week before delivery, but a mature, living infant was born. Indications as to the amount of discharge were furnished in 26 cases, and in 18 of them it was less than in the non-pregnant condition. The weight of the 35 mature infants varied from 5 lbs. to 9 lbs.

Dr. Elsasser observes that although he is unable to state the proportion of cases in which menstruation occurs during preg-

nancy, it is by no means so exceptional an occurrence as supposed by some authors. It occurs more frequently in pluriparæ than in primiparæ; and it takes place much more frequently during the first half of pregnancy, and especially in the earlier months of this, than during the latter half. The amount of discharge too is smaller than in the normal menstruation. The duration of the pregnancy was normal in more than two-thirds of these cases (36), while in nearly one-third (14) of the cases it was interrupted, in 4 during its first, and in 10 during its latter half. As regards the development of the child, which by some authors has been supposed to be impeded by the occurrence of menstruation, this was found to be normal, or more than normal in three-fourths of the cases —[*Monatschrift für Geburtskünde*, and *American Journal of the Med. Sciences.*

The Investigation of Epidemics by Experiment. Read before the Epidemiological Society. By Dr. Richardson.

He commenced by pointing out the weakness of the present system of epidemiological study, which sought after results by trying to descend from the general to the particular. This method lets pass simple laws, which lie at the root of all inquiries. It is painful to say, as a fact, yet a fact proper to be said, that the researches at present so laboriously conducted do not tend to such proofs of unanimity, or to such positiveness of science, as might on *à priori* reasoning, be expected from them. The present modes of research may bring out negatives—they may bring out partially-accepted positives, and a sufficient amount of positive evidence to satisfy a section of men; but as yet they have failed to educe such demonstrations that those who are educated to the same mark can read off the same phenomena by the same process of thought and inductive learning. The author next proceeded to point out carefully such experiments as might be reasonably instituted for the purpose of investigating particular epidemic disorders, especially small-pox, scarlet fever, and typhus, commenting also on the care which should be taken in the section of the animal subjected to experiment, and showing that in inquiries relating to the three special diseases named above, the pig is the proper animal to be selected, as one more susceptible of these diseases than other members of the inferior animal kingdom. Thence, leaving propositions for the history of experiment itself, as a means of investigation, the author explained what had been done in recent times towards the production of some diseases artificially, and the information derivable from this form of investigation. He followed up this argument with a minutely-revealed account of some experiments performed by himself, in which all the characteristics of typhus,

symptomatological and pathological, were produced by the introduction of alkalies into the system. He showed further that the typhous condition, which could be introduced by the injection of animal putrid matter, was coincident with, and dependent on, the development of a superalkaline condition of the blood; and he connected the pathology of putrid fever, so called, with the conditions analogous to those which had thus been artificially produced. In a connected, simple mode of argument, which peculiarly arrested the attention of the audience, the question was next put, whether, when the virus of a disease is introduced into a healthy animal so as to reproduce that disease, the symptoms and the pathological changes are due to an absolute reproduction of the virus itself, and to the actual presence of such virus, or whether the virus acted by setting up such new changes in the body that a product, generated secondarily and differing in character from the original poison, was the cause of the symptoms? He (Dr. Richardson) was inclined to the latter view, and gave some clear experimental evidence in support of his position. He admitted at the same time that further experiment was required, and argued that until this point was defined no sound progress could be made in the study of epidemics.

It is impossible, in an abstract to give more than the briefest outline of a communication written in so condensed a style, and opening up for consideration so many subjects, each differing in detail, yet having but one object; but the final propositions laid before the Society were as follows:—

1. That by experiment it might be ascertained in what excreta the poisons of certain of the epidemic diseases are located.
2. By what surfaces of the body such poisons may be absorbed so as to produce their specific effects.
3. When the virus of a disease, in reproducting its disease in a healthy body, acts in the development of the phenomena by which the disease is typified primarily or secondarily—i. e. by its own reproduction and presence, or by the evolution of another principle or product.
4. Whether climate, season, or external influences modify the course of epidemics, by producing modifications of the epidemic poisons, or modifications in the system of persons exposed to the poisons.—[*London Lancet.*

Aconitum Napellus—Aconite.

Dr. Edward B. Stevens, of Cincinnati, reports (*Cincinnati Med. Observer*, Oct. 1857) his success, confirmatory of the experience of others, in the use of aconite, for the cure or relief of "almost the entire range of neuralgic affections, and of those obscure

complications, of rheumatism and neuralgia, in which there is freedom from local or constitutional trouble, independent of nervous derangement."

In a case of neuralgia, "supposed to be a result of previous attacks of miasmatic disease," and which was treated by the use of quinine and other remedies with but temporary relief, Dr. Stevens prescribed a mixture of the tincture of aconite and tincture of cimicifuga, which gave entire relief to the patient. The proportion was—℞. Tinct. rad. aconit., ʒi.; Tinct. cimicifuga, ℥ij.—M. Dose, a teaspoonful every four hours. Three doses were sufficient to procure the desired relief. Ten months had elapsed without a return of the disease.

A case of neuralgic rheumatism of the arm, of peculiar obstinacy, after having been intractable to all remedies, yielded to the aconite. In the above formula, each dose should be equivalent to about four drops of the tincture, although, in fact, this latter gives somewhat more than sixty drops to the drachm. In this dose of four drops, Dr. Stevens has "never seen any effects sufficiently marked or evident to occasion alarm."

Dr. S. has not used this article in acute rheumatism; but in chronic rheumatic pains, particularly in old people, he has derived excellent effects from it. In dysmenorrhœa, or neuralgia associated with uterine derangement at or subsequent to the catamenial period, entire relief, followed by refreshing sleep, has been obtained by the administration of the aconite.

In the diminished and sometimes abolished sensibility and voluntary motion to which aconite gives rise, we find similarity of effects to those produced by veratrum viride and gelseminum.

[*North American Medico-Chir. Rev.*

Cannabis Indica—Haschisch—Indian Hemp; called also Gungha, Bung, etc.

Dr. John Bell, of Derry, New Hampshire, has a paper in the *Boston Med. and Surg. Journal*, April, 1857, on the effects of this plant, chiefly in a psychical point of view. He describes the manner in which he was affected when he put himself under its influence. Room is not allowed us to give even an analytical notice of his opinions and observations on this interesting theme, and we must be content to note a few passages. Among these, is one on the resemblance between a state of mind produced by the *Haschisch* and that occurring in Mania—a resemblance noticed both by M. Moreau and Dr. Bell:—"In both states there is the same excitement and abruptness of manner, the same rapidity and incoherence of thought, the same false convictions and lesions of the affective faculties."—"There is no error of judgment, no delusion or lesion of the will or moral faculties,

which is seen in the former state, [Mania,] but what might take its rise in the latter." Dr. Bell describes the series of mental phenomena which were produced on himself by this substance: "Amid all the strange vagaries of the *Haschisch*, the mind preserves the power of taking cognizance of its condition, and to a certain extent, of analyzing its operations. The memory of everything said and done is nearly perfect; but of the multitude of thoughts, only those making a more than commonly distinct impression are observed." He thinks that considerable light might be thrown on insanity, and especially delusions, by watching and analyzing the effects of the Indian hemp, which we may take as a picture of the mind when under another and more enduring series of morbid impressions.

Speaking of its operation on the brain, in reference to the psychical phenomena produced in consequence, Dr. Bell thinks that *five* grains is the smallest quantity from which any perceptible effects are to be expected, and generally more will be required. This opinion coincides with our own experience of the drug (the extract of *Cannabis*) when we have administered it for the alleviation of pain, as in neuralgia, and to procure sleep in delirium tremens.

Dr. A. Bryant Clarke, of Holyoke, (*Boston Med. and Surg. Journal*, May, 1857,) tells us, in reference to Dr. Bell's statement of the dose of the Cannabis Indica required to produce the desired effect, that a pill of the English extract, in the quantity of two grains and a half, given to a maniacal patient, who had previously taken the medicine in two-grain doses, produced very marked effects. On visiting his patient, two or three hours after she had taken the pill, Dr. Clarke found her sitting up, and more rational and quiet than she had been for weeks:—"The attendant described her as apparently fainting, with respiration slow and regular, a blue and dusky state of the skin, blood settled under the finger nails, and said they had with difficulty kept her alive." Dr. Clarke being incredulous of the effects attributed to the medicine, swallowed one of the pills, soon after a hearty dinner. Within an hour he began to feel its peculiar effects, such as are so well described by Dr. Bell. Dr. Clarke's left arm was paralyzed, the skin looked blue, and there was a blueness under the finger nails, as though the blood were imperfectly arterialized; the pulse was natural. The effect of the Cannabis was at its height in about three, and passed off in about five hours. The arm was in a powerless condition for half an hour, but friction would partially restore it.

Dr. Merret, of Detroit, in a short article on this subject, (*Medical Independent*, Sept. 1857,) describes the Cannabis as a deliriant which produces on many of the native population of the East, who use it freely, a most undesirable, in fact, a dangerous

frame of mind. These evils are, however, fortunately counterbalanced by the antispasmodic effect of the drug. Dr. Merret speaks from a personal observation, during three years in a military hospital at Calcutta, of its administration in *tetanus*. In idiopathic cases it was most generally successful, and even in traumatic cases it showed its superiority over all other remedies. He mentions two cases of its successful use in England. Its relaxent effect has been proved to be an aid to taxis, in the reduction of hernia.

For further details of the effect of doses of different degrees of strength, and the descriptions of the manner in which haschisch affects different individuals, we would refer the reader to an article in the "National Review," copied into *Littell's Living Age*, Feb. 20th, 1858.—[*Ibid.*

Treatment of Trismus and Tetanus. By Dr. Molnar, of Nimburg, Bohemia. (Translated from the *Allgemeine Wiener Medizinische Zeitung*, by Dr. B. Joy Jeffers.

The uncertainty of most of the recommended means of treating tetanus, fortunately a disease of rare occurrence, makes it the duty of every consciencious physician to remedy this deficiency in therapeutics by relating any single case in which the adopted plan of treatment was successful.

Ours was the case of a mason, Vincenz Holub, of Nimburg, a robust man, previously healthy, æt. 45. Sept. 22nd, his left fore-finger was so crushed by a stone of three hundred weight, that amputation with a flap was necessary, close above the head of the first phalanx. The wound was healing regularly, without pain, and had perfectly granulated "rose-red," when the patient began, on the 5th of October, to complain of painful tension and contraction of the muscles of mastication, and of difficulty of deglutition. In spite of the exhibition of opium and tartar emetic, in one grain doses, baths, followed by the desired diaphoresis, and of the greatest care, yet by the 9th of October the highest degree of tatanus was developed.

The patient had complete consciousness; pulse normal; pupils, in a moderately darkened room, strongly contracted; the teeth firmly set together, and not separable, either actively or passively. All the muscles of the neck and trunk, and the extensors of the extremities, were hard as a board. The stiffened body was thrown into various positions by painful electric-like shocks, both spontaneously and at the slightest touch. The patient was sleepless. The urine was drawn off by the catheter. Fluids (milk, soup and water) which were poured in, through an opening left by the extraction, several years previously, of

two upper incisors, were mostly regurgitated, the remainder flowing down as through a pipe.

Opium, in the form of clysters, gave no relief, as also the other means generally recommended. Baths could not now be used; and without much hope of success, I resolved, on October 16th, to employ chloroform. After the first inhalation of two drachms, the patient was greatly relieved. His consciousness did not exhibit the slightest disturbance. The painful contractions and rigidity were lessened, and he slept for two hours.

On the day following, three drachms of chloroform were used; on the third day, four; and on the fourth day, six, without producing any narcotism. But I noticed that on the third day of treatment, the patient could separate his teeth three lines.

The chloroform was now suspended for one day, and then again inhaled for five days in doses of three drachms per diem. All appearances of tetanus and trismus gradually disappeared, so that the patient could have been considered well by the 8th of November. His strength speedily returned. In all, he had used about four ounces of chloroform.

In view of this case, I have no hesitation in enrolling myself with those physicians who consider chloroform in this disease as a "Unicum."—[*Boston Med. and Surg. Journal.*

Observations on the Beneficial Effects of Pepsine in the obstinate Vomiting of Pregnancy. By Dr. L. Gros.

In a great majority of cases the vomiting of pregnancy may safely be left to the influence of time; but there are some cases in which females are scarcely able to retain in their digestive system a sufficient amount of nourishment to support their existence, and are therefore reduced to the last degree of emaciation. In some, also, the shocks occasioned by this obstinate and repeated vomiting become the source of abortions, which might have been prevented by moderating the activity of the morbid phenomenon. A very remarkable case was related in 1856, by M. Tessier, Professor of Clinical Medicine at Lyons, showing the immediately beneficial effects of a dose of pepsine in a case of vomiting during pregnancy. In this case the symptoms resisted all the ordinary methods which were employed, and the patient was unable to retain in her stomach any substance whatever. Under these circumstances, the patient was brought to M. Tessier, who found her in the following condition: The vomiting had continued for two months, and she was at the end of the fourth month of her pregnancy; she presented the appearance of a skeleton, having the aspect and cough of a phthisical subject; the pulse was 140, and M. Tessier thought at first that the case was one of pulmonary tubercle. Finding

that all treatment had been hitherto inefficacious, and that the lady was fast actually dying of inanition, he was seriously meditating upon the propriety of inducing abortion as a means of saving her life; but as a last resource, before operating, he determined to employ pepsine. He accordingly prescribed one gramme, to be divided into two doses, and taken every day in a spoonful of broth. At the very first dose the broth was retained, and from that moment the vomiting never returned. On the third day the lady ate some chicken, and then some beef-steak. The treatment was continued in the same manner for three weeks, and at the end of that time the cure was complete; the emaciation was replaced by *embonpoint*, the fever and the cough ceased with the vomiting, and at the end of the nine months the lady was safely deliverd.

Dr. Gros then relates six other cases in which the pepsine was employed with the same success, and he thinks himself warranted in concluding that pepsine undoubtedly produces good effects in the vomiting which attends pregnancy. He explains the results by supposing that, although in the first instance the vomiting is due only to the sympathy existing between the uterus and the stomach, yet subsequently the stomach itself becomes affected, as is proved by the fact that in the beginning of pregnancy the vomiting occurs only in the morning or the evening; but in aggravated cases it supervenes every meal, and all alimentary matters are rejected. In such cases, therefore, when the stomach has taken on a morbid habit, and exhibits an alteration of secretion, the pepsine seems to be really indicated; although in a merely sympathetic action between the uterus and stomach it would be difficult to explain the efficacy of its action.—[*Bul. Gen. de Therap.*, and *Brit. and For. Med. Chir. Rev.*

On the Introduction of the Catheter in Stricture. By Dr. SLADE, of Boston.

I prefer that the patient should be in bed, that he should be warmly covered, and that he should be particularly protected against any sudden chill. A bougie is then to be selected, of a size corresponding to the size of the stream passed, as nearly as may be, or to the presumed diameter of the constricted passage; this is to be carefully lubricated with lard, cold cream, cerate, or some other equally tenacious substance, which is greatly to be preferred to the olive oil so commonly in use. Thus prepared, the instrument is to be carried carefully down to the seat of the stricture, and, if possible, pushed on into it, the entrance of its extremity being at once known by the peculiar manner in which it is grasped. After a few moments' delay, the bougie,

in a great majority of cases, may pe pushed on into the bladder. This, however, it must be borne in mind, is not always necessary; the mere presence of the instrument at the seat of the obstruction is generally sufficient to overcome the spasmodic action upon which the retention depends. The only difficulty in carrying these delicate instruments down to the stricture, is from their becoming entangled in the various lacunæ, which, as is well known, are greatly enlarged in this disease.

Mr. Henry Thompson, of London, has recently suggested a method of protecting the mucous membrane from injury, and of rendering the introduction of small instruments more easy, particularly in these very cases of narrow stricture, which on trial will be found very useful. It consists in the simple method of applying the oil to the urethra itself, and very freely, rather than to the instrument. In order to effect this, he says, the nozzle of a common glass syringe, containing from four to six drachms of pure olive oil, should be introduced into the urethra as far as it will go, the external meatus being at the same time closed upon the nozzle by the forefinger and thumb of the left hand, so that none can escape. Gentle pressure being now made upon the piston-rod, the oil gradually finds its way down to the stricture; and if this be very narrow, the urethra in front of it slowly fills and becomes slightly distended; but as the piston continues to descend, the oil will gradually pass through the stricture and onward into the bladder, thoroughly lubricating every part of the canal. At the moment the oil passes through the stricture, the operator may sometimes distinctly perceive a slight, but very complete, sensation communicated to the hand, of resistance overcome, and partial collapse of the previously distended urethra in front. The syringe is then to be removed, the finger and thumb still commanding the meatus of the urethra so that no oil escapes. The smallest catheter may now be introduced, and made to traverse the urethra—at all events as far as the stricture—with very little or none of that difficulty arising from the catching of its point against the walls of the passage, so often experienced with very small instruments, and which renders so much care necessary in their employment.

Temporary dilatation is, without doubt, the safest and surest method of treating organic stricture. Although slow, at the same time it can be easily managed, and can be suspended at any moment, according as circumstances require, and, above all, does not prevent the patient from pursuing his usual avocation; and for the early treatment of narrow irritable stricture, the use of gum elastic or wax bougies is far preferable to metallic instruments. I have seen patients who have suffered so much from the passage of small metallic instruments, that they have not been willing to allow their farther use, but have made rapid

progress under the employment of flexible instruments. When, however, the dilatation has proceeded so far that a No. 5 or 6 bougie passes with ease, then these may be laid aside and metallic instruments substituted.—[*Virginia Med. Journal.*

Strychnia in Sciatica.

Dr. O. C. Gibbs, of Frewsburg, Chatauque county, New York, (*American Medical Monthly*, September, 1857, relates an obstinate case of sciatica which had resisted colchicum, ammoniated tincture of guiacum, quinine and morphia, oil of turpentine, tincture of cimicifuga, iodide of potassium, Dover's powder, blisters over the great trochanter, and the endermic application of morphia, cups over the same part, and calomel to touch slightly the gums. For some time the patient, despairing of relief, had been in the habit of using opium, which was given at the discretion of his wife, as the only means of assuaging the pain. Dr. Gibbs describes his mode of using the strychnia, and its success in the following terms:—

"We now took two grains of strychnia, in crystals, and put it with two ounces of water, slightly acidulating the water with sulphuric acid. We also took four grains of podophyllin and five of sulphate of morphine, rubbing them up with sugar, and dividing them into twenty powders. We ordered thirty drops of the solution of strychnia, also one of the powders, to be taken three times a day. The patient had no severe paroxysm of pain after this, and within three weeks from the time of commencing the strychnia, he went down the Alleghany and Ohio rivers as a pilot on a lumber raft, and up to the present time he remains free from a return of the affection."

The author has omitted to say when the successful treatment was begun, and at what date he wrote the account of the case. He took charge of his patient March 6th, 1857. We are left to gather from the narrative, that the trial of the long list of remedies above mentioned lasted about three or four weeks before recourse was had to strychnia. Each dose of the solution of this substance, as directed by Dr. Gibbs, was equivalent to the sixteenth of a grain.—[*North American Medico-Chir. Rev.*

Tobacco in Erysipelas.

Dr. John G. Stephenson, of Terre Haute, Indiana, desires to call the attention of the profession (*Western Lancet*, May, 1857) to the treatment of erysipelas, which has proved so beneficial in his practice, that the use of it has become, with him, a matter of routine. "The treatment is simply the covering of the inflamed surface with wet tobacco leaves, (such as are to be had in any cigar shop,) which are permitted to remain until much nausea is

produced." Dr. Stephenson, while he admits that the excessive and distressing nausea produced by the internal use of tobacco prevents its administration by the stomach, is willing to believe in its power and safety when cautiously applied to a cutaneous surface, as a remedy for local inflammation.

We must, however, be aware of difficulty, not to say impossibility, of determining, after no matter how many trials, the extent of surface to be covered, and of absorption produced by this application of the tobacco, so as to procure the desired amount of sedative effect and accompanying nausea. The difference between the internal and external use of tobacco is only one degree; and in both instances there is uncertainty and risk of alarming, if not fatal results. Hence the great caution always practiced in the administration of this plant as a therapeutic agent—a caution which is especially called for in cases of erysipelas in old subjects with broken-down constitutions and slight powers of reaction.

In one of the cases related by Dr. Stephenson, the patient was pregnant about five months. She soon got well under treatment. This consisted in the use of calomel, followed by saline purgatives, Dover's powder, sulphate of cinchona, and the local use of tobacco. In another case of a person aged 17 years, slightly chlorotic, in which tincture of the chloride of iron internally and tincture of iodine externally failed to prevent the extension of the inflammation of the leg from above the ankle to above the knee, the application of the wet tobacco leaves soon produced extreme nausea and prostration, followed, after several other renewals of the same topical treatment, by a complete removal of the inflammation.—[*Ibid.*

The Influence of Water-Drinking upon the Metamorphosis of the System. By Dr. MOSLER.

Mosler contributes a valuable essay "On the Influence of Water on the Metamorphosis of Matter," which has gained the first prize from the *Verein für Gemeinschaftliche Arbeiten*. The author divides his researches into those made on children, those on adult females, and those on adult males; in all of them he examined the phenomena of metamorphosis—*a*, when the ingesta and the manner of living were as usual; *b*, when the water taken with the fluid articles of food was withdrawn; *c*, when various quantities of water were added to the amount of food. The water employed was pure, containing in sixteen ounces only 2.774 grains of solid substances, and 1.1036 grain carbonic acid. Abstinence from taking water led to the diminution of the secretions and excretions, principally those from the kidneys. Although the specific gravity of the urine became much increased,

yet not only the quantity of water, but also the total amount of solids excreted within a certain period was considerably lessened, and most so that of the urea, after which ranks the chloride of sodium, the phosphoric and sulphuric acids. Lesser was the decrease in the excretion through the skin and lungs. The stools were more bound, the tongue rather dry, the appetite defective. Increased ingestion of water caused an acceleration of the total metamorphosis of matter, which in some instances manifested itself more through the skin than through the other organs of excretion; in most cases, however, principally through increased flow of urine containing an increased amount of solid constituents; the increase was largest as regards urea, after which follow chloride of sodium, phosphoric acid, and sulphuric acid. These phenomena were accompanied by loss of weight of the body. On the days succeeding the increased ingestion of water the excretions were diminished, and the body gained weight.—[*Archiv d. Vereins. f. gemeinsch. Arbeiten*, and *Medico-Chirurg. Rev.*

EDITORIAL AND MISCELLANEOUS.

The Question of Poisonous Honey.—So extensively related are the interests of the Medical Profession, that there is no subject, however remotely connected with any branch of it, which is not worthy of our diligent attention. So liable to change are many of our apparently best established tenets, that, at the present day, no one is surprised to find some of the most settled and long accepted doctrines, brought into question, and subjected to the most rigorous re-examination. In the brief communication appearing under our original head, our respected correspondent has entered into an examination of an opinion which, for many years, has maintained its hold upon the convictions, not only of the people, but which has been scarcely ever doubted, so far as our knowledge extends, by the Profession. That honey sometimes contains elements which are deleterious to man, many facts, not only of occasional daily occurrence, will corroborate, but the long chain of testimony will be found even reaching back, far into the dim records of ancient history, connecting the familiar occurrences of to-day with the mythic annals of the past. The first account we have of an accident from the eating of poisonous honey is that given by Xenophon, of the effect produced upon the Grecian soldiers during the celebrated retreat of the ten thousand after the death of the younger Cyrus, which, though it did not operate fatally, "gave those soldiers who ate of it in small quantities, the appearance of being intoxicated, and such as partook of it freely, the

appearance of being mad or about to die—numbers lying on the ground as if after a defeat."*

In more modern times, we have well authenticated accounts of the injurious effects of certain specimens of honey. The author just quoted states that he once knew a lady upon whom the eating of honey, or the drinking of mead, acted like poison, and that he had heard of instances of death from the same cause. That bees sometimes extract their honey from poisonous plants, there can be no doubt, and the results are not confined to individuals of a particular habit of constitution or idiosyncrasy. In the fifth volume of *The American Philosophical Transactions*, will be found an account by Dr. Barton, of an extensive mortality which was produced amongst those who had partaken of the honey collected in the neighborhood of Philadelphia, in the autumn and winter of the year 1790. "The attention of the American government was excited by the general distress, a minute inquiry into the cause of the mortality ensued, and it was satisfactorily ascertained that the honey was chiefly collected from the *Kalmia latifolia*." It is also said that a specimen of poisonous honey, which continued to retain its deleterions properties for a very long time, was sent from Trebizond, on the Black Sea, to the Zoological Society of London, in the year 1834, by Keith E. Abbott, Esq.

We might collect from various sources facts which clearly prove the occasionally noxious properties of honey, but these are certainly not sufficiently numerous to interdict its use, either as an article of diet, or as an occasional ingredient in pharmaceutical preparations, but at the same time these facts will serve to assist the practitioner, in accounting for any phenomena indicating poisoning, which may be observed, after partaking of this kind of food.

The argument, used by our correspondent, that the sagacity of the bee will be any protection against the sometimes poisonous nature of their honey, is by no means unanswerable. The instinct which directs and governs the actions of insects is truly remarkable, and, perhaps, in no race more conspicuously so than in the bee; but it must be remembered that this "mimic of the reasoning faculty" is an endowment to animals, which has direct reference, so far as we can see, to *their own* preservation and to the propagation of their own species, and does not refer in the least, except incidentally, to the welfare of man. The instinct of the bee may, in most instances, preserve him and his race from the toxic effects of the deleterious properties of flowers, and yet what has served as his *nutriment*, may be for man, a most destructive *poison*. The question, perhaps, cannot be definitely settled without further investigation, as to the frequency with which we are to find poisonous

* See Kirby & Spence.

elements in honey, but so far as we have examined the subject, the weight of historical record is greatly in favor of the opinion, that this delightful natural product has been often, the medium by which the most deleterious poisons have been introduced into the system. The question at the present time is, however, of somewhat less importance to the physician and pharmaceutist than formerly, when most of those preparations in which sugar is now used, honey was an important adjuvant. In its relation to honey as an article of food, the question still retains its pristine interest, and should our correspondent's communication incite useful inquiry upon the subject, in this important relation, we feel assured that he will be much gratified by the result, whether it corroborates or contradicts his own present convictions.

Vaccination for Hooping Cough.—In presenting the following interesting correspondence, we regret that time has not been allowed to make such references to the records, as doubtless there are, as would tend to settle the question in dispute. The journals some years back, according to our recollection, contained numerous references to the subject, but we were not aware, till seeing the letter of Dr. Parkhurst, that the experiment had been tried at so early a date after the discovery of Jenner.

Decatur, Ga., August 24th, 1858.

Editors of Southern Medical and Surgical Journal:

Gentlemen,—The question, "Who originated the practice of vaccination for abating the symptoms of Hooping-cough?" is sometimes asked, and as it has been claimed to be of very *recent* origin, I beg to give you the copy of a letter which I received from an old practitioner of medicine.

Petersham, Mass., 17th July, 1857.

Dear Sir,—I received yours of the 6th instant: "You ask me what success I have in treating Hooping-cough by vaccination with kine-pox matter, and with whom did the idea originate?" Forty-two years ago, this autumn, I moved to Petersham, and hooping-cough was prevalent at that time in this place. Dr. Jos. H. Flint, late of Springfield, was my predecessor. He was using at that time vaccine virus as a remedy in that complaint.

I have been in practice over fifty years, and whether it was in use at the time I commenced the practice, I am not confident, but I have the impression that it was.

Who originated the practice is beyond my power to tell. If you wish anything more definite, you can obtain it from Dr. James Jackson of Boston, an aged physician, and a man of great medical learning and

long experience—having been a Professor in the Medical College of Boston for many years.

You ask me, "What success I have had in the use of this remedy in the Hooping-cough?" It is my opinion, when used early in this disease, it mitigates the severity of the complaint, and many times, seems to cut short its career. Truly, yours,

WILLIAM PARKHURST.

If this is of the least importance, you are at liberty to use the facts, or the letter, as you choose. Respectfully,

LEVI WILLARD.

Commendable to the Profession.—*The Newbern* (*N. C.*) *Gazette*, a high-toned and spirited secular paper, gives the following rebuke to everything which savours of Quackery:—"The Howard Association is informed that the price of admitting an advertisement of the length of the size it sends us, would be about $40. But we would not insert it under any consideration: Patent medicines, lottery, humbug and obscene advertisements, will never appear in the columns of this paper."

We have never exactly understood what connection that highly benevolent body, the Howard Association, constituted as it is, by the noblest, the most self-sacrificing and the most intelligent of our countrymen, may have with the advertisements found everywhere in the secular press, but certain it is, that if they do not indicate a felonious misappropriation of *clarum et venerabile nomen*, it is a most horrible prostitution of the spirit of that beneficent Association.

The Health of Augusta.—While we have to regret the prevalence of Yellow Fever in our sister cities—Charleston, Savannah, Mobile, and New-Orleans—we can but feel grateful for the unexampled health of our own city. "The official report," says the *Chronicle and Sentinel* of this city, "of the number of deaths in Charleston for the week, ending Saturday 18th (inst.), shows a total of 171—128 of which were from Yellow Fever, an increase of 25 over the previous week. Of the deaths by Yellow Fever, 99 were white adults, 23 white children, 3 coloured adults, and 3 coloured children."

This almost entire exemption of the coloured population is indeed remarkable, but yet not without precedent: in 1839, during the epidemic in Augusta, very few negroes died of the disease, more mulattoes and a large number of whites. So complete was the exemption of negroes, that many of them considered the disease intended as a special affliction to the whites.

Our own city still maintains its character for health, and there is every indication of the happy condition continuing. Some apprehension was felt by a few citizens when the Yellow Fever appeared in Savannah, but this was the only foundation for the uneasiness; every other circumstance is opposed to the disease appearing here. The very cleanly condition of our city, the prevalence of western winds, and the refreshing and wholesome showers during last month, are all conditions which did not obtain, immediately preceding either of the two epidemics heretofore in Augusta. In 1839, turnips were planted in the dry bed of the Savannah River, and in 1854, the corn crops in our immediate neighborhood were destroyed by drought.

We fervently hope, that an early frost may drive the destroyer from all those cities, now mourning under his sway.

"Honey Catches more Flies than Vinegar."—Let us Try Honey. —Notwithstanding the alleged noxious properties of honey, we have concluded to initiate a series of experiments which will be calculated to test its properties in a very important relation. Upon the result, we are almost willing to stake our reputation for good judgment, at least, in matters of *this* sort.

Did our readers have the opportunity we enjoy, of perusing the many "calls upon subscribers," "gentle hints," "plain talks," &c., in which courteous but urgent *duns* are presented to the subscribers of many of our exchanges, they would certainly come to one of two conclusions; either the readers of the Southern Medical and Surgical Journal are an unusually prompt corps of subscribers, or the Editors are very remiss in their calls for payment, as compared with those of other journals. The former of these, we are happy to say, comes nearer the truth; we have indeed, as a general thing, an excellent list of subscribers, who by their punctuality have afforded us but little excuse for showing our *talents* in the financial department of the Journal office, and while we have frequently had occasion to thank our patrons for our handsome list of monthly payments, we have not once, taken occasion to make any call editorially upon delinquents.

The Southern Medical and Surgical Journal has been, for years, a self-supporting periodical, notwithstanding the heavy expense attending its publication, and our liberal publisher, Mr. J. Morris, at the opening of the present volume, has considerably enlarged the work, trusting confidently to the high appreciation of our readers, and hoping that by their punctuality he would be saved from any embarrassment in carrying out the liberal arrangements he had contemplated for their benefit. These expectations have not been always met as fully as they should have

been ; but on looking over the list of those in arrears, we are convinced—for many of them are our personal friends and familiar acquaintances—that a simple statement of their dues by us, reminding them that the payment is now important, will be responded to promptly by them all.

Our publisher has considerable weekly payments to meet, and depends mainly upon receipts of money from subscribers for their liquidation. The small sum of three or six dollars is but little to each individual subscriber, but the delay in receiving it, in the aggregate, frequently causes him much inconvenience. We know so well the business habits of that species of the genus homo termed "Doctor," that we can well account for any ordinary amount of delay attending their payments, and yet we know too, that of all men, they are the most liberal, just, and kind hearted—all three of these admirable attributes must now be put in requisition, for the money is in *real demand.* In closing this rather unusual editorial, we would say to each reader ; "Before you leave the chair, enclose your Three, or your *Six*, or your *Fifteen* dollars in an envelope, with a short line, even in pencil-mark, with your name and address, and direct to J. Morris, Publisher, Augusta, Ga. Your name will then stand clear and unblemished upon our subscription list, and what is always gratifying to us as editors, we shall feel no fear of losing an intelligent and appreciating reader. "Losing a reader," refers to a certain surgical operation which Mr. Morris sometimes threatens to perform, which always *proves fatal* to the relation which we, as Editors, sustain to our subscribers. But we are baiting now with *honey* and do not intend that it shall even *smell* of vinegar. We wait in anxious but confident expectation the result of our entomological experiment, which perhaps would be better denominated, "*An experimental inquiry into the relative value of Honey and Vinegar in the apprehension of Flies.*

Navy and Army Appointments.—We are gratified to find that one of the two out of twenty-seven applicants, receiving the recommendation of the Medical Board for army appointments, was a Georgian :

Naval Appointments.—The Board of Naval Surgeons recently convened in this city, consisted of Surgeons Greene, President; Ruschenberger and Foltz, members; and Passed Assistant Surgeon Howell, Recorder. Twenty-seven candidates presented themselves for examination, of whom the following gentlemen were selected as qualified for the post of Assistant Surgeons in the United States Navy : Drs. Bertolette, of Pa. ; Leach, of N. H. ; Christian, of Va. ; Megee, of Pa. ; Gibbs, of N. J. ; Burnett, of Pa. ; and King, of Pa.

Army Appointments.—The Army Medical Board met at Richmond, in April last, and selected but two of twenty-seven candidates who were examined. Drs. J. H. Bill, of Pa., and J. H. Berrien, of Ga., were the successful candidates.—[*N. Am. Med. Chir. Review.*

Professional Dignity.—The following independence of bearing towards those in high places, might well be expected from the physician, who could say to his King's messenger—"Tell his Majesty to wait:"

Abernethy's Figs.—When Abernethy was canvassing for the office of surgeon to St. Bartholomew's Hospital, he called upon a rich grocer. The great man, addressing him, said: "I suppose, sir, you want my vote and interest at this momentous epoch of your life?" "No, I don't, (said Abernethy,) I want a pennyworth of figs; come, look sharp and wrap them up—I want to be off."

Laceration of the Perinæum, occurring during Labor in a Girl thirteen years old; Conception having taken place at twelve years and three months. Dr. H. Bigelow reported the case.—The patient was a farmer's daughter, who was delivered of a child one year ago, being then 13 years and 11 days old. She was small, rather slender, and not particularly developed. The rent extended nearly to the top of the sphincter, from three-fourths of an inch to an inch up the anus, so that there was a constant tendency to the passage of fæces, particularly when there was looseness of the bowels. The skin had formed over the laceration when Dr. B. saw it, and he advised the operation to be deferred; the patient recovered without it. She is now perfectly well, the upper part of the sphincter having assumed the function of the whole muscle. The child was of average size and perfectly healthy.—[*Boston Med. & S. Jl.*

New Hæmostatic.—After prolonged experience, M. Lami strongly recommends the following hæmostatic: ℞ Decot. rhataniæ, 300 parts; alum, 60 parts. If given internally, 70 parts of syrup are to be added. Internally, 10 drachms may be taken three times daily; while for external use it may be employed as injection or lotion.—*Boston Med. Jl.*

Sir Benjamin Brodie.—The Council of the Royal Society, London, have recommended Sir Benjamin Brodie to the Fellows as president of that most scientific body. As it is usual for those who are selected by the Council to be elected, Sir Benjamin will, in all probability be placed at the head of a society of which he has always been a distinguished member. Not only is he the leading and most eminent surgeon of that great metropolis, but he also holds a high rank as a philosopher and a man of science, so that the Fellows of the society may feel proud of his election.—[*N. Amer. Med. Chir. Review.*

Sound Common Sense and Quackery.—There are few more dangerous men in society than he who prides himself upon his sound common sense. Every one has met this man, and knows his characteristics well. He has no book-learning, and is inclined to be thankful that he has not; he is none of your recondite book-worms, full of cranks and nonsense; he is a thoroughly common-sense man. And so, without any special knowledge on any subject, he thinks himself qualified to decide upon all. He makes his own will in a plain and straightforward way, which involves his heirs in an endless chancery suit. He does everything in his own private and sensible fashion, and being always "open to conviction,"

ten to one but he falls a victim to the first plausible quack whom he meets. He eschews the mysteries of medicine, and laughs at the carefully-wrought theories of the treatment of disease. He trusts to the light of common sense, and adventures by its aid to grope obscurely amongst the complicated ropes and pulleys by which man's frame is guided, and to tamper with the delicate machinery, with about as much success as an ignorant land-lubber might have in adventuring to handle a ship's ropes in a storm, reefing when he should furl, and hoisting sail when he should scud with bare poles. Common-sense men delight in acting as their own physician: and this to be sure, they have a right to do; and, if they choose, to poison themselves with lobelia, salivate themselves with "vegetable" mercury, or line their intestines with antiseptic charcoal. We should be very little inclined to dispute this, their undoubted privilege. But they are commonly unwilling to confine the benefits of their common sense to their own proper person, and in their anxiety to extend them to other less sensible fellows they bring themselves within the range of sharp criticism. It is thus that we find ourselves called upon to concur in a vigorous rebuke inflicted by an inquest jury at Woolwich, upon a Mr. Clark, a dissenting minister. This gentleman, considering hydropathy to be based upon reasonable principles, and to be a more "sensible system" of medication than that recommended by the great men who have devoted their lives to the study of medicine, proceeded to apply his principles to the friendly treatment of an unfortunate man, afflicted with pneumonia, pleurisy, and pericarditis. He immersed his victim in cold water, and swathed him in wet bandages at the time that he was undergoing treatment by calomel. Gross deception was practiced upon the qualified attendant. The patient sank rapidly, and Mr. Clark, finding things look badly for him, beat a hasty but untimely retreat. It was too late to save the patient—if at any time he could have been saved. The jury included in the blame, Mr. Clark and the relatives; they greatly censured the blind assurance which could presume to meddle in a matter of life and death, the dangerous ignorance which could so mischievously blunder, and the unworthy deception which could counsel concealment from the attending surgeon. It is hard to say how many lives are snuffed out by sheer ignorance and stupidity. We chronicle but a tithe, and yet our gathering is abundant. Our sheaves overflow with fulness, and the sprouting crop of quackery almost defies the edge of the scythe.—[*London Loncet.*

Death of Foreign eminent Medical Men.—One of the most distinguished surgeons whom Ireland has produced, Sir Philip Crampton, lately died in Dublin in the 82d year of his age. We also notice, in the English journals, the death of Dr. John Snow, an eminent physician of London, well known for his researches on chloroform and other anæsthetics. Dr. Snow died from an attack of apoplexy, June 16th.—[*Boston Med. and Surg. Journal.*

SOUTHERN

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ORIGINAL AND ECLECTIC.

ARTICLE XXV.

Observations on Malarial Fever. By JOSEPH JONES, A.M., M.D., Professor of Chemistry and Pharmacy in the Medical College of Georgia, Augusta.

[Continued from page 676 of October No. 1858.]

CASE XXXII.—Irish laborer, age 23: has been in America eighteen years—the last three years has resided in Savannah. This summer has been "running" on a coasting schooner, between Savannah and the rice plantations on the Ogeechee and Savannah rivers.

July 17th, 12 o'clock M. Has entered the hospital with œdema of the abdomen and lower extremities. Says that he has had fever for three weeks, and that "it was broken by sulphate of quinia and five Quack pills.

Complains of debility and great irregularity in the action of his bowels. Has had no stool for three days. Liver and kidneys appear to be torpid; tongue clean; respiration 20; pulse 64. Under the action of alteratives and tonics, the action of the kidneys, liver and bowels was restored, the œdema disappeared, his appetite and strength returned, and he left the hospital July 30th.

August 18th. Has returned. After leaving the hospital, commenced work in a brick-yard, situated on the Thunderboldt road, in a low, damp, malarious district. The operatives at this brick-yard have always suffered greatly with malarial fever.

His skin is now covered with an eruption, resembling the severest form of lichen agrius. This eruption is thick upon his face, neck and chest. In these regions, and especially upon the face, the papulæ are very numerous—prominent—of a vivid red color, and in many places closely aggregated into large clusters,

of irregular form and size. Numerous vesicles and pustules, containing sero-purulent fluid, are mingled with the papulæ. From the clusters of papulæ, vesicles and pustules, an ichorous or sero-purulent fluid issues which desiccates into yellow crusts. In some places, from the thickening of the skin, the density of the crust, and the depth of the fissures, the disease might be mistaken for psoriasis. On the legs the eruption is much thinner and resembles lichen tropicus (prickly-heat). The vesicles and pustules are so large and numerous that, across the ward, the eruption resembles small-pox. Pulse 100; skin hotter than normal.

℞. Bitartrate of potassa, ʒi.; Water, fʒxvi. Mix. To be taken during the 24 hours. ℞. Tepid salt-water bath.

August 19th. Pulse 100; tongue red at tip, and coated with yellow fur; skin normal in temperature. Complains of great weakness, dull pain in his head, and bad taste in the mouth. Bowels torpid, have not been moved for two days.

℞. Calomel, grs. x., followed with castor oil in four hours.

August 20th. The nurse states that, last night he appeared to be out of his head. Respiration labored; pulse 120, weak. The acceleration of the pulse appears to be due, in part, to the fact that he has just returned from the water-closet, at the opposite end of the ward. Appears to be completely exhausted by the effort, and complains of great weakness.

℞. Sulphate of quinia, grs. xv.; Infusion of Virginia snake-root, fʒxvi. Mix. Tablespoonful every three hours. Continue the bitartrate of potassa.

August 21st. Complains of weakness. Pulse 88; tongue much cleaner, very slightly coated with yellowish fur, tip and sides of tongue redder than normal. Eruption appears to be drying up in many places. Has a peculiar, disagreeable smell, which was evident when he first entered the hospital on the 18th inst., and was not dissipated by the salt-water bath.

℞. Citrate of potassa, ʒj.; Water, fʒxij. Administer a wine-glassful every three hours. Discontinue the bitartrate of potassa. Continue the sulphate of quinia and infusion of Virginia snake-root.

August 28th. Appears to be improving. The eruption is fast drying up and disappearing. The pustules are covered with dried scales. Notwithstanding his apparent improvement, he is very weak and low spirited. During his sickness there has been an unusual depression and dullness in the action of his intellect.

℞. Iodide of potassium, grs. v., three times a day.

℞. Officinal infusion of quassia excelsa. fʒxvi.; carbonate of soda, ʒj. Mix. Wineglassful three times a day.

℞. Iodide of potassium, grs. v., three times a day.

August 30th. This morning, before taking his breakfast, was

suddenly seized with a strong convulsion, which lasted about ten minutes, and was succeeded by stupor. Now, four hours after the convulsion, cannot be aroused by the loudest interrogations, or by violent shaking. Skin moist. The perspiration stands in large beads upon his forehead. Pulse 80.

℞. Four cut-cups to back of neck, mustards to extremities, and blisters to calves of legs. Castor oil, f ℥j.

August 31st. Had another convulsion at 10 o'clock P. M. last night, after which his left leg appeared to be paralyzed. His left leg and foot continued to tremble from the time of the convulsion, during the night, up to the present time. The left arm is drawn up across the breast, and appears to be paralyzed. It requires considerable force to straighten it, and when released it flies back to its former position, like a steel spring. The left leg also, in like manner, returns when removed from its position.

The oil operated three times. Tongue moist and clean; pulse 96. He is stupid, and it requires loud talking to arouse him, and then he replies only by a low grunt. Although exceedingly stupid his intellect is not entirely gone, for he put out his tongue, after several requests in a loud voice. After having protruded his tongue, he retained it in this posture, notwithstanding loud requests to the contrary. When pressed upon the epigasrtic region, he cries out. Pressure here appears to give him great pain.

℞. Apply blister to back of neck, and 4 cut cups over epigastric region. Calomel, gr. i. every three hours.

Sept. 1st. *This patient died this morning at* 5½ *o'clock A. M.*

(5). AUTOPSY FIVE HOURS AFTER DEATH.

Exterior.—Body much emaciated, complexion normal, eruption quite dry, and the scales commencing to fall off.

Head.—When the scull-cap was removed, about f ℥vj. of blood flowed from the base of the brain. Dura-mater normal in appearance. Arachnoid membrane slightly pearl-colored, opalescent in several places. Blood-vessels of pia-mater, especially at the base of the brain, filled with blood. Much blood, and bloody serum was effused between the dura-mater and arachnoid membrane. Cerebellum and pons-varolii, of a bloody red color upon the exterior. The ventricles of the brain contained an unusual amount of serum. Structure of the brain appeared to be softer than normal, and the blood-vessels were filled with blood, and distinct. Blood-vessels of medulla-oblongata and superior portion of spinal cord filled and distended with blood. Much bloody serum was effused around the spinal cord. No clots were found in the blood and serum effused upon the brain. Weight of brain, grs. 21,655—equals lbs. 3, ozs. 1½.

Chest.—Lungs normal. Heart normal. Both ventricles contained light yellow clots, which appear to have been formed some time before death. Weight of heart, grs. 5031—equals ozs. 11½.

Abdomen.—Liver, color darker than normal. When cut, the color was dark reddish-brown; when squeezed, no bile could be seen issuing from the hepatic ducts; when the cut surface was exposed to the atmosphere its color became redder and brighter, and the venous blood, flowing from the veins of the liver, assumed the arterial hue upon the surface after exposure to the oxygen of the atmosphere. The blood-corpuscles of the blood of the liver presented, under the microscope, a normal appearance. Cells of the liver appeared normal—they were a little paler than usual. The oil globules were large, and in many parts of the liver appeared to be as abundant, if not more abundant, than in health. Trommers and Moor's test showed the presence of grape sugar in the liver. The process of Bernard gave an abundant floculent deposit of animal starch. When the deposit, precipitated from the decoction of liver, by alcohol, was treated with tincture of iodine, the nitrogenized matters were colored (under the microscope) of a yellowish-red; whilst the animal starch was changed to a beautiful blue and purple color. Weight of liver, grs. 36,312—equals lbs. 5, ozs. 3.

Spleen.—Much enlarged and softened—when pressed between the fingers, feels as if the tissues were giving way. Color, light slate, not so dark as malarial spleens generally, but resembling them in the character of the color and the softening of the fibrous frame-work. The anterior surface of the capsule of the spleen was attached by coagulable lymph to the peritoneum, thickened and of a white color, from the effusion of coagulable lymph. Pulp of spleen, of a purplish and reddish-brown color. After exposure to the atmosphere, the pulp of the spleen upon its surface, assumed a bright arterial hue. Under the microscope, the blood of the spleen presented the normal appearance—the dark, granular masses were almost entirely absent. Weight of spleen, grs. 12,687—equals lbs. 1, ozs. 13.

Pancreas.—Normal in size and appearance. Weight of pancreas, grs. 1,431—equals ozs. 3¼.

Kidneys.—Enlarged, and greatly engorged with blood.—Weight of kidneys, grs. 7,218—equals lbs. 1, oz. ½.

Alimentary Canal. Stomach.—Blood-vessels upon the exterior filled with black blood. Internal mucous membrane generally of a reddish and pinkish color, and in many spots, where the congestion was much greater, the color was much deeper. Brunner's glands, in the duodenum, and Lieberkühn's follicles, in the pyloric extremity of the stomach, and in the pylorous and duodenum, appeared to be enlarged, and gave to the mucous membrane a mammillated appearance.

Small Intestines.—Mucous membrane of a reddish color, with blood-vessels filled with blood, especially at the superior portion. The glands of Peyer, in the inferior portion of the intestines, were distinct, but pale, and without any evidence of congestion. The solitary glands of the inferior portion of the ileum, especially in the region of the ileo-cæcal valve, were enlarged. Solitary glands in the superior portion of the colon, also enlarged. Mucous membrane of the stomach and intestines was colored yellow by the bile. The small intestines contained much offensive gas, tenaceous mucous, and fecal matters, colored yellow by the bile. The colon was distended with offensive gas.

It is evident from this autopsy, that the effusion of blood upon the brain was the cause of the death of this patient; for the eruption was fast disappearing—the liver had almost regained its normal hue, its blood possessed the power of changing, upon exposure to the atmosphere, to the arterial color—the elaboration of the bile, animal starch and grape sugar, was performed in a normal manner.

The spleen appeared to be fast recovering from the effects of malarial fever. Although softened and enlarged, still its pulp had regained the power of changing when exposed to the atmosphere, to the arterial hue, and the blood corpuscles appeared, under the microscope, to be normal in form and color. The effusion of blood upon the brain, and of serum into the ventricles, and the softening of its structures, appear to have been the results of alterations of the nervous elements, capillaries and blood.

Were these the results of the action of the malarial poison? The following cases have an interesting bearing upon this question:—

CASE XXXIII.—House painter—native of New York: red hair, blue eyes, florid complexion; height 5 feet 9 inches; age 30 years; weight, in health, 160 lbs.

October 20th. Has entered the hospital, with a note from his attending physician, stating that he had an attack of malarial fever three weeks ago. This yielded, in the course of one week, to the action of sulphate of quinia. Since that time, has remained in a very feeble condition.

Lips, tongue, gums and complexion, pale, anæmic. He appears to be suffering from an impoverished condition of the blood.

He was placed upon iron and tonics, and appeared to be doing well, when, upon the night of the 22nd inst., he was seized with convulsions. Had fifteen successive convulsions in the course of three hours, which left him in an insensible condition.

Died comatose, seven hours after the termination of the convulsions.

(6). AUTOPSY FIVE HOURS AFTER DEATH.

Exterior.—Complexion pale, anæmic. Did not appear to have lost a great amount of flesh.

Head.—Not examined.

Chest.—Lungs pale, anæmic. Structures appeared to be normal. Heart normal.

Abdominal Cavity. Liver.—Upon a general view, it was of a light slate color, with purplish and brownish reflections. Upon nearer inspection, it presented a mottled appearance—many of the lobules presented the yellow color of cirrhosis. The cut surface presented, upon a general view, a light bronze and purplish yellow color. Upon close inspection, the yellow lobules were distinctly visible. Structure of liver unusually firm—it required great force to tear it: it was enlarged. The yellow color of many of the lobules, and the large admixture of dense fibrous tissue, proves that this liver was in a cirrhosed condition previously to the attack of malarial fever. The yellow color of cirrhosis was masked very much by the characteristic effects of the malarial poison. Bile, of a brownish-yellow color, in mass, and of a gamboge-yellow color, in thin layers. It was tenaceous, like mucus; in fact, it resembled closely colored mucus.

Specific gravity of bile 1022·5.

Spleen.—Enlarged, and softer than normal, but much harder than usual in the active stages of malarial fever. The cut surface presented a compact, dark brown, almost black appearance. Numerous small white bodies, about the size of a millet seed, were found scattered through the pulp of the spleen. I have never before seen the splenic corpuscles so numerous, large and distinct. The exterior of the spleen was of a slate color. The compact nature of the pulp of this organ shows that it was recovering from the effects of the malarial fever.

Kidneys.—Normal.

Alimentary Canal. Stomach.—Small and large intestines presented a healthy appearance.

The cirrhosed condition of the liver pointed to the previous habits of this man. Although the malarial fever apparently yielded to treatment, still its effects, combined with those of intemperance, produced a fatal issue.

CASE XXXIV.—Irish laborer, age 40: height 5 feet 10 inches; dark brown hair, brown eyes, dark complexion. In health, weighs 200 lbs.; at the present time, his weight is not more than 100 lbs.

August 13th. Has entered the hospital in an exceedingly feeble condition—says that he has had a severe attack of fever,

complicated with bilious diarrhœa. Appears to have been heroically medicated, and at the same time neglected during his sickness. He is severely salivated, and his mouth, tongue and fauces are covered with small ulcers. Neglected sinapisms and blisters have produced large ulcers upon the epigastric region and upon the thighs and legs. The surface of the body has numerous boils and ulcers, and has a disagreeable nauseous smell. Complexion sallow—anæmic. Says that he is "very weak, and completely worn out with pain and loss of sleep."

Tonics and opiates were administered, and appropriate remedies applied to the mouth and ulcers upon the skin.

August 22nd. Improves very slowly. Mouth still sore, and the ulcers show no disposition to heal.

Examination of Blood No. VII.—Blood coagulated slowly. In the specific gravity bottle the colored corpuscles settled to the bottom, leaving above a clear, transparent, yellow clot. In a small shallow porcelain capsule the superior central portions of the clot appeared transparent for several lines in depth.

A portion of blood was set aside in a glass bottle. In twelve hours the clot commenced to disintegrate and liberate its colored blood-corpuscles, and in twenty-four hours the blood gave forth a putrid smell, and the serum was filled with the liberated colored corpuscles, presenting the appearance of blood.

A specimen of blood drawn at the same time from a patient who had recovered from an attack of intermittent fever three weeks before, was placed in the same room, in a similar bottle, by the side of this specimen. The clot, serum and odor of this, remained unaltered for fifty hours.

Specific gravity of blood 1042·4. Serum of a golden yellow color.

Water		Solid Matters	
In 1000 parts of Blood,	839·589	In 1000 parts of Blood,	160·411
" " " " Serum,	912·779	" " " " Serum,	87·221
(1) " " " Liq. Sang.,	909·839	(1) " " " Liq. Sang.,	90·169
(2) " " " " "	879·813	(2) " " " " "	120·187

Solid Matters in Serum of 1000 parts of Blood, 80·227.

Fixed Saline Constituents,

In 1000 parts of Blood,	7·500
" " Serum,	4·056
(1) " " Liquor Sanguinis,	4·066
(2) " " " "	5·405
" " Solid Matters of Blood,	46·754
" " " " " Serum,	46·387
" " " " " Blood Corpuscles,	51·046
" " Moist Blood Corpuscles,	12·131
In Blood Corpuscles of 1000 parts of Blood,	3·770
" Serum of 1000 parts of Blood,	3·730

1000 PARTS OF BLOOD CONTAINED,

Water,			839·589
Dried Blood Corpuscles,	77·484	Organic Matters,	73·355
		Mineral "	3·770
Fibrin,			2.710
Albumen, Extractive and Coloring Matters,	80·227	Organic Matters,	76·387
		Mineral "	3·730

1000 PARTS OF BLOOD CONTAINED,

Moist Blood Corpuscles,	309.936	Water,	232·452
		Organic Matters,	73·655
		Mineral "	3·770
Liquor Sanguinis,	690·064	Water,	607·124
		Organic Matters,	76·387
		Mineral "	3·730
		Fibrin,	2·710

1000 PARTS OF MOIST BLOOD CORPUSCLES CONTAINED,

Water,	750·224
Organic Matters,	237·645
Mineral Matters,	12·131

(1) 1000 PARTS OF LIQUOR SANGUINIS CONTAINED,

Water,	909·839
Organic Matters,	83·075
Mineral Matters,	4·066
Fibrin,	2·948

(2) 1000 PARTS OF LIQUOR SANGUINIS CONTAINED,

Water,	879·813
Organic Matters,	110 695
Mineral Matters,	5·405
Fibrin,	3·927

August 26th. Left arm is swollen, and painful to the touch. Ulcers upon the surface of the body appear slightly improved. Still very weak. Disagreeable odor continues.

℞. Apply cold-water dressing to arm. Infusion of wild-chery bark, wineglassful three times a day. Huxham's tincture of bark, tablespoonful three times a day.

Sept. 3rd, 12 o'clock M. Lies in a stupor. Has taken a sudden change for the worse. During the last week, has been able to dress himself, and sit by his bed. Cannot now be aroused by hallooing or shaking. This morning passed his urine and feces in bed.

The whole of the left arm, from the shoulder to the tip of the fingers, is greatly swollen. Pulse 140; respiration 28. Temperature of hand, 94° 5 F.

℞. Administer stimulants freely, in conjunction with the tincture of bark.

3½ o'clock P. M. Lies with his mouth and eyes open, and ap-

pears to be insensible. Skin in a profuse perspiration, which has saturated his shirt and the surrounding bed-clothes. Pulse 128; respiration 33. Temperature of hand, 101° F.

Sept. 4th, 12 o'clock M. Lies in a stupor, with his mouth open.; teeth coated with sordes; passes his urine and feces in bed. The odor from his body is nauseating and exceedingly disagreeable. Surface of skin covered with a clammy sweat, which resembles bloody serum. This sweat stains his shirt and the bed-clothes, just as bloody serum would do. Pulse 106; respiration 26. Temperature of atmosphere, 81° F.; temperature of hand, 100°.

Sept. 5th, 10 o'clock A. M. Lies in a stupor, with mouth and eyes open. Every tendon and muscle of his body is twitching and jumping violently. Respiration 42, labored, thoracic, spasmodic, like that of a man during a severe chill. The muscles of the thorax and abdomen shake, and twitch, and jump violently, as in a severe chill. At every inspiration and expiration he emits a sound, like the hoarse bark of a thirsty and starved dog. The muscles of the face contract and relax, and contort in every possible manner, making the most awful grimaces. During these contortions of the muscles of the face, every expression of ridicule, sarcasm, joy, pain, agony, malice, revenge, hatred, are depicted in rapid succession. The jerking of the muscles appear to be paroxysmal—they are very violent for a few minutes, and then moderate for a few moments. The nurse states that it commenced at 8 o'clock P. M., and was much more violent during the night than at the present time. The patients in this ward state, that they were kept awake during the whole night, by his barking and shaking. Pulse 144, feeble. It was very difficult to count the beats of the pulse, on account of the violent twitching of the tendons of the fore-arm. Temperature of hand, 103° F. Skin covered with the clammy sweat, resembling bloody serum. Odor of body intolerable.

7 o'clock P. M. Respiration 40, thoracic, spasmodic; pulse 140. Continues in the same jerking state; spasmodic bark is much lower and hoarser; skin hot.

Sept. 6, 10 o'clock A. M. Lies in the same insensible state, with his body covered with the clammy reddish sweat, and emitting an awful stench. Twitching and jerking and contortion of muscles have ceased. Respiration 38, spasmodic, gasping. Pulse 140. Temperature of hand, 105° F.; Temperature of atmosphere, 80°. He is evidently near his end.

This patient died eight hours after this observation, at 6 o'clock P. M.

His superstitious friends, who had neglected him during life, prepared a coffin before his death, and placed him in it, and drove off half an hour after his death.

Although exceedingly anxious to perform a post-mortem examination, could not resist their earnest entreaties to the contrary.

CASE XXXV.*—German Butcher, age 23: height 5 feet 10 inches; light brown hair, brown eyes; weight, in health, 180 lbs.—his present weight cannot be more than 110 lbs.

Has been suffering with chill and fever for two months, and has had no medical attendance until the 25th of September. His physician administered calomel and opium, with a view to salivation, and placed a large blister, 8 inches by 7, over the epigastrium. This plan of treatment appeared to act in concert with the malarial poison, and exhaust his small store of strength.

He came into my hands on the 28th of September, 7 o'clock P. M., in an exceedingly feeble and critical condition. Complexion sallow, anæmic; flesh and strength greatly reduced; nervous and muscular forces very feeble. Pulse 120; respiration 24, labored. Lies in a stupor—cannot be aroused; tongue dry and harsh to the feeling; skin dry and rough in all parts of the body, except just around the nose, where there is a slight moisture.

℞. Cut-cup to each temple, and sinapisms to extremities. Sulphate of quinia, grs. v., every three hours, up to grs. xxxv.

℞. Infusion of Virginia snake-root, f℥xvi.; Brandy, f℥xvi. Tablespoonful every half hour. Diet, milk-punch and arrow-root.

Sept. 29th, 11 o'clock A. M. The mustards, stimulants and sulphate of quinia, have aroused him, and he is brighter this morning, but still not restored to the full exercise of the reasoning faculties. Pulse 112, fuller than at 7 o'clock P. M.; respiration 18. Temperature of atmosphere, 80° F.; temperature of hand, 95° 12. Temperature under tongue could not be determined, on account of his restlessness. Tongue slightly coated with yellow fur, dry and harsh to the feeling.

℞. Apply sinapisms again to the extremities, and continue brandy and infusion of Virginia snake-root, tablespoonful every hour.

4 o'clock P. M. *Examination of Blood No. VIII.*—Blood coagulated slowly. In one specimen the coagulation was remarkably slow, and the blood-corpuscles gravitated towards the bottom of the vessel, and left above a clear golden colored clot. This transparent portion of the clot was about one-fourth of an inch in thickness. Serum of a deep golden color. Reaction of serum alkaline. Specific gravity of blood 1036·6; specific gravity of serum 1023·6.

* The alterations of the blood in this case have been previously noticed, by the author, in the May number of the Southern Med. and Surg. Journal.

Water		Solid Matters	
In 1000 parts of Blood,	840·511	In 1000 parts of Blood,	159·489
" " " " Serum,	913·950	" " " " Serum,	86·050
(1) " " " Liq. Sang.,	912·665	(1) " " " Liq. Sang.,	86·978
(2) " " " "	882·723	(2) " " " "	117·277

Solid Matters in Serum of 1000 parts of Blood, 79·135.

Fixed Saline Constituents,

In 1000 parts of Blood,	5·796
" " " " Serum,	2·647
(2) " " " " Liquor Sanguinis,	3·498
" " " " Solid Matters of Blood,	36·341
" " " " " " " Serum,	30·178
" " " " " " " Blood Corpuscles,	42·914
" " " " " " " Moist Blood Corpuscles,	10·728
" Blood Corpuscles of 1000 parts of Blood,	3·409
" Serum of 1000 parts of Blood,	2·387

1000 Parts of Blood Contained,

Water,			840·511
Dried Blood Corpuscles,	79·434	Organic Matters,	76·000
		Mineral "	3·409
Fibrin,			0·877
Albumen Extractive and Color'g Matters,	79·096	Organic Matters,	76·508
		Mineral "	2·387

1000 Parts of Blood Contained,

Moist Blood Corpuscles,	317·748	Water,	238·271
		Organic Matters,	76·000
		Mineral "	3·409
Liquor Sanguinis,	682·252	Water,	602·240
		Organic Matters,	76·708
		Mineral "	2·387
		Fibrin,	0·877

1000 Parts of Moist Blood Corpuscles Contained.

Water,	749·873
Organic Matters,	239·284
Mineral Matters,	10·728

(1) 1000 Parts of Liquor Sanguinis Contained,

Water,	913·022
Albumen, Extractive and Coloring Matters,	83·303
Mineral Matters,	2·647
Fibrin,	0·928

(2) 1000 Parts of Liquor Sanguinis Contained,

Water,	882·723
Albumen, Extractive and Coloring Matters,	112·433
Mineral Matters,	3·498
Fibrin,	1·285

This examination reveals the following changes in the blood:—

1. The fibrin is greatly deficient. The deficiency of fibrin in the blood was farther demonstrated by the fact, that the blood oozed from the cut-cups upon the temples, for 18 hours, and it was finally necessary to check the flow by cold applications.

2. The colored corpuscles are greatly diminished, the dried corpuscles being 79·434, and the moist blood corpuscles 317·748. The fixed saline constituents are correspondingly reduced in amount.

3. The color of the serum is changed to a golden color, and the albumen is diminished.

It is worthy of note, that the reaction of the blood is alkaline, while that of the saliva and urine is strongly acid.

7 o'clock, P.M. Pulse very feeble; feels like the vibration of a delicate silver thread. Owing to its exceeding tenuity and feebleness, cannot be counted with absolute accuracy. The number of beats to the minute lies between 130 and 150.

Respiration 34, thoracic, labored. Tongue dry and rough; feels to the touch like sand paper; skin of trunk and extremities much cooler than normal. Has been taking brandy and the infusion of Virginia snake-root, and milk punch, during the day. ℞ Apply sinapisms to extremities, and continue the stimulants, milk and arrow-root.

September 30th, 2½ o'clock, P.M. Sinapisms aroused him, and he appears to be more intelligent. Skin warmer; Pulse 112, still feeble, but decidedly better than last night. Respiration 17, full, thoracic. Temperature of atmosphere, 73°F.; temp. of hand, 91°. Tongue slightly coated with yellow fur, moister and softer; surface of blister raw and red; urine of a bright red color; specific gravity 1016. When carefully tested for uric acid, the urine was found to contain only a trace—a few small crystals. Reaction of urine and saliva decidedly acid.

℞ Sulphate of quinia, grs. v., every three hours, up to grs. xx.

℞ Continue brandy and infusion of snake-root tea.

October 1st, 2 o'clock, P. M. Restless and stupid. Pulse 100; respiration 16, full, thoracic. Temperature of atmosphere, 79°F.; temp. of hand, 88° 5; temp. under tongue, 94°5. The temperature of the trunk is between 4 and 6 degrees below the normal standard. The temperature of the extremities is 10 degrees below the normal standard. Tongue dry and rough; teeth coated with sordes; refuses to take nourishment.

October 2nd, 2 o'clock, P. M. Intellect more active, but still very slow and dull. When aroused, says that he feels easy; has a disagreeable smell. Tongue of a brownish yellow color, and as dry and rough as a fresh sawed board; teeth coated with sordes; pulse 124; respiration 18. The incision in the arm, where he was bled, has not healed. It bled during the night,

and drops of limpid serum are now oozing continually from it. The left side of his head is swollen, and painful to the touch: this compels him to lie upon the right side and arm in which he was bled.

℞ Tincture of chloride of iron, ♏xv. three times a day.

October 3rd, 2½ o'clock, P.M. Pulse 120; respiration 24. The state of his tongue presents a striking contrast with what it was yesterday: it is now moist and soft. Reaction of saliva decidedly acid. During the night his right arm has swollen from the shoulder to the end of the fingers, to nearly twice its natural size; the veins upon the surface are filled with blood; the lancet wound is open and emits a serous fluid. The lancet with which he was bled was carefully washed before its use. The swelling of the arm appears to be due to the interference of the circulation by the pressure of his body, rather than to a poisoned lancet.

℞ Continue tonics, stimulants, and nutritive diet. Paint the whole arm, from shoulder to tip of fingers with the tincture of iodine, and apply cold-water dressing.

October 4th, 2 o'clock, P. M. Says "that he feels badly; has pain all over." The swelling on the left side of the face, in the region of the ear, and angle and joint of the jaw, continues to increase: it is hard, tense, and painful to the touch. Boils and ulcers are appearing upon various parts of his body. The blister presents a purplish red, unhealthy, raw surface; tip of tongue red and glazed; superior surface coated with brownish yellow and black fur; tongue is so dry that it is protruded out of the mouth with great difficulty; pulse 120; respiration 24. Temperature of atmosphere, 76°F.; temp. of hand, 100°5. The rise of the temperature in the extremities is probably due to inflammatory action.

October 5th, 2 o'clock, P.M. Says that he is better. Face a little flushed: up to the present time it has been entirely without color; swelling in arm stationary; swelling on side of face continues to increase, and is very painful; pulse 118. Temperature of atmosphere, 73°F.; temp. of hand, 100°.

℞ Paint arm and side of face with tincture of iodine.

October 6th, 4 o'clock, P.M. Skin hot and dry; has never been moist since his entrance into the hospital. Complains greatly of his head: carotid arteries are throbbing violently; pulse 104; respiration 24. Temperature of atmosphere, 72°F.; temp. of hand, 101°; the temp. of the trunk is about 104°F. Since the commencement of the inflammation his pulse has become fuller and stronger. Slight moisture about the tongue.

℞ Chlorate of potassa, ℥i.; water, f℥viij.—Dissolve. Administer during the 24 hours, and continue.

℞ Compound tincture of gentian, f℥j.; comp. tinc. Peruvian

bark, f ʒj.—Mix. Administer three times a day in f ʒij. of the infusion of Virginia snake-root.

October 7th, 4 o'clock, P.M. Arm greatly swollen, and when bent much serous fluid issues from the lancet wound. Surface of blister shows no disposition to heal; ulcers upon the body are increasing; tongue moister and softer than it has been during his sickness. Temperature of hand, 102°F.; temp. of trunk about 104°.

℞ Continue stimulants, alteratives, tonics and diuretics. Diet, soft boiled eggs, milk punch, wine whey, arrow-root and mutton soup.

October 9th, 4 o'clock, P.M. Appears brighter and stronger. Abscess upon the side of his face has been lanced; it discharged a large quantity of pus; it had formed a communication into the meatus auditorias externus from which much pus issued; pulse 168, probably excited by the lancing of the abscess one hour ago.

October 10th, 4 o'clock, P.M. Skin hot and dry; tongue dry and rough; abscess in the region of the ear, and joint and angle of the inferior maxillary bone, continues to discharge large quantities of pus, and masses of cellular tissue. Arm looks badly; the skin presents a greenish yellow, unhealthy appearance; the cellular tissue appears to be completely infiltrated with serum; when it is flexed, and the tissues thus compressed, considerable quantities of this fluid issue from the lancet cut, which has never shown the least disposition to heal; pulse 130, full and strong; respiration 28. Temperature of atmosphere, 70°F.; temp. of hand, 103°75; temp. under tongue, 104°5.

October 12th. The surface of the blister has commenced to suppurate and discharge an unhealthy looking offensive fluid. It has never shown any disposition, either to healthy inflammation or healing. The ulcers upon various parts of the body have steadily increased in size, and like the blister, discharge an unhealthy offensive fluid, and show no disposition to heal.

October 13th. The arm looks dreadfully; the skin over the biceps muscle is black and gangrenous; digestion bad and bowels loose.

October 17th. The skin over the entire region of the biceps, and over a large portion of the triceps mucle, has sloughed entirely away, and exposed the red quivering muscles. There has been no hemorrhage, but a large discharge of the serous fluid which had infiltrated the cellular tissue. The surface of the blister and ulcers, and exposed muscles, emit a disgusting stench. Bowels are moved frequently.

October 21st. The biceps muscle has sloughed entirely from its lower attachment. It is impossible to give a correct idea of his distressing and loathsome condition. He is completely ex-

hausted and worn out by diarrhœa, and by the discharge from the numerous diseased surfaces.

This patient died October 22nd, 12o'clock, P.M.

It is surprising, that although the patient has apparently had the exercise of his intellect for the last three weeks, he has never once been heard to utter a complaint. He has been either a man of extraordinary resolution, or else the effects of the malarial poison, in conjunction with the changes which it has produced in the nervous system and all the organs and tissues, have tended to blunt the sensibilities and render the patient callous alike to pain, disgusting odors, and the fear of death. He has nothing in his face to denote an unusual amouut of either intelligence or resolution, and the latter appears to be the true supposition.

(7) AUTOPSY TWELVE HOURS AFTER DEATH.

Exterior.—Trunk and limbs greatly reduced in flesh—a skeleton with the skin stretched over.

Head, not examined.

Chest.—Lungs normal, but very pale and anæmic.

Heart, normal. The auricles of the heart contained a quantity of fluid blood, which was carefully examined under the microscope. Colored blood corpuscles appeared normal in color and structure. When the blood was treated with acetic acid, the colored corpuscles disappeared and the colorless corpuscles remained behind. The colorless corpuscles appeared to be more numerous than normal.

Abdominal Cavity. Liver, of a light slate color, approaching ing in many places to purple and purplish-brown, as if it was returning to its normal color. The cut surface was of a bronze and purplish-bronze color, as if its substance also was returning to its normal color. Structure of the liver unusually firm. Blood-corpuscles of the blood of the liver appeared to be normal under the microscope. The liver-cells were normal in shape—only a little paler than usual.

The Gall-Bladder, was filled with bile of a brownish-yellow opaque color, when seen in mass, and of a gamboge-yellow in thin layers; and with numerous, irregularly-shaped, yellow masses, of various sizes, from an English pea to a grain of sand. These yellow masses formed about two-fifths of the contents of the gall-bladder. These masses were soft and readily crushed between the fingers. Under the microscope, they were found to consist of numerous cells from the mucous membrane of the gall-bladder, and a yellow amorphous matter. The bile duct appeared to be choked up with these cells and this yellow amorphous matter. Sp. gr. of bile, 1036.

Spleen.—Enlarged; surface covered with effused coagulable

lymph, and bound to the liver and diaphragm by bands of coagulable lpmph. A large quantity of pus, of a greenish-yellow color, issued from the anterior border of the spleen, which was firmly attached to the liver. Whether the abscess had opened and discharged this pus before death, or whether the abscess was accidently ruptured during the opening of the chest and abdomen, I was unable to determine.

The structure of the spleen felt firm, very unlike the soft, yielding structure of the spleen of the active stages of malarial fever. When cut, many portions of the spleen resembled a dark bronzed and slate colored liver. The pulp of these portions was not soft, and did not pour out, like the pulp of the spleen of the active stages of malarial fever.

The liver-like substance of the spleen was found to consist, under the microscope, of fibrous tissue, and numerous colored corpuscles, and flakes, composed of granules resembling the dark-colored flakes of the black vomit of yellow fever. These flakes were, without doubt, composed of altered colored corpuscles. The colorless corpuscles of this portion of the spleen appeared to be more numerous than normal.

This dark, liver-like substance appears to be nothing more than the pulp (mud) of the malarial spleen, from which the serum has been in a great measure removed, and in which alterations of the blood-corpuscles have taken place, and fibrous tissue formed.

After several hours exposure to the oxygen of the atmosphere, the color of this portion of the spleen was not altered.

In addition to the abscess, opening upon the surface of the spleen attached to the liver, the substance of the spleen contained numerous other smaller abscesses, of various sizes, (two or three largest of the size of a bullet, and the smallest of the size of an English pea,) filled with thick greenish-yellow pus. Portions of the spleen, especially surrounding the abscesses, were altered into a cheese-like substance. Under the microscope, these cheese-like portions consisted almost entirely of pus corpuscles, and large cells, containing granules and other smaller cells, thus resembling cancer cells; and also black masses composed of granules (probably altered colored corpuscles) like those from the dark dense portions of the spleen; and also numerous oil globules. The bodies resembling cancer-cells were not numerous. The pus issuing from the large abscess, resembled ordinary pus, under the microscope, and contained a few of these peculiar cancer-like cells.

Kidneys, normal in appearance. Bladder contained a small quantity of urine, which was normal in color.

Alimentary Canal.—The stomach and small and large intestines were greatly contracted. Blood-vessels of mesentery,

omentum, and exterior surface of stomach, and small and large intestines, engorged with black blood. The mucous membrane of the stomach presented an appearance, resembling that of chronic inflammation. The exterior of the large and small intestines was of a purplish color. The mucous membrane did not appear to the naked eye to be altered in structure. Glands of Peyer, enlarged and distinct; some of them were several inches in length. The glands of Peyer, however, did not present the appearance of active inflammation, as in typhoid fever. They were even paler than usual. The solitary glands did not attract attention. The lymphatics of the mesentery were much enlarged.

CASE XXXVI.—This case is recorded, not as one of remittent malarial fever, but for the purpose of illustrating the pathological changes of the spleen in malarial fever.

Native of South Carolina: age 37 years; height 6 feet 2 inches; weight 200 lbs.; large chest, full, round limbs. Has been living on the river, several miles below the city, in a miasmatic situation. Has suffered for some time with œdema of the extremities, and difficulty of breathing, and great exhaustion upon the least exertion. Complexion sallow, bilious; respiration 34 to minute, laborious—can be heard at a considerable distance; circulation in the extremities very feeble; pulse can scarcely be felt; temperature of extremities below the normal standard. Auscultation reveals a labored, rapid, and strong action of the heart; the sounds are tumultuous and close to each other; the impulse of the heart against the walls of the chest, and the point at which it strikes is much below the usual point; no abnormal sounds could be heard in the large blood-vessels; dulness upon percussion over the region of the heart.

We conclude from this examination, that the heart of this patient is greatly enlarged.

Complexion sallow, anæmic; conjunctiva yellow; tongue clean and pale.

This patient was treated for hypertrophy of the heart, torpor of the liver, and anæmia, with apparent benefit, from the time that he entered the hospital, August 19th, until August 29th, when he was taken suddenly at night, upon his bed, with oppression of breathing, followed in the course of half an hour by profound stupor, accompanied by stertorous breathing. He died in nine hours after the supervention of coma.

The day previous to the fatal issue, he had been walking about the hospital grounds, and said that he was decidedly better. During the whole time that he has been an inmate of the hospital, has appeared dull, stupid, and indisposed to hold a conversation with any one, and has passed most of his time in sleep.

Bowels generally torpid, and when they were neglected for several days, the difficulty of breathing increased, and his lower extremities commenced to swell.

(8) AUTOPSY SIX HOURS AFTER DEATH.

Exterior.—Trunk and limbs round and plump. A close examination showed that this fulness was due to serous infiltration. On making the first incisions through the skin and superficial facia, serum mixed with blood flowed freely.

Head.—When the skull cap was removed, a large quantity of blody serum escaped. Dura-mater presented the usual appearance. A fluctuation of a large quantity of fluid could be felt between the dura-mater and the substance of the brain, and when an incision was made through the dura-mater, a considerable quantity of serum escaped. A considerable quantity of serum was also effused between the arachnoid membrane and pia-mater. The arachnoid membrane presented a decidedly opalescent (pearl-colored) appearance. Lateral ventricles of brain contained an unusual amount of serous fluid. Brain much softer than usual. This could not have been the result of changes after death, for the time (6 hours) has been too short.

Chest.—Lungs congested with blood.

Heart.—Pericardium adherent to the sternum for several inches, and distended with golden-colored serum. The heart appeared to the eye, when the pericardium was opened, to be as large as the heart of a bullock. All the cavities of the heart were dilated, and the walls thickened. The dilation and thickening were greatest in the cavity and walls of the left ventricle. In the right auricle and ventricle, there was a large, elongated, light yellow clot, adherent at one extremity to the columnæ carneæ of the ventricle, and chordæ tendineæ of the tricuspid valve. In the left ventricle, there was a similar light yellow clot, attached at one extremity to the columnæ carneæ, and chordæ tendineæ and mitral valves, and extended full eight inches up the aorta. That portion of the clot which extended into the aorta, was divided into two flattened cylindrical portions, fimbriated at each extremity, as if they had been whipped about for a long time in the current of the blood. The clots in both cavities of the heart resembled, in all respects, fibrin from which the red blood corpuscles had been carefully washed, and were, without doubt, formed previously to death. Weight of heart, grs. 10,500—equals ozs. 24—equals lb. 1, ozs. 8.

Abdominal Cavity. Liver.—Color peculiar, and difficult to describe: mottled lilac and brownish yellow. Upon near inspection of the lobules, they presented the color and appearance of cirrhosis. The structure of the liver was firm, and cut like soft cartilage. The liver contained such a large amount of

fibrous tissue, that after vigorous pounding of slices in a mortar for one hour, they still retained, in a great measure, their consistency. Microscopical examination showed that this tough, resisting substance was cellular tissue. This liver, then, was in a cirrhosed condition. Under the microscope, the cells of the liver appeared paler and flatter than usual. The blood-vessels of the liver were filled with blood, which ran in considerable quantities from the cut surface into the dish. This blood readily absorbed oxygen, and changed to an arterial color. Under the microscope, the blood-corpuscles presented the usual appearance. They appeared to be diminished in number. The structures of the liver were infiltrated with animal starch and cellulose. After thin slices had been pounded in a mortar, and carefully washed under a strong stream of water, apparently for a sufficient length of time to remove all the animal starch, and then treated with sulphuric acid, or with liquor potassæ, and then treated with tincture of iodine, the large body of it was turned to a blue and purple color, like the cellulose of wood.

As far as the examination extended, the cellulose appeared to enter as a constituent of the cellular tissue of the cirrhosed liver. When tested for grape-sugar, 24 hours after death, no evidence was obtained of its existence. Weight of liver, grs. 30,396—equals ozs. 69½—equals lbs. 4, ozs. 5½. The fibrous tissue of the gall bladder was infiltrated with serum. The gall-bladder contained f3 ij. of thin bile, presenting the color of tincture of iodine, when seen in mass, and a gamboge yellow in thin layers.

Spleen—Enlarged and indurated; color of the exterior purplish red. When pressed in the hand, feels dense and firm. When cut or torn, the color and structure resembles that of a healthy spleen, in all respects, except that it has a much larger quantity of fibrous tissue. The pulp of the spleen absorbed oxygen readily when exposed to the atmosphere, and changes to a bright scarlet arterial color. The pulp of the spleen presented nothing peculiar under the microscope. Did not discover those black flakes and granules which were so abundant in the spleen of the patient previously described (Case xxxv). The spleen contained, like the liver, animal starch and cellulose. When the fibrous tissue was washed, and treated in a manner similar to that of the liver, it gave the same reaction, with tincture of iodine. Weight of spleen, grs. 13,343—equal ozs. 30½—equal lb. 1, ozs. 14½. Kidneys unusually small. Weight of both kidneys, grs. 3937—equal ozs. 9.

Alimentary Canal.—Stomach of enormous size: it appeared to be capable of containing two gallons. The small quantity of food which it contained was colored yellow by the bile. Mucous membrane presented a healthy appearance. Small and large intestines appeared healthy.

Passing over, for the present, the discussion of the character of the disease, and immediate cause of death, and many other points of interest, we will confine our attention to the pathological changes of the spleen.

A companion states, that this man resided two years ago on the Ogeechee river, in a low, miasmatic situation, and was very ill with fever during the summer season. He is unable to describe the exact nature of the fever.

From the situation, it is probable that the disease was malarial fever, and it is probable that the pathological alterations of the spleen were due to the action of the malarial poison during this attack of fever. If it was malarial fever, the spleen during the active stages was engorged with blood, softened, and the trabeculæ in many places ruptured. When the action of the poison ceased, the serum of the extravasated blood was removed, and the ruptured trabeculæ repaired, and numerous bands of fibrous tissue formed throughout its substance. These changes of spleen during convalescence from malarial fever, were plainly demonstrated in Cases xxxiii. and xxxv. Finally, the colored corpuscles of the extravasated blood were disintegrated and removed.

CASE XXXVI.—Irishman: pastry cook and baker—age 44: weight 150 lbs.; height 5 feet 9 inches; grey hair, blue eyes—has an old, feeble, decrepid look. Has followed the occupation of pastry cook and baker for thirty years, and during this time has worked the greater part of the night, and slept during the day. In order to keep up his strength, has used ardent spirits freely. The loss of sleep, combined with intemperate habits, have completely broken down his constitution, and he looks and talks and moves like an old man, 60 or 70 years of age. Eight months ago, had a stroke of paralysis which affected his tongue, right arm and lower extremities. Since this, he walks with some difficulty, and has but little use of the right arm. The temperature of the right paralyzed arm is generally from one to three degrees below that of the left.

The following observation was taken on the 7th of July:—Temperature of atmosphere, 82° 5 F.; temp. of hand, (paralyzed,) 96° 5 F; temp. of hand, (sound,) 99° F.; temp. under tongue, 100° 25 F.

Under the action of strychnia and tonics, his condition was greatly improved, and he left the hospital on the 20th of September.

He resumed, in a short time, his habits of intemperance, and often lay drunk all night on the commons and in the Park. He was taken up as a vagrant, and placed in confinement by the police. It was soon discovered that he was suffering with remittent fever.

Entered the hospital October 8th, in an exceedingly feeble condition, and died in the course of 24 hours.

(9.) AUTOPSY FOUR HOURS AFTER DEATH.

Exterior.—Not much reduced in flesh. His constitution, enfeebled by his occupation and intemperate habits, did not long withstand the action of malarial fever.

Head.—Dura-mater normal. f ℥j. of clear serous fluid escaped from the space between the dura-mater and arachnoid membrane. Blood vessels of brain did not appear to be more congested with blood than usual.

Chest.—Lungs normal. Heart normal in size. The auricles showed incipient fatty degeneration. Weight of heart, grains 4812—equal ozs. 11.

Abdominal Cavity. Liver, upon the exterior, of a dark slate color. The cut surface presented a bronze and olive color. The cells of the liver contained more oil globules than usual. With this exception, they presented a normal appearance. The blood of the liver did not change to the arterial hue when exposed to the atmosphere. The liver contained animal starch, but no grape sugar: it was set aside, and at the end of 15 hours, again carefully tested for animal starch and hepatic sugar. The result was the same—animal starch in apparent abundance, but no grape sugar. The cellular tissue of the blood-vessels of the liver appeared to be infiltrated by animal starch. Weight of the liver, grains 29,312—equal ozs. 67—equal lbs. 4, ozs. 3.

Spleen.—Of a dark slate color, enlarged and softened; when pressed between the fingers, the structures appear to give way. Pulp of spleen of a dark purplish brown and reddish brown color. After exposure for 20 hours to the atmosphere, the pulp of the spleen did not alter its reddish and purplish brown color. The spleen contained animal starch in considerable abundance, both in the pulp and also in the meshes of the fibrous tissue of the trabeculæ and blood-vessels. Weight of spleen, grs. 8093—equal ozs. 18½—equal lb. 1, ozs. 2½.

Kidneys—Normal. Weight, grs. 5687—equals ozs. 13.

Alimentary Canal. Stomach.—Mucous membrane presented the usual healthy appearance.

Small Intestines.—Mucous membrane appeared to be healthy. Glands of Peyer, large and distinct, but pale, and without any marks of congestion or inflammation. Several of these glands were three inches in length. The solitary glands, especially in the region of the ileo-cæcal valve, were enlarged and prominent. They were about the size of millet seed, and of a reddish brown color.

(To be continued.)

ARTICLE XXVI.

Cases of Disease of the Mucous Membrane. By TILMAN DOUGLASS, M. D., of Alexander, Ga.

CASE I.—Mr. A. R. Moore, aged 45; stout, well formed, of fair complexion, light hair—a farmer, of excellent character: was attacked, violently, with pneumonia, the 9th of March, 1844. He had fever the preceding fall, and colds and general ill health during the winter. I relied on tartar-emetic, quinine and blisters, stimulating expectorants, &c., under the use of which he was convalescent in a few days.

Some three months after this, Mr. Moore was able to ride about his farm, his usual health nearly restored—he came to see me on account of a small tumor, the size of a cow-pea, on the inside of the right angle of the lower lip, which had enlarged and become very painful, within a day or two. I declined to do any thing for it, and advised him to visit Augusta; which he promised to do, but deferred it from time to time, until he thought the tumor ceased to enlarge. Although it still annoyed him, and sometimes excited his fears, he had very little done for it, until the 13th of April, 1846, just two years and one month after the first attack, when I was called to see him in another attack of pneumonia. The cancer, and other symptoms of bad health, had, by this time, so worn him down, that scarcely any hope of his recovery was indulged. None but the mildest and most supporting treatment could be resorted to. But on the 30th of the same month he was discharged apparently cured.

The novelty in this case was, that the very day the pain was felt in the side, and other symptoms of pneumonia were developed, the cancer began to heal, and in a few days the ulcer in the lip was entirely covered over by new cuticle. Nothing could be seen of it except a small excavated cicatrix.

How much he and his friends rejoiced at the supposed happy termination of pneumonia and cancer may be well imagined. But how changed the scene, when in a few days, so soon as he was able to ride, Mr. Moore visited me again on account of the same sore! It had broken out suddenly—was swollen, red, spreading, and intensely painful; the new tender cuticle destroy-

ed, it was *an open angry ulcer*. The same motives which caused me to decline to touch the cancer, two years before, of course urged me to the same course now.

After suffering all the horrors of this most awful malady, for several months, under the cruel tortures inflicted by the officious ignorance, usual in such cases, death kindly came to his relief.

CASE II.—Mrs. S. G., aged 22; light hair, fair skin, blue eyes, weighing about 150, of fine form, and general good health and spirits—the only child of Mr. Moore.

Before proceeding to the details of this case, it may be best to state that Mr. G., the husband of this lady, a fine healthy young lawyer, had his knee hurt in the spring of 1857, while driving an unruly horse in his buggy: a very bad ulcer formed in the wounded part, and subsequently not less than twenty almost literally covered the leg, down to the ankle. As soon as one would heal, leaving a deep, dark cicatrix, others would appear near by.

The point of interest in this case is, that Mrs. G. had ulcers of the same character, on her leg, last fall and winter, which healed about the time of her confinement. Her child was born the 12th of February of this year, and she had a severe attack of dysentery, with discharges of bloody mucus, tormina and tenesmus, on the 14th. Cream of tartar and some mild diuretics relieved her very promptly, and she was soon up.

In a few days I was called again to see her, when I found the tongue, mouth and throat red and intensely sore; deglutition very difficult. The disease was confined to the mucous membrane—would spread over a considerable surface in a short time, and subside as quickly. Fever, which abated in the morning and returned at three in the afternoon, caused an increase of the burning pain. The next day, constant nausea, with occasional colic and great prostration, fits of fainting, and lancinating pains through the abdomen, made it but too evident that the whole canal was involved. Quinine soon arrested the fever. Solution of creasote as a gargle, and a very weak solution of creasote into the stomach, followed by iodide of potassium, after the fever was arrested, measurably restored her. But then the returning appetite was tempted by a fine perch, which aggravated all the symptoms, and in two days more severe pain was

found passing down the rectum, followed by discharges of bloody mucus, affording temporary relief. Two days later, the anus, and the vagina and urethra, were invaded by the swollen, painful, burning disease. Emulsion of spirits turpentine and gum-arabic was tried, but thought to be too exciting. She has been taking balsam copaiba with gum arabic, for some time, with decided advantage. Since the fever has given way, syrup iodide of iron has improved her strength and appetite.

This lady is now, 6th of July, considered well.

CASE III.—Mrs. M. C., aged 25: slender frame, tolerably tall, sandy hair, fair skin, relaxed fibre and very little stamina; about five years married; mother of two children. Her husband, a man of feeble constitution, has a troublesome sore on his leg. His lady had ulcers on her leg. She became pregnant the first of last year, lived in a sickly neighborhood, and had two or three attacks of intermittent fever—the last, in September. The bowels were very obstinately constipated, with tenesmus and intolerable tormina. Was relieved by quinine, and an emulsion of castor oil, balsam copaiba and gum-arabic, in small doses. She was confined the 13th of December, just two months after the attack in September. On the second day after the birth of her child, dysentery, of the most violent grade, set in. The tenesmus and tormina were as severe as in September; and in addition to that, the stomach was very irritable, and she passed bloody mucus from the bowels. The stomach, not tolerating the oil emulsion, she was relieved with small doses of cream of tartar. This was the 18th January, one month and five days after the birth of her child.

I heard nothing more of her until the 23rd of April, three months from the attack of dysentery, when I was called to see her on account of sore mouth. She said her mouth had been sore almost ever since I saw her before. The soreness did not confine itself to the mucous membrane, as it did in the case of Mrs. G., but penetrated and formed ulcers which secreted pus. They would heal and then come in other places. For several weeks she declined in flesh and strength, until she became so prostrate as to keep her bed constantly. The stomach was irritable, and the bowels either constipated or excessively loose.

The treatment consisted of an emulsion of balsam copaiba

with gum-arabic, quinine, iodide of potassium. Washes of various kinds were tried, but diluted tinct. mur. ferri. seemed to afford her most comfort. The irritable stomach was relieved by a very weak solution of creasote. Animal broths were prescribed as a nourishment. Her strength so improved that on the 26th day of May she was carried to her mother's, out of my neighborhood.

All treatment was abandoned, except laudanum given by an old lady, and all rules of dieting laid aside, until the 5th June, nine days from her removal; when diarrhœa set in, and my friend, Dr. David Perkins, was called, who called me in consultation the next day.

We found her prostrated, so as not to be able to raise her head, or even to be raised, without fainting; ghastly countenance, and passing watery discharges constantly from the bowels—with cough and other evidences of the lungs having been invaded by the same disease. The ulcers had left the mouth. The only sore which had remained for any length of time, on the tip of the tongue, had now entirely healed. She lingered on, almost motionless and speechless, till the 30th of June, when she expired.

Diphtheritic Affections.

A late No. of the *Archives Générales de Méd.* contains an interesting paper by M. Isambert on diphtheritic affections and on the malignant angina in Paris in 1855. The following are the author's conclusions:—

Diphtheritic affections sometimes appear sporadically; they often seem to be endemic, and also epidemic and contagious. Epidemic influences are often the principal causes. Contagion does, however, really exist, as several medical men have been infected.

Shall we agree with M. Bretonneau, and believe that diphtheritis is not propagated by the air, but is always the result of a kind of inoculation or actual contact of the morbid secretion with a mucous membrane? The author thinks this opinion too exclusive, as also does M. Trousseau.

Diphtheritic affections are generally preceded by initiatory symptoms in the form of bronchitis, with more or less fever. The general aspect of these affections, at an advanced period, is

of the adynamic kind, except when there is much agitation and convulsive effort brought on by croupy exudation.

These ailments are of a decidedly specific nature; the more they are studied, the more we remain convinced that inflammation is of secondary importance, and is sometimes completely absent.

Relapses are not rare in diphtheritis; this complaint therein differs from other specific diseases; as variola, rubeola, and scarlatina.

The general treatment should be directed against the inflammation, if it be present, which circumstance is, however, rare. Abstraction of blood should be used cautiously in an affection which so soon assumes a typhoid character. Cutaneous counter-irritation should be completely avoided, as the irritated regions soon become centres of new diphtheritic manifestations. Emetics are extremely valuable; and alteratives, mercury, alkaline carbonates, and cholorate of potash, are often useful.

Local treatment is very important, and consists of an energetic modification of the affected surfaces. Calomel, alum, hydrochloric acid, and especially solutions of nitrate of silver, are always indicated.

The patient should, finally, be well sustained, besides taking medicines, as there is a tendency to a typhoid state in this kind of affection. He should also be given tonics, as bark, coffee, and wine; the latter tonic is especially advisable during convalescence after severe diphtheritis.—*American Jour. of Med. Sciences.*

Epidemic Diphtheritic Angina at Lima. By M. Odriozola.

About the close of the month of July, 1851, an epidemic grippe appeared, and suddenly attacked the whole population of Lima, and was fatal, particularly to old people, in consequence of grave pneumonias which were developed in its course. The first cases were observed from the middle to the twenty-fourth of July, and extended rapidly and simultaneously to all the inhabitants of this city, so that, during the height of the epidemic, the streets were deserted for ten or fifteen days. Since that period, we have suffered two other epidemics, one ever memorable on account of the great ravages it caused—the yellow fever, the first invasion of which occurred in the summer of the year 1852, in a benign form, to become grave and fatal in the years '53 and '54; and the diphtheritic angina, which, though not so general or fatal as the preceding, did not fail to secure some victims, notwithstanding the small number of persons attacked.

To this last, which still prevails, we devote a few lines.

If we may rely upon the few and incomplete records left by

our predecessors, relative to the epidemics which have afflicted the inhabitants of Lima, the diphtheritic angina appeared here for the first time in the year 1821, and then, as now, merited the epithet epidemic, because it appeared simultaneously in a large number of individuals. Since that date, we have no notice, nor does there exist any document to show its reappearance until the year 1850, when it attacked, sporadically, a small number of persons, to whom it proved fatal. Four years passed, and in 1855, it extirminated almost an entire family, without extending beyond the house in which it caused such marked ravages. And, in the month of April last, 1858, it appeared again, and from that time to the present, there is scarcely a practitioner who has not had at least two or three cases under his care. It is worthy of remark that our estimable fellow-member, Dr. Josè J. Bravo, prognosticated the invasion of this diseass in February last, on the ground that it had appeared a year and a half ago epidemically at Piura, passed to Trujillo, and thence to Huacho, places where it had some victims, and that it was rational to expect so fearful a guest, which, from its origin, was propagated from north towards the south.

As the diphtheritic or pseudo-membranous angina now prevailing does not differ in its symptoms or anatomical characters from that described by authors under the same name, or from that which we have mentioned as described by Dr. Valdés, we believe ourselves to be excused from entering into details, contenting ourselves, for the present, with merely indicating the class of society in which the diphtheritic angina appeared more especially, the proximate number of sufferers, and the treatment resorted to in preference by a majority of the profession.

It was natural to expect that, once developed amongst us, this disease would find its largest number of victims in the needy class as happens in certain European populations, where it prevails with some frequency; but the contrary has happened, for it has attacked, in preference, persons who enjoy all possible comforts, and in so marked a manner that, in the hospital for men, there has not been a single case, and in that of Santa Ana, for women, there has been only two. The black race, up to this time, has been as resistant to this angina as it was to the yellow fever. It is to be regretted that no data on this point can be obtained from the history of the epidemic of 1821, above mentioned. For this and various other reasons, we have characterized the description by Dr. Valdés as incomplete.

We should have been pleased to present an exact statement of the number attacked by the angina; but it may be readily perceived that such a labor is impracticable, inasmuch as it has not yet ceased, and because it has not occurred in the hospitals, where it might be accurately made.

Notwithstanding the many impediments we have encountered, we have succeeded in obtaining, from a majority of the most respectable practitioners, the number of cases they have treated, with the following results:—

Of 70 cases of diphtheritic angina, 49 were females and 21 males; 55 were cured and 15 died. Of the 15 deaths, only two were adults, the rest between 3 and 12 years of age, much the largest number being between 3 and 5 years old. Of the 55 cured, only 5 were under, and the remaining 50 exceeded 12 years of age. The whole 70 patients belonged to the white race. The total number attacked up to this time is between 80 and 90.

The majority of physicians have decided in favor of cauterizations with pure chlorohydric acid, practised two or three times a day, according to the gravity of the case, and emetics of tartar emetic or ipecacuanha, alternately employed. It is not our object, nor is it possible, to decide upon the degree of curative efficacy in diphtheritis which the cauterizations may possess; but we ingenuously confess that this treatment, employed actively from the beginning, has yielded happy results in the greater number of cases, and it has been inefficacious in the most of these cases in which it has been applied two or three days after the developement of the disease.

We hope that time and experience will determine the true value of this remedy, which is considered impotent by some of our practitioners. We have employed emetics exclusively for their mechanical effects on the pharynx, favoring the expulsion of the false membranes; but it may be said, in passing, that their abuse in children produces more hurt than advantage, and they do not tolerate them as well as adults, in whom we have observed no accident, although fear caused by the gravity of the disease, may have induced us, perhaps, to carry them further than we ought. As purely auxiliary, we have used opiate gargles, and the liquor of Labarraque. We know that some have employed different therapeutic agents in this angina, such as bark, internally, baths, gargles, and cataplasms of a concentrated decoction of the same, sulphate of quinine, cauterizations with a concentrated solution of nitrate of silver, or sulphate of copper, &c., &c.; but we are entirely ignorant of the opinion which should be formed as to their utility.—[*Gaceta Medica de Lima. Organo oficial de la Sociedad de Medicine*, and *Ib.*

Diphtheria, or Diphtherite. By David Thompson, Esq., of Lancaston.

About three years since, this neighborhood was visited by an epidemic of this rare disease. The first cases occurred in the

town, and no others then appeared for several months, when it again broke out in the district north of this place, where it prevailed for several months, whilst the south side was comparatively free from it. From the north, it gradually spread, until the whole line of country had been visited by it. There appeared to be no difference in the geological nature of the country, the level, or the aspect, in increasing the severity or granting an immunity from the disease. The premonitory symptoms varied somewhat. A few retired to rest comparatively well, and awoke in the morning with the throat sore, and covered with white deposit. In the majority it was preceded by all the ordinary symptoms of pyrexia, of which headache was one of the most severe, followed in the course of a day or two by the usual throat symptoms. An extreme feeling of depression, not to be accounted for, by the amount of mischief in the throat, was a characteristic symptom in each case. An external examination of the throat showed the tonsil generally to be swollen, hard, and tender to the touch; while sometimes the parotid gland participated in the swelling. Internally the tonsil was swollen, and either covered with the diphtheritic deposit, which frequently extended over the pharynx, and sometimes into the nares and palate, or else it would be scooped out into an ulcer, with raised violet-coloured edges; the floor exhibiting a dark ash-coloured slough. In some instances there would be no deposit or ulceration at first, but simply the tonsil painful and enlarged. These cases generally changed for a state of ulceration, which began in several distinct spots, and gradually spread over the whole tonsil. In the most severe examples, the tonsils sometimes sloughed *en masse*. I saw one instance in which this occurred, in an early stage of the disease; and where now (two years since it occurred) a cavity remains, capable of containing a pigeon's egg, across the surface of which extends a small band of mucous membrane, which did not slough at the same time, and gives great inconvenience, from retaining the food impacted in the hollow during deglutition.

I have seen no case in which I could detect the extension of the disease into the œsophagus; but in many it has entered into the air-passages, this being the most frequent and most fatal complication. Of 485 cases that came under my own observation, the instances in which the air-passages became involved in the disease amounted to 15; and of this number 11 died, the greater number within a few hours after the first symptoms of croupy breathing began. The false membrane formed on the tonsil and pharynx extended into the larynx, trachea, and frequently far into the minute divisions of the bronchi. In one instance, a girl aged 17 expectorated, within twelve hours after the first symptoms of croup made their appearance, a complete

cast of the larynx, trachea, and bronchial tubes, extending to the fifth division of the bronchi; in a few hours afterwards, a fresh membrane formed, and she died from suffocation.

In many instances, I saw numbers of minute casts expectorated from the lungs, whilst at the same time a stethoscopic examination gave all the symptoms of capillary bronchitis. A gentleman aged 46, died from this condition of the lungs. His throat was first affected. After a few days, the breathing became impeded, with all the ordinary symptoms of capillary bronchitis in the first stage, the throat continuing to improve. He gradually sank, constantly expectorating casts of the small tubes, precisely similar to the deposit in the trachea.

I kept accurate notes of 125 of the most severe cases, including all the deaths.

	Cases.	Deaths.
Males - - - - - -	55	9
Females - - - - - -	70	4
Totals	125	13

The deaths, with two exceptions, were all below fifteen years of age; and, with two exceptions, were all from affections of the air-passages. In the two who died from other causes than affections of the air-passages, death occurred in one from the sloughing of a blister, applied for three hours to the upper part of the sternum; and in the other from extreme debility remaining after recovery from croup. There was a very remarkable tendency for blistered surfaces to take on unhealthy action; and I frequently saw the irritated surface covered with a deposit similar to that on the throat.

A strong similarity appears to exist between this disease and scarlet fever, so strong, as almost to lead one to hazard the opinion that it may be a modification of that disease. The following are the reasons for considering so:—

1. Diphtherite prevailed in this neighborhood as a contagious (?) epidemic at the same time as well-marked scarlet fever, and chiefly among children.

2. In the same house, the father and mother had well-marked scarlet fever severely without any ulceration or deposit on the throat; while the three children had all the marked symptoms of diphtherite, without much feverishness and *no rash*, though attended by the same premonitory symptoms, the cases occurring at the same time.

3. In many instances, cases of apparently pure diphtherite were, after some days, attended by a rash, that seldom remained more than a few hours.

4. The disease in most instances commenced with all the symptoms of fever, its duration being similar to that of scarlet.

5. In cases of apparently pure scarlet fever, the throat became, after a few days, covered with diphtheritic deposit.

6. The sequelæ of the two diseases nearly resembled each other; albuminous urine, with casts, being present in eight cases of diphtherite, and anasarca proving fatal from convulsions in one.

It would occupy too much space to give more than a mere outline of the subject; but future and more extended experience than mine may prove whether there is any connection between the two diseases. Deafness was a not unfrequent sequela of diphtherite and temporary paralysis; in all instances these were recovered from. I have only known one case of diphtheritic ophthalmia to have occurred in the neighborhood. In that instance, the deposit extended over the lower half of the conjunctiva.

The treatment most successful was the early and thorough application of lunar caustic to the throat, together with the use of a stimulating gargle of nitrate of potass. and capsicum, or solution of chlorinated soda (Beaufoo's) diluted. When there was much feverishness in the early stage, an emetic appeared sometimes to benefit. Mild but continued counter-irritation over the upper part of the chest appeared of great service. General treatment, beyond keeping the secretions regular, was of little use, and frequently injurious. Depletion of any sort did an infinite deal of harm. Stimulants were often required in an early stage. The chances of recovery when croup set in severely were but small. The only chance seemed to be, in the rapid exhibition of small doses of calomel and ipecacuanha, with stimulants. Under this treatment, four out of fifteen recovered who were affected with this complication. Tracheotomy was tried, but of no service, as the false membrane extended beyond the trachea.

In the number of the *Lancet* for, I think, the year 1832, there is a most characteristic case described by Dr. Alison, of Edinburgh, as having occurred in the Royal Infirmary, and which terminated, as the fatal cases here did, in croup.

A careful microscopic examination of the white deposit showed nothing different from the usual appearances of exuded lymph. *British Med. Journal,* and *Ib.*

On the lately prevailing Diphtheritic Affection. By Dr. William Camps.

This affliction has been variously designated—as croup, croupy diseases of the throat, malignant sore throat or cynanche maligna, diphtheritis or diphthérite, throat affection, prevalent sore throat, &c. Under one or other of these terms, there could now no longer be any doubt that a disease lately prevailed, and

did still exist, with more or less intensity, in various parts of the United Kingdom, including the metropolis. The public health authorities had, in their periodical documents, of late solicited information respecting it, under the term diphtheria. Dr. Camps states that his attention was directed thereto, in the first instance, by noticing in one of the quarterly returns of the Registrar-General an unusually large number of deaths from croup, as having occurred in a rural district, with the population and locality of which he was tolerably well acquainted.

It was well known that a form of pharyngeal inflammation had been investigated and described some years ago by M. Bretonneau, of Tours, and that to this disease he gave the name of *diphthérite.* It was probably from the analogy observed between the disease lately prevailing here and that described by M. Bretonneau, that the former was now commonly spoken of as diphthérite, diphtheritis, diphtheria, or diphtheritic disease. M. Bretonneau and some other French authorities appeared to have regarded it as almost, if not absolutely, identical with the ordinary inflammatory croup of this country; and Dr. Watson in his lecture on croup, appeared to regard Dr. West as holding the opinion that diphthérite is a variety of croup—an opinion in which Dr. Camps did not concur. Whether in this country or in France, this disease had heretofore appeared rather as an epidemic than as a sporadic affection; and the author was of opinion that many of the cases of throat disease which proved so fatal not long since at Boulogne, might have been cases of diphthérite. Here it assumed quite an epidemic character; and in all the severer and fatal instances of the disease in this country that had come to the author's knowledge, such cases had occurred in tolerably rapid succession as to time, and in tolerably close proximity as to place. He hesitated to commit himself without reserve to the question of its contagiousness, although he believed that practitioners in France entertained that opinion.

The type of the disease in its severest forms, he considered to be essentially asthenic or adynamic; and, therefore, attended with more or less languor, depression, and diminution or impairment of vitality, thus indicating most clearly the appropriate mode of treatment. Of late, in many of the metropolitan dispensaries and hospitals, stomatitis had been very prevalent; and in the judgement of the author, there existed between stomatitis and the diphtheritic affection, now under consideration, a very close analogy or resemblance. He regarded the former as the standing off into a milder form of the latter, yet both as the result of the same morbific general cause; so that the difference between the two should be considered as one of degree, rather than of kind. The tendency to the production of plastic, pseudo-membranous exudations, as observed in these

diseases, was one mode of denoting the existence of an adynamic or low form of inflammation; and the correct appreciation of this condition was of the highest importance in the treatment.

A description of the disease, as detailed by M. Bretonneau, was then briefly adverted to by Dr. Camps, who then stated that he was indebted to Dr. H. W. Fuller, of St. George's Hospital, for having drawn his attention to a record of cases of diphtheritis that had occurred in 1849 at Haverfordwest, in the practice of Mr. Brown, of that place, and which that gentleman had communicated to the "Medical Times and Gazette." Mr. Brown in that year had had no fewer than two hundred cases, forty of which had proved fatal; and in some of these death had ensued in a few hours from the seizure, others lingered on for some days. In its course, Mr. Brown said that some of the little sufferers appeared to get through it easily; while others lingered for weeks with slight but deceitful symptoms. The treatment adopted by Mr. Brown was referred to by the author at some length. He affirms that he did not lose a patient in whom he succeeded in establishing ptyalism. That gentleman advocated the topical application of solution of nitrate of silver; in regard to constitutional treatment, he depended upon calomel in combination with ipecacuanha, in doses varying from half a grain of each, every four or eight hours. He found, moreover, emetics of great service in the first stage of the disease; they then always relieved the distress in breathing, carrying away large quantities of mucus. The only cases that proved fatal under his care were those in whom the pharynx and the larynx were simultaneously affected. The post-mortem examination of all the fatal cases that had come within the author's knowledge, showed the pharynx, tonsils, larynx, trachea, and upper part of the bronchi, to be more or less coated with plastic, pseudo-membranous exudation. Reference was made by the author to the occurrence of the disease in various parts of the country; namely, in Essex, Norfolk, Lincolnshire, Staffordshire, Worcestershire, Lancashire, Devonshire, and in the metropolis.

With reference to the cause or causes of this and similar diseases assuming an epidemic character, it was usual to regard such as the results of some specific epidemic influence or agency, operating upon the human system through the blood. This explanation, or attempted explanation, the author stated, was by no means satisfactory to his own mind, however much so it might be to the minds of others.

From all the facts or particulars which Dr. Camps had been able to collect respecting this disease, he was disposed to draw the following conclusions:—

1. A disease very analogous to, if not identical with, that described by M. Bretonneau as diphthérite, had existed in this

country, and had prevailed with more or less intensity during the last few years.

2. This disease was mainly, if not essentially, of an asthenic, adynamic type; and characterized in the severer cases by the formation of plastic pseudo-membranous exudations.

3. This disease was primarily pharyngeal as to its seat, and not laryngeal, except secondarily, and by complication; thus differing anatomically from croup.

4. Its difference from stomatitis was a difference of degree or intensity, rather than a difference of kind; and that one chief point of difference from the malignant sore throat, consequent upon scarlatina, consisted in the tendency to the formation of plastic pseudo-membranous exudations.

5. In many instances this disease possessed the characters of an epidemic disease.

6. Its low adynamic type clearly indicated the mode of treatment to be adopted; which in the author's judgement, should be both topical and general. The topical consisting of free applications of a strong solution of nitrate of silver to the parts affected, composed of from one scruple to two drachms of the nitrate to one ounce of distilled water; or similar applications of chlorine or hydrochloric acid; the general treatment comprising the repeated administration of chlorate of potassa, with chlorine, or a combination of cinchona bark, or its alkaloid salts with the mineral acids; and in the severer cases, calomel in repeated doses, so as to produce ptyalism. Emetics in the early stages of the disease have been given in some cases, and with good result. In addition, the vital powers of the system must be well sustained by liberal administration of wine, stout, beef-tea, and other invigoratihg means.—[*British Med. Journal.*

On some of the more Obscure Forms of Nervous Affections: their Pathology and Treatment. With an Introduction on the Physiology of Digestion and Assimilation, and the Generation and Distribution of Nerve Force. By Harry William Lobb, L. S. A. and M.R.C.S.E.

Mr. Lobb, in the first part of his work, advances opinions, both in physics and physiology, which are diametrically opposed to those ordinarily received. One or two examples will convey a notion of Mr. Lobb's matter and manner.

Adopting a system of molecular physics (which would seem to have scarcely any other foundation than ingenuity) he makes this the master-key with which to unlock several of the mysteries of physiolgy. He assumes that "the ultimate atoms of all matter are spheroids in a state of vibration" (p. 6); vibration

gives rise to certain definite currents; "currents in the spheroid produce rotation; rotation will continue the currents; they, therefore, contain within themselves the elements of their own existence" (p. 8); the currents are electrical currents, and as a consequence we have the conclusion that, as no change of any description can take place in matter without causing currents of electrical fluid, and as the combinations and disruptions which take place during an act of growth, and which occur through the agency of what is termed vital force, or as Mr. Lobb prefers to term it, cell force or cell electricity, are always accompanied by molecular changes, therefore, "Vital force is merely a modification of that remarkable fluid pervading all matter and space, always aiming at equilibrium and yet so easily disarranged" (p. 11).

Mr. Lobb's views will scarcely supersede the views of Mr. Groves and Dr. Carpenter, the former of whom has dealt most ably with the physical relations of electricity, and the latter with the physiological. (On the mutual Relations of the Vital and Physical forces, "Phil. Trans." 1850, Part II.)

Mr. Lobb advances a theory of the formation of chyle-cells. He states that the initial step in the formation of the cell is the vibratory movements of certain minute crystals of phosphate of lime. These crystals during vibration become coated with the proteine and oily compounds of the chyle forming molecules. "When many of these molecules are formed, they, upon approaching one another, become attached in a line like a small string of beads, vibration still continuing; when a certain number are thus joined, they double one upon another, forming a nucleus, to which minute atoms are continually added until a tolerable aggregation is the result; this is a mass of molecules. The external atoms now proceed to form a cell wall, which, in this period of its existence is completely invisible: but it consists of minute atoms, between which are still smaller interspaces, which admit of the passage of fluids," &c. (p. 31). A sad shortcoming of this theory is the absence of all proof of the process of formation here said to take place.

As another example of Mr. Lobb's mode of reasoning, the following may be quoted: "Carbonic acid gas is constantly, day and night, winter and summer, although in varying proportions according to circumstances, being excreted by the blood in the lungs; the repair of tissue surely does not require this immense waste of material. The most idle man—the fat unwieldy inhabitant of the Eastern harem, who is afraid to move lest she should lessen her value in the eyes of her lord by losing a portion of her obesity, eats largely. Merely to throw off this waste from the lungs? Surely not; there must be a cause, and it is this.

"The nutriment absorbed by the lacteals, converted into

albumen, fibrine, and blood cells, is conveyed into the most minute intensity of the organism by the capillaries; here the oxygen brought by the blood seizes upon some hydrocarbon with which to unite, giving rise to molecular change—to currents of electricity; these currents are collected by the nerves always accompanying the vessels, and serve to feed the nervous system; at the same time, some portion correlates into animal heat, &c. It is then to feed the nervous system that this tissue-change, beyond that really required for repair, is constantly going forward, and so much carbonic acid is excreted from the lungs. It is not, then, a wilful waste, this apparent carbon; on the contrary, life could not last without it—nervous energy would lessen, the extremities and skin would get cold—circulation would become sluggish, and death eventually ensue" (p. 82).

It is certainly, a somewhat novel view to regard the cabonic acid given off by the lungs as wasted material, seeing that that gas is commonly regarded as a deleterious product of the decay of some, and the metamorphosis of other tissues, and of the reduction of the carbon of the food, which reduction has especial reference to the maintenance of animal heat. No question of physiology has been more carefully and successfully investigated than that of the sources of the carbonic acid given off from the lungs, and its relationship to the amount and quality of food taken, and of the degree of metamorphosis going on in the different tissues of the body; but Mr. Lobb appears to ignore altogether the results of the researches on this question. Mr. Lobb, moreover, does not seem to be aware that the electrical conditions arising from changes going on in the intimate structures of the body, particularly in the nerves and muscles, have been made the subject of most successful experimental research by M. E. de Bois-Raymond and others, and that, in consequence, theories upon this subject which are not based upon experiment, are neither necessary nor admissible. When Mr. Lobb makes use of the expression "correlates into," *e. g.* "some portion (*i. e.* of the electricity) correlates into animal heat" (p. 83); he betrays a singular misapprehension of the signification of the term correlation.

In the second part of his work, Mr. Lobb treats of "certain affections of the nervous system, the symptoms of which are obscure, and which, if not alleviated, would develop themselves into organic degeneration, fatal disease, or insanity." He expresses the opinion that the affections of which he treats depend upon "partial paralysis of some portion of the sympathetic system of nerves, either of their centres or their peripheric terminations, thus upsetting the healthy process of digestion and assimilation in some portion of its extended course, causing functional derangements, nervous irritability, and frequently

sympathetic complication of the most important organs" (p. 124). He discusses the nervous affections which accompany certain morbid conditions of the urine, Bright's disease, and diabetes. He discusses, also, spermatorrhœa, stammering, hysteria, chorea, and epilepsy; diet and regimen, certain medicinal preparations, and the therapeutics of galvanism and electro-magnetism. He adds nothing new to our knowledge of the affections of which he treats, and his therapeutics are in great measurs derived from the peculiar views which he entertains on the physiology of digestion and assimilation.

That portion of Mr. Lobb's work which is devoted to spermatorrhœa would appear to be written rather for the public than the profession.—[*Ranking's Abstract.*

The Effect of Local Influences on Spasmodic Asthma. By Dr. Hyde Salter, Assistant Physician to Charing-cross Hospital.

The purport of this paper is to show that, in a very large proportion of cases of asthma in which it has been fairly tried, change of locality effects an instantaneous cure, which is permanent as long as the asthmatic continues his residence in the place that has cured him. The author remarks that, although the subject of his paper is a single method of cure of a single disease, yet that the efficacy and completeness of the cure, and the painfulness and intractability of the complaint, vindicated it from unimportance; and, indeed, that in so distressing and unmanageable a disease, any remedy that offered even a small percentage of cures might be considered the greatest possible boon. The paper is illustrated by nearly thirty original cases, and the points that the author considered to be established are as follows:

1. That residence in one locality will radically and permanently cure asthma resisting all treatment in another locality.
2. That the localities which are the most beneficial to the largest number of cases are large, populous, and smoky cities.
3. That this effect of locality depends, probably, on the air.
4. That the air that would be imagined to be the worst for the general health is, as a rule, the best for asthma; thus the worst parts of cities are the best, and conversely.
5. That this is not always the case, the very reverse being sometimes so—a city air not being tolerated, and an open, pure air effecting a cure.
6. That there is no end of the apparent caprice of asthma in this respect, the most varying and opposite airs unaccountably curing.
7. That, consequently, it is impossible to predict what will be the effect of any given air, but that probably the most opposite to that in which the asthma seems worst will cure.

8. That some of these differences, determining the presence or cure of asthma, appeared to be of the slightest possible kind, arbitrary, and inscrutable.

9. That the mere conditions of locality appear to be adequate to the production of asthma in a person whose disposition to it was never before suspected, and who probably never would have had it, had he not gone to such a locality.

10. That, consequently, probably many healthy persons who never have had asthma, and never may, would have been asthmatics if their lot had been cast in other localities.

11. That possibly there is no case of asthma that might not be cured if the right air could only be found.

12. That the disposition is not eradicated, but merely suspended, and immediately shows itself on a recurrence to the original injurious air.

13. That change of air, as change, is prejudicial.

14. That, from the caprice of asthma, the constancy of the result in any given case is often deranged.

In reference to the frequency with which London air is beneficial to asthma, the author remarked that he was in the habit of putting to country asthmatics the two questions—"Have you ever been in London? have you ever had asthma there?" and that, if an affirmative answer was given to the first question, a negative one was pretty sure to be given to the second. In his own experience he had found hardly any exception to this rule.—[*Lancet.*

On the Influence of some Surgical Affections upon Animal Heat. By M. Demarquay.

M. Demarquay observes that although many observations have been made upon the modifications of the temperature produced by internal diseases, with the exception of Hunter's upon inflammation, and some researches upon the effects of ligatures on large vessels, nothing has been done with respect to surgical affections. He treated upon the subject in his inaugural dissertations in 1847, and since then has continued to pay attention to it; and the present memoir is an account of some of the results of his observations.

The pyrexia following amputations and other operations is accompanied by an elevation of temperature proportioned to the amount of reaction; but when the case becomes complicated by other phenomena, as phlebitis or erysipelas, the temperature may undergo notable variations. Thus, in a case of amputation, of the thigh, followed by phlebitis and purulent affection, the thermometer has risen from 97° or 99° to 104° Fahr.; and although this increase may seem in itself but trifling, yet the

observations of Andral and others have noted but a few degrees of elevation only, even in the intensest fevers. If, however, the elevation of the general temperature is inconsiderable, that is not the case with respect to the local temperature. Thus, in phlegmon and erysipelas, comparing the condition of the afflicted parts with that of the healthy ones, it has been found that while the general temperature of the body may have undergone a notable increase, exceeding that of the neighboring parts by from 2° to 5° C. All serious wounds which produce febrile action induce an elevation of general and local temperature, but when the membrane covering the granulations has become well organized, the temperature is then found to be like that of the surrounding parts; so that ice applied under such circumstances would abstract normal, not morbid, caloric. Experimenting upon dogs, too, the author has observed that the application of ice leads to a considerable falling of the thermometer in the case of subcutaneous wounds. The same experiments showed that a wound that had undergone such diminution in its temperature, quickly recovered this, and went beyond it, the temperature of the wound thus undergoing a series of elevations and depressions, according to the quantity of ice employed, and its degree of fusion. It is evident that such a powerful modifier requires great reserve in its employment; and most of the Paris surgeons reasonably prefer in the case of great breach of surface, tepid irritations to these freezing applications. As to the temperature in aneurisms, MM. Demarquay and Monneret have on several occasions observed in arterioso-venous aneurisms of the lower extremity, an elevation of from 1° to 2½° C.; but they have never observed a similar difference in the case of such aneurism existing at the bend of the elbow. When in a limb, the subject of aneurism, the circulation has undergone no considerable disturbance, no important variation of the animal temperature is observable; but when complications, such as phlegmon, are present, an elevation of 2° may take place. After ligature of the femoral and humeral arteries, the author has found a diminution of temperature to take place, and the experiments upon animals which he had made with MM. Duméril and Lecointe demonstrate the accuracy of the assertion, that every ligature of an important artery, performed so as to avoid all injury to the veins and nerves, give rise to a diminution of the temperature of the limb beyond the ligature. *A priori*, a considerable modification in the temperature of a limb might be expected in limbs suffering from senial gangrene; and the author has been somewhat surprised to find only a difference of 1½° or 2° C. between the two limbs, except in one case, when the difference amounted to 5°.

The following are the conclusions of the memoir: 1. Purulent

infection and erysipelas give rise to an elevation of 2° to 3° C. 2. Circumscribed inflammations, as phlegmon or local erysipelas, give rise to an increase varying from 1° to 5°. Ice quickly gives rise to a temporary diminution, but the parts afterwards not only recover their former temperature, but exceed it. 3. A true aneurism, if the limb is healthy, give rise to no change of temperature, but arterioso-venous aneurism, and especially in the lower extremity, increases it by 1° to 2½° C. 4. Hunter and his school have examined into the effects of ligature of vessels on the temperature, but have arrived at contradictory results. From my observations it follows that ligature of the artery and the vein in arterioso-venous aneurism of the lower extremity, give rise to an elevation of temperature; while when the principal artery of a limb is alone tied, there is always a diminution of temperature. 5. In senile gangrene there is always a diminution of temperature of from 1° to 5° C. in the parts situated above the mortification.—[*Comtes Rendus.* and *Ranking's Abstract.*

On the Absorption of Medicinal Substances by the Large Intestine. By M. Briquet.

The object of M. Briquet's two memoirs is the study of the absorption of medicinal substances introduced into the large intestine by means of clysters. The following are the general conclusions he has arrived at:—

1. The fluid constituting the injection may easily reach as far as the cæcum, and consequently may be brought into contact with a very large extent of absorbing surface. 2. The mucous membrane and the fluids that bathe its surface do not exert any chemical action upon the substances so introduced into the large intestine, where all that is absorbed is that which was previously in a state of solution. 3. When a clyster of the soluble salts of quinine, in doses less than 15 grains, is administered, rather more than a third of the quantity so administered is eliminated, and has consequently been absorbed. 4. When large doses are administered, they are ill-supported, and only a fifth or a sixth of the quantity is absorbed. 5. In whatever dose the the quinine may have been given, it generally gives rise to cerebral symptoms only very slowly and to a slight degree. 6. Traces of elimination and consequently of absorption are only met with an hour after the administration of a clyster, and even then the elimination is incurable. 7. The duration of the elimination is usually short—two or three days at the utmost. 8. The greatest or less dilution, within certain limits, the more or less viscous nature of the liquid, or the addition of the salts of morphia to the cinchona alkaloids do not exert any sensible modification on the absorption.

9. Absorption takes place more readily in the young than in the adult; and is performed with difficulty in the aged of either sex. 10. The salts of quinine, administered in clysters in doses of less than 15 grains, exert the same effect as when given in moderate doses by the mouth, and may be very well substituted for these. 11. But this is not the case with large doses, which are never absorbed in sufficient quantities to produce energetic effects. 12. The large intestine will rarely tolerate a larger dose than 30 grains of the sulphate. 13. These conclusions more or less exactly apply to the various substances administered by clysters. 14. The apyrexic is notably more favorable to the absorption of medicinal substances than the pyrexic condition. 15. The typhoid condition favours such absorption less than other states of phlegmasia. Nevertheless it is more energetic than hitherto supposed, being only about a tenth inferior to the absorption taking place in the pyrexic condition. 16. In diabetes, the absorption of medicinal substances appear to be very feeble in the intestines. 17. In certain diseases, the tolerance or intolerance of medicinal substances may depend upon a special susceptibility rather than upon variations in absorption. Thus, in hysteria the tolerance of opium nowise depends upon an absence of absorption but results from a special susceptibility. 18. The rapidity with which medicinal substances, such as the salts of quinine, are eliminated, is in a direct ratio with the quantity of urine passed. This rapidity is the exact measure of the time which the economy takes to rid itself of the greater part of the fixed substances taken medicinally. 19. The absorption of medicinal substances analogous to the salts of quinine is far more rapid in the young. 20. It is less active in females than in males, in the proportion of a sixth to an eighth. 21. Abstracting from a medicinal effect the portion due to the quantity of the substance absorbed, the remainder gives the measure of the susceptibility of being influenced by the medicinal substance.—[*Bullétin de l'Acad.* and *American Jour. of Med. Sciences.*

The Uses of Pain.

Mankind are so accustomed to shrink from pain, and so eager in seizing upon every means to lessen or annul it, that the facts of our having been endowed with it, as with a sense, by a benificent Creator, and with the kindest intent, does not readily impress us. Yet that this is strictly true, daily observation teaches. Without pain to act as a sentinel, the body would almost momently be injured, perhaps hopelessly so, and Death would revel in such wise as that the race would soon be extinct. This is hardly an exaggerated statement; and a little reflection will enable any

one to realize the immense amount of evil which would ensue to us all, were the "sense of pain" abolished.

A very interesting and instructive article, in a late number of the *Quarterly Review*, is transferred to the pages of the *Living Age* of the 24th of April, 1858. It is a *critique* upon "An Essay on the Beneficent Distribution of the Sense of Pain," written by Mr. G. A. Rowell, Honorary Member of the Ashmolean Society, and Assistant Underkeeper of the Ashmolean Museum. Most of the details are familiar to medical men, but any reader will be delighted with the pleasant style of the review, the entertaining illustrations and the facts communicated. It is a paper calculated to do good to the general reader in many ways; and not the least by the noble sentiments with which its last two or three pages teem. We allude to the remarks upon cruelty to animals. Many seem now to believe, as did Malebranche, that dogs, horses, and such like animals *do not feel*, and that, therefore, any amount of abuse, by means of kicks, blows, goading and spurring is admissible. We say many persons *seem* to suppose this, for although they hear a dog howl if kicked, and know that a horse springs forward under the spur, they do not realize, or do not think, how much unnecessary pain is inflicted by them, in their gusts of temper, upon animals almost always innocent of any fault.

To recur to our first topic—the wonderful guardianship over the bodily organs, so kindly established for us through the agency of pain. How few think of the subject in this light. Accustomed too much, to look upon pain as an unmitigated evil, we are apt to concentrate our hatred upon it, rather than to recognize its function; and we strive only to remove *it*, without seeking for its cause. The latter task is, it is true, mainly the province of the followers of the healing art; yet how much may others learn by properly considering their own sensations.

Pain is an evil, then, but it is also a blessing. It is composite in its essence; and in this it resembles many medicinal agents, which, whilst effecting a certain good, are exceedingly unpleasant in their action. Of course it would be foolish to term pain a good in itself, and therefore not seek to relieve and remove it. The future Sir Humphrey Davy doubtless changed his opinion very quickly and permanently, under the strong personal application of the argument implied in the story referred to by the *Quarterly Review*, in the opening paragraph of the article we have cited. "Sir Humphrey Davy, when a boy, with the defiant constancy of youth which had as yet suffered nothing, held the opinion that pain was no evil. He was refuted by a crab, who [which?] bit his toe when he was bathing, and made him roar loud enough to be heard half a mile off. If he had maintained, instead, that pain was a good, his doctrine would have been unimpeachable. Unless the whole constitution of the world were altered, our very

existence depends upon our sensibility to suffering." As the reviewer says, "without the warning voice of pain, * * * the crab might have eaten off the future Sir Humphrey's foot while he was swimming, without his entertaining the slightest suspicion of the ravages which were going on." So he adds, "had he survived the injuries from the crab," he would have been destroyed by continuing the inhalation of carburetted hydrogen, after it had almost caused his death, and yet saved him by inducing *painful* sensations.

The preservation of infancy is alluded to by the reviewer, as often entirely due to physical pain. Of course, in the absence of parents or nurses, thousands of children would perish from mere lack of that experience which suffering gives them by degrees.

Another phase in the "beneficient distribution of pain" is the undoubted total absence of it in what is termed the last struggle. Dissolution is painless; the agony has been distributed over other hours of existence; the sunset of life, like those of many a stormy natural day, are placid, most generally. The opinion, however, is still commonly entertained that there must be pain whilst the spirit is leaving the body, because of the occurrence of convulsive movements remarked at such times. The suffering is only apparent, not real. What a consolation to friends is this, and what a source of comfort to all poor mortals, who know that they must pass through the gate of death. Upon this point the reviewer says: "In fact, though disease is often painful, the act of dying is not. Bodily suffering would be no protection then, and, consistently with the invariable method of Providence, we are spared a useless anguish."

Anæsthetic agents, which have been so mercifully revealed to us, and whose discovery is certainly the greatest boon to humanity since that of vaccination, have been questioned in regard to one of their applications, by eminent medical men. We refer to their employment in obstetric cases. There are those who contend that the pains of labor, being, in fact, natural and healthy demonstrations, ought not to be interferred with; that they have an important part to play—and that they have such uses as ought not, even partially, to be lost to the parturient woman. Whilst many decry this view as foolish and unfounded, we confess to seeing much truth in it. There can be no dispute as to the benefit of ether and chloroform in surgical operations, or their application for the relief of any *pathological* condition; but childbirth is not a pathological state, but wholly a natural act. It may well be questioned how far we ought to interfere with what are termed its "pains." Of course, if the woman in labor begins to sink under their mere endurance, or any morbid element mingles with the process, our authority is at once established, to inter-

pose—the state has become pathological. But often, anæsthetics are used in short and easy labors, when the patient would have done as well, or even better, without them. We can refer to several instances in which labor has been undoubtedly retarded by the action of ether on the uterine efforts; and within a few days, a case has been mentioned to us by a highly intelligent and observing medical friend, where this was distinctly proved. The labor was a first one, and the birth was delayed a long time without any apparent reason. The suspension of the inhalation of ether was advised by the gentlemen referred to, and on complying with the suggestion, the uterus *immediately* resumed its efforts, which safely and speedily resulted in the expulsion of the child.

This aspect of the use of pain deserves closer attention, and it may be well to sift obstetric cases more thoroughly; using anæsthesia, only, or chiefly, in such instances as really demand it.

We have already extended our remarks beyond the limits we had assigned to them. Pain, as an evil, has of late been placed more than could ever have been hoped for, under the dominion of scientific medicine. As a good, it still is vouchsafed to us in the shape of a watchful guardian; and it must be ever present on the earth in many forms and with every shade of intensity. It is only in the vision of the Revelation that we read, "and there shall be no more death, neither sorrow, nor crying, *neither shall there be any more pain.* [*Boston Med. and Surg. Jour.*

On the Analysis and Immediate Principles of Human Excrements in Disease. By Dr. Marcet, F. R. S.

The object of this communication is—1. To describe an easy and very practical method of analisis to be applied to feces in the diseased condition. 2. To show that the method of analysis in question is essentially anatomical or mechanical, and as free as possible from chemical reactions. 3. To show that in three instances of disease where the bile was prevented from flowing into the duodenum, the feces yielded a quantity of crystallizable fatty acids, (margaric and stearic acids,) which immediate principles are known to be absent from healthy evacuations, except in certain cases depending on a peculiar diet. A few words may suffice for describing the analysis. The evacuations are exhausted with boiling alcohol, and the solution strained through muslin. On cooling, a precipitate or deposite occurs in the fluid, which is separated from the mother liquor by filtration. This deposite, after it has been washed with boiling alcohol, is found in healthy cases to consist of stearate and margarate, or soaps of lime and magnesia, with or without earthy phosphates—these compounds existing in the evacuations under examination in the form of im-

mediate principles. The alcoholic washings or solution obtained from the deposit yielded, in case of retention of bile; considerable quantities of free margaric and stearic acids. The clear original alcoholic extract being mixed with milk of lime, containing a considerable excess of water, is converted into muddy fluid, when a distinct precipitate will be noticed. After having collected this precipitate in a filter, washed it with water, and dried it on the water-bath, it is to be exhausted with a mixture of alcohol and ether. The clear extract thus obtained deposits on standing, in all healthy cases, impure crystals of excretine; a substance easily purified and prepared, perfectly colorless, by repeated crystalizations in alcohol and filtration through animal charcoal. The author had previously described the characters of excretine in communications to the Royal Society, published in the "Philosophical Transactions" for 1856 and 1857. Diseased excrements do not always contain excretine, as it was absent in those cases referred to in the present communication, where it was searched for. The lime precipitate exhausted with alcohol and ether, is now to be mixed with water, and decomposed by means of hydrochloric acid; chloride of calcium is formed, and an insoluble substance remains floating in the liquid; this he has found very abundant in some diseased cases and also in a few exceptional instances after a vegetable diet; it consisted of margaric and stearic acids mixed with a considerable portion of oleic acid. Finally, by concentrating the filtrate from the lime precipitate on the water-bath, and decomposing the residue with sulphuric acid, certain organic acids soluble in water are obtained, possessed of a very pungent odor, and whose properties have not yet been investigated; the castings of carnivorous animals yield in this stage of the analysis butyric acid, a substance not present in healthy human evacuations. It must be remembered that the animal body contains a number of organic acids forming known soluble salts with lime, and consequently the examination of the filtrate from the lime precipitate in diseased cases is not to be neglected. The above description, although necessarily most incomplete, gives a rough sketch of the processes recommended for the analysis of feces; it has been put to the test for the examination of a very great number of human evacuations, and found to yield constant results in health; it is, therefore, perfectly adapted for the investigation of the composition of diseased excrements. Dr. Marcet now wishes to draw the attention to the circumstance that chemical reagents have been used as seldom as possible in these analyses, in order to avoid the decomposition of immediate principles or of compounds, such as they exist in the body. Alcohol and ether, with and without the application of heat, are the principal means employed. It is not impossible, however, to determine immediate principles by chemical analysis; and a

remarkable instance of the aid obtained from chemistry in these investigations, is the fact, that by the analysis of the mass deposited in the original alcoholic extract of feces on cooling, he has been able to ascertain that it contains phosphoric acid, fatty acids, lime and magnesia, exactly in such proportions as are required for the substances to combine in the form of earthy phosphates and earthy soaps. These compounds had, therefore, previously existed in the intestines in the form of immediate principles. Dr. Marcet then gives the detail of three cases in which he carried out his exaninations.—[*Proceedings of the Royal Med. and Chir. Society*, and *Ranking's Abstract.*

Statistics of Tracheotomy.

The statistics of the operations of tracheotomy performed during a number of years at the *Hôpital des Enfans* at Paris, where the effects can be observed upon an extended scale, must always be interesting and valuable. In former years we have frequently entered into practical details on the subject. We now quote from the *Journal of Practical Medicine and Surgery* the following statistics relative to the operations of tracheotomy performed during the eight years just elapsed.

The following is the list of these operations from 1850 through 1857, with the number of cures obtained:

1850—20	operations	6	recoveries.
1851—31	"	12	"
1852—59	"	11	"
1853—61	"	7	"
1854—45	"	11	"
1855—48	"	10	"
1856—55	"	14	"
1857—71	"	15	"
Total, 390		86	

It will be seen by the above table, that the proportion of recoveries, although very unequal in the several years, presents a very similar general average; that is, from 1 in 4 to 1 in 5 of the whole number operated on yearly. It should be mentioned that the majority of the children operated on were in the last stage of croup, and were consequently in imminent danger of death.

M. Guersant, in whose wards this estimate was prepared, gives the following summary of the indications for and against tracheotomy, based upon the age of the children, the existing complications, &c.

Age is an important element to be considered. Amongst the

cases which compose the above table, there is one of a child 18 months old, who died with convulsions during tracheotomy. M. Chaillon, the author of the article cited by us from the *Journal of Praitical Medicine and Surgery*, states that he saw, on the 7th of January last, a little girl of two and a half years die during the operation, notwithstanding the well-known skill of the surgeon. He had also seen a similar case in private practice—the patient being also a girl less than three years old.

Nevertheless, whilst the peculiar difficulties of tracheotomy in subjects under the age of two years are admitted—difficulties ascribable to the restricted relations and volume of the parts at that age; to the dangers of a minute, long and delicate dissection; and especially to the small size and mobility of the trachea, which often allow of the insertion of the tube only with extreme difficulty—M. Guersant does not consider the youth of the patient an absolute contra-indication to tracheotomy.

The same is true as regards pneumonia, when it complicates pseudo-membranous croup. For a long time, says M. Chaillon, the existence of this complication was thought sufficient wholy to contra-indicate tracheotomy. At present, M. Guersant adopts the opposite opinion; and he has become convinced that, in establishing respiration by an artificial track, he has favored the resolution of the pneumonia. He admits but one decided contra-indication to opening the trachea in croup—and that is, diphtheritic infection, or general diphtheritis. When a child whose vocal chords have been invaded by false membranes, exhibits at the same time similar morbid products in the nose, the ears, or upon the skin; when there are attacks of epistaxis and every sign of extreme debility—tracheotomy will be useless; the child will invariably die.

M. Guersant does not, moreover, consider the extremest degree of asphyxia an insurmountable obstacle to the success of the operation, provided the condition is permanent, and has continued for at least an hour, with a persistent character.

Slow and continued asphyxia is, indeed, the very state which is the chief indication for tracheotomy, according to M. Guersant. It is, then, the only thing to be done—the restablishment of respiration being that alone which can keep the child alive.

There is a sort of asphyxia which does not so imperatively call for the operation—viz., the intermittent form. M. Guersant has seen children making violent efforts to breathe and seemingly about to die instantly; false membrane having been discharged, the nature of the disease was certain. Notwithstanding, the friends having opposed the operation deemed necessary by the surgeon, the usual means were employed—such as emetics, calomel, alum, and chlorate of potash—and the patients have recovered. But with the exception of these rare instances and of the far

more common cases of general diphtheritis, M. Guersant thinks that as a general principle, tracheotomy is distinctly indicated whenever there is continued and increasing embarrassment of the respiration.—[*Gazette des Hopitaux*, and *Boston Med. and Surg. Journal.*

Watery Discharge from the Uterus During Pregnancy.

Dr. Harvey made the following remarks on this affection at a meeting of the Cork Med. and Surg. Soc., Dec. 9, 1857: "In some books on Midwifery, watery discharge from the uterus is noticed as amongst the diseases to which pregnant women are liable. A clear, limpid, colourless fluid, oozing in quantity from a few ounces to pints daily, flows away, sometimes stopping for a short time, and recommencing; and in the majority of cases it continues nearly, or full to the time of delivery. The abdomen does not appear palpably reduced by these discharges, and a living child is commonly born at or near the full time. In the greater number of instances, also, there is evidence of the usual quantity of liquor amnii being present on the supervention of labor. Dr. Alexander's case, given in the third volume of the *Medical Commentaries*, shows this very prominently. In a case by Dr. Petel, also, in the *Gazette de Hôpitaux* of July, 1838, the liquor amnii is specially mentioned as normal in quantity.

"What is the source of this fluid, discharged as it is, to the amount of hundreds of pints in the course of a few months? The supposition of its coming from the cervical glands of the uterus, or from the vagina, both of which have been assumed as sources of it by different authorities, appeared altogether unlikely from the nature of the fluid, its quantity, and its mode of coming away in gushes of considerable quantity at a time. That it could come from the space between the decidua and chorion, or between the chorion and amnion, we have no pathological facts, so far as I am aware, to warrant our supposing such a source for the flow; whilst in the natural condition of parts such spaces do not exist; as, at a period of pregnancy before these discharges commonly show themselves (say the sixth month, or thereabouts), the cavity between the chorion and amnion has disappeared; and we know that the chorion and decidua are in contact throughout.

"Under these circumstances we seem driven to the conclusion that the amnion must be the source of this flow; that there may be occasional solution of continuity in this membrane, admitting of discharges from time to time, which either close again, or admit by the mechanical relations of the bag to the neighboring parts of the amnion, refilling to a certain extent by

a fresh secretion of its particular fluid. In confirmation of this view may be mentioned cases recorded by Dr. Denman, Professor Burns, of Glasgow, and Dr. Pentland, of Dublin, in which the amnion is said to have given way from fright or other sudden shock, the water being discharged without labour coming on. All these considerations tend rather to the view that the escaping fluid may be liquor amnii than to any other which has been propounded. In the case which I am going to relate the symptoms were similar to those which were present in the cases of watery discharge which I have been noticing, and in this instance, as will be seen, the flow was undoubtedly amniotic.

"Mrs.———, mother of several children, was for more than a year, the subject of heavy sanguineous discharges, which were so little influenced by the treatment adopted that the existence of polypus was thought possible. An examination revealed considerable congestion of the os and cervix uteri, with superficial ulceration, which gave way to treatment generally and locally applied. During last summer her health was considerably improved, but occasionally menorrhagic attacks, which latterly observed more or less closely the monthly periods, showed themselves. Matters were going on thus when she suffered a considerable shock by her eldest boy meeting with a severe accident, in which his arm was fractured. On that day, for the first time (six weeks before delivery), she had a sudden gush of clear watery fluid from the vagina, and since that time to the date of these notes (5th November), she was scarcely free from it; it would diminish or nearly stop for a few days at a time, to come on again in gushes, and in considerable quantity. The quantity escaping in one of these was seldom less, and generally more, than half a pint; and on the late occasion, when the flow was accompanied by a heavy sanguineous discharge also, she thinks the combined amount was fully a quart. It came on in the horizontal position as well as in the erect, and apparently without any cause. The size of the abdomen did not appear much affected by these at any time.

"The occurrence of the watery discharge suggesting the probability of pregnancy, notwithstanding the menstrual changes which had been going on with some regularity, and that, if pregnancy did exist, the ovum might have suffered hydatid degeneration, I proposed an examination for the purpose of ascertaining the point. I found an abdominal tumour occupying the hypogastrium to above the umbilicus, and on laying my hands over its surface, it gave a good example of the value of a diagnostic indication lately suggested by Dr. Oldham; it afforded distinct evidence of its being uterine by gradually and regularly hardening under my hand. The movements of the child were also felt, and fœtal pulsation, distinctly heard by the stethoscope, put an end to all doubts.

"I told the lady that she had passed some six or near seven months of her pregnancy without being aware of it, and that her labor would probably come on prematurely, all of which she entirely disbelieved, and I could not induce her to make the necessary preparations. Two days after, I was called to her —the first stage of labour having set in with unusual distress and irritation; the pains peculiarly sharp and unbearable; the os uteri was hard and unyielding, and the breech, presenting in the second position, was felt in close contact. I immediately put her on antimonial solution, notwithstanding which the os uteri took over three hours to relax. After a first stage of about four and a half hours, and a second of less than half an hour, a male child, of scarcely seven months' growth, was born. The presenting hip and buttock were perfectly black, evidently from the direct pressure to which they had been subjected, in consequence of the loss of the liquor amnii. None whatever escaped with the child, and the sanguineous discharge was also unusually scanty. I do not think I ever witnessed so dry a labour.—[*Dublin Quart. Journ. Med. Sci.*, and *Amer. Jour. Med. Science.*

New Remedies in Yellow Fever—Chlorine and Veratrum Viride.
By E. D. Fenner, M. D.

Up to the present time, the treatment of yellow fever may be said to have been almost entirely empirical or based on experience alone; but empiricism may work on till doomsday and in the hands of skillful practitioners, achieve great success, yet fail to satisfy the demands of the inquiring and philosophic mind. *Science* alone can do this; by which I mean a knowledge of the morbific cause and an explanation of its *modus operandi* in the production of all the phenomena of the disease, as well when it terminates in recovery as in death. In ignorance of these fundamental desiderata, the practice must necessarily be empirical—like one groping in the dark, who might stumble upon a jewel, but at the same time be liable to fall into a pit—a thrust with a dangerous weapon by the looker-on of a personal combat, equally liable to strike friend and foe. By observation, much valuable knowledge has doubtless been attained, and likewise, great skill in practice has been acquired from experience; but all this is still unsatisfactory and incapable of being taught or transmitted to those who are to come after us.

Various plans of treatment and all sorts of remedies have been resorted to in yellow fever, but neither plan nor remedy has ever yet attained universal approbation and acceptance. Cases have been known to recover under every plan, and others

to die in spite of every known remedy; but the most important fact of all is, that persons may recover from the disease without any treatment at all—a problem full of instruction, but as yet, remaining unsolved.

Of all the remedies for this disease that have gained notoriety, the following four are the only ones that have been supposed to exert a special action on the morbific cause or *materies morbi*, viz: *mercury, quinine, salines and the tincture of the muriate of iron.* The virtues of all the rest, such as emetics, cathartics, diaphoretics, diuretics, blood-letting, counter-irritants, etc., are attributable to their generally known therapeutic action.

Of the four remedies just named, not a single one has succeeded in commanding general confidence in the powers claimed for it. Mercurial ptyalism is no longer relied on as a protection against the danger of yellow fever; the introduction of salines into the system for the purpose of counteracting the morbid changes of the blood, has been tried in vain; the once vaunted powers of quinine are fading away, and the tincture of iron has fallen into probably unmerited neglect, after a brief but brilliant career.

A correct theory is absolutely necessary to scientific and successful practice; and the physician, if there be one, who has *no theory*, is a mere empiric. In a case of yellow fever, we see a *contest between the inherent conservative powers of the body and a lethific agent;* be it a poison, a ferment, animalcule or vegetable cryptogam. In the course of this conflict, we may suppose that one or more of the following occurrences will happen: The morbific agent may be only capable of causing a perturbation or disease which can be overcome by the conservative powers of the system, with or without medical aid; or it may be so powerful as to defy the conservative powers as well as any known remedies, and prove *inevitably fatal.* 2. It may be neutralized in the system by remedial agents, in the way that certain poisons are disarmed by certain known antidotes. 3. It may be eliminated from the system by the emunctories, or secreting and excreting organs. 4. By the disturbance of the functions which it produces, it may cause the retention of elements in the system which have fulfilled their legitimate purposes and can no longer be retained with impunity; thus adding fuel to the destructive fire that is already raging.

The physician's theory of each individual case, based on its history and symptoms, will direct his practice towards the accomplishment of one or more of the above objects. If nature is doing all that is necessary, of course he will not interfere; but when she appears to be unequal to the task, it becomes his duty to render such assistance as the indications of the case appear so clearly to point out.

Here we might pause and inquire, *what, that is really beneficial*, has as yet been discovered? *and wherein*, lie the principal defects of our practice in this disease? The answer to these questions would require a critical review of all the various plans and remedies that have been resorted to in the treatment of yellow fever; a task which we have neither time nor space to perform at present.

The foregoing remarks have been thought necessary as a prelude to the introduction of two new remedies in the treatment of yellow fever, which, so far as a limited experience can testify, promise to fulfil in a most satisfactory manner, three of the most important indications, viz: 1. The controlling of excessive febrile excitement: 2. Maintaining the free and continued action of the great eliminating organs, the skin, liver and kidneys: 3. And consequent thereon, the preservation of the integrity of the blood and tissues. These remedies are *chlorine, and Norwood's tincture of Veratrum Viride.*

I brought myself to the experiment of chlorine by reflecting on the course and nature of this fever, and the want, long felt, of something that is capable of neutralizing the action of the morbific cause, or of assisting the efforts of nature to eliminate it from the system. Secondly, by recollecting the happy effects of the muriated tincture of iron which I witnessed in the epidemics of 1854 and 1855. Thirdly, by the flattering testimony in favor of chlorine in malignant scarlet fever, to be found in Watson's Lectures; and lastly, by the therapeutic action of chlorine and the chlorate of potass, as recorded in Pereira's great work, and other late writers. I resolved on using the chlorine mixture mentioned in Watson's Lectures, p. 1002, third American edition. The plan adopted was, first to purge the patient moderately with castor oil or some other simple cathartic, and bring on free perspiration by means of the hot mustard foot bath, warm orange-leaf tea and covering with a blanket; then to give to an adult two tablespoonfuls of the chlorine mixture every two hours.

My first experiments succeeded beyond my most sanguine hopes, and every case in which it was timely applied, excepting one, recovered in a most satisfactory manner. The medicine sat well on the stomach, but occasionally caused griping, which disappeared on omitting it for five or six hours or reducing the dose to a single tablespoonful. Under its use the febrile excitement soon declined, headache disappeared, and the kidneys and liver acted freely. The dose was diminished or the interval prolonged as the fever went down. In most cases, no other medicine was given till the end of the third or critical day, when the chlorine was stopped and I gave what is called here the

Sydenham Mixture, composed of the phosphate of lime and gum arabic suspended in equal parts of orange-flower water and distilled water. The bowels were kept open by enemata, as occasion required, and the patient was allowed to drink orange-leaf tea and barley water *ad libitum*.

In this manner, I had treated some eight or ten cases with satisfactory success, and was applying it to all my cases, both in private practice and the Charity Hospital, when I happened to meet one of the most extensive practitioners of our city, who stopped to relate to me a very extraordinary case he had just been attending. He then asked me whether I had ever tried Veratrum Viride in yellow fever? I told him I had not, but had long intended to do so. He begged me to try it in the Hospital, as he did not like to experiment on patients in private practice, yet felt the necessity of our endeavoring to find out some more valuable remedies than any we now have. I promised him to make the experiment very soon, and we parted. On the same day, I learned through the newspapers, that Dr. White and another physician of Charleston, had met with very extraordinary success in the treatment of yellow fever with the Veratum Viride. In the evening, I went to the Charity Hospital for the purpose of commencing my experiments with this medicine. This was on the 20th instant.

In Ward 16, (under my charge), I selected three cases, two of which had entered since my morning visit.

Case 1—Was a fine young Irish sailor, aged 16, who had arrived here from Liverpool only five days previously, and was attacked this morning; entered the Hospital at 5 P. M; had taken a mustard foot-bath and a dose of castor oil, which had moved his bowels freely. He had headache, injected eyes, skin very hot and sweating; great thirst; pulse 120. Ordered cold applications to head, orange-leaf tea, and five drops of Norwood's tincture V. V. every three hours.

September 21st. Found patient sound asleep and sweating freely, eyes less injected, headache much relieved, tongue moist; less thirst, pulse 100. Continued the V. V. every four hours.

5 P. M. Very quiet, but pulse up to 112.

September 22d. Cool, quiet and moist, pulse 88. Found the urine acid, but not coagulable. Continue treatment; move bowels by enema.

September 23d. Cool and quiet; rested well and apparently convalescent; pulse 70. Stopped the V. V. and allowed chicken water. On testing the urine, found it albuminous.

On the 25th, the patient had slight exacerbation of fever in the evening and took neutral mixture, tablespoonful once an hour. Urine more albuminous.

September 26th. Patient does not improve; has exacerba-

tions in the evening; bowels open, sweats moderately; urine now highly albuminous and bilious; threatened with hæmorrhage from gums. Put him on my chlorine mixture, tablespoonful every four hours.

27th. Has slight hæmorrhage; is improving.

28th. Rested well: is cool, quiet and hungry. Now fairly convalescent.

Case 2. Young Irishman, aged 19, was attacked on the morning of the 19th September, and went immediately to the hospital. I saw him at my morning visit and prescribed hot mustard foot-bath, and a dose of castor oil. After the bowels are well purged, to take two tablespoonfuls of the chlorine mixture every two hours. On the morning of the 20th he was doing well, and ordered to continue the mixture.

At my evening visit I resolved to put him on the V. V., and found his condition as follows: Considerable fever; skin hot and rather dry; pulse 100; tongue white, with red edges, and moist; considerable thirst; pain in the head and back; bowels rather loose and uneasy. Ordered five drops of the V. V. every three hours and the chlorine mixture immediately.

September 21st. Much better; face and eyes less injected; skin cooler and sweating freely; pulse 72; headache relieved; has some pain in the back; thinks the chlorine gripes. Ordered to prolong the interval of the V. V., and to take less of the chlorine. His urine is acid but not coagulable.

September 22d. Completely relieved; clear of fever and pain; pulse down to 72; is quite hungry; urine acid but not yet coagulable. He continued to improve steadily, and was discharged at his own request on the morning of the 26th. His urine was then beginning to show albumen.

Case 3. Was a German aged about 30. Entered hospital this evening, September 20th, in the second stage of the disease, (third day), having been vomiting and purging from the commencement of the attack. He was very weak; eyes much injected; headache; sweating; tongue moist; still vomits; pulse 100 and feeble. Wishing to see the effects of the V. V. in a desperate case, I prescribed five drops every three hours; sinapism to epigast.

September 21st. Pulse 80; skin cool, moist and of deep red color; had no pain; attempts to vomit; very thirsty; urine abundant, acid and highly coagulable. At noon his pulse was down to 54: has hiccup; stop the V. V. 5, P. M., hiccup checked. Contrary to orders he got out of bed and the hiccup returned. He lingered till the 23d and died. He passed urine to the last day, and it was highly albuminous.

In reflecting on these first cases, it appeared to me that case one, had such a lingering convalescence from the want of some-

thing besides the veratrum. This medicine had displayed its wonderful power of subduing febrile excitement, but there was something wanted to act upon the blood, liver and kidneys; that the rapid convalescense of case two, was probably due in some measure to the good effects of the chlorine mixture he took for about thirty hours; and that case three, could hardly be expected to recover after removal to a considerable distance, in the second stage of the disease.

From that time I have continued to use these two remedies in nearly all cases that have come to my charge in the first stage, and at the hospital in all stages while there was febrile excitement. I directed the remedies to be taken alternately, at intervals of two hours, i. e., first the veratrum, and two hours afterwards the chlorine; and so on till the febrile excitement is sufficiently reduced, the pulse of the adult brought down to 70 beats in the minute, when the former is stopped, but the latter continued in small doses. Previous to giving these medicines, the bowels should be well evacuated, but not severely purged. Subsequently, they may be kept sufficiently open by enemata. Sweating should be promoted by mustard foot baths, warm teas and covering with one or two blankets. Yellow fever patients are frequently sweated too severely, but I have hardly ever known one to do well without maintaining a good perspiration for three days.

It is proper that I should mention some of the troubles that may arise in the use of these remedies, for there is no medicine that possesses great remedial powers without being likewise capable of doing injury if improperly administered.

The Veratrum viride, as is well known, is a very powerful medicine and liable, when taken in excess, to produce great prostration of the vital powers. It should therefore be very cautiously given, and its action watched with the utmost care. There should be a considerable interval between the doses, so as to allow time for the medicine to display its effects. It will surely reduce the frequency of the pulse and febrile excitement generally; but if carried too far, it produces alarming prostration, great restlessness and a peculiar wild delirium, all of which will pass off in a few hours and may be relieved by a little paregoric and brandy. I have never heard of its producing fatal effects, although it has recently come into very general use in all parts of the country as a remedy in pneumonia and typhoid fever. The dose I have directed is of course intended for adults, and must be varied according to the age of the patient. It should be stopped gradually after the pulse falls to 72; and the remainder of the cure left to the chlorine mixture, with such adjuvants as the particular case may require.

In respect to the use of the chlorine mixture, I have as yet

met with no other trouble than the occasional griping before mentioned, which has never proved at all serious. This medicine certainly acts finely on the liver and kidneys. My experience with this remedy as yet only covers some twenty-five or thirty cases, an extent too limited to justify any further remarks at this time.

In offering these hasty observations to the profession, at the present time, I beg leave to say that my only object is to call attention to some new remedies which I have reason to hope will prove to be highly beneficial in the treatment of this terrible Southern pestilence, and to allow physicians residing at places where yellow fever is now prevailing, the opportunity to test their virtues at once. This, I hope, they will do at once, and let us know the results of their observation at their earliest convenience.

In conclusion, I must be permitted to say, that if the veratrum viride should ultimately turn out to be as valuable a remedy in yellow fever, as it unquestionably is in pneumonia and typhoid fever, Dr. Norwood will be entitled to the meed of being ranked among the greatest benefactors of mankind.—[*New Orleans Med. News and Hospital Gazette.*

The Antagonism of Opium and Quinia. By M. GUBLER. [Translated by J. P. BARROT, M. D.

M. Gubler read a paper before the *Société Médicale des Hôpitaux de Paris*, on the antagonism between Opium and Sulphate of Quinia, of which the following is a synopsis condensed from the summary published in "*L' Union Medicale*," of May 20, 1850. Being unwell himself, M. Gubler took sulph. quinia in 0.50 centigrammes doses only and was struck with the fact that they produced humming in the left ear only, although his hearing is equally good on both sides. This peculiar effect occurred three days in succession. As at that time he suffered from a head-ache which was most violent on the right side—on which side it is always greatest in M. G., he was led to suppose that the evident congestion on the right side, neutralized the effect of the quinia, which effect M. G. considered due to the privation of the brain of blood, (*anémier l'encéphale décongeetionner le cerveau*) the removal of congestion of the brain. M. G. having recovered his health, resumed his attendance in the wards of the Hospital. He there saw a case of acute articular rheumatism in which large doses of sulph. quinia and opium had been administered for several days without success. M. G. continued the dose of sulph. quinia—*i. e.*, 1 gramme 50 centigrammes with 0.25 centigrammes extract of opium. Finding that the particu

lar therapeutical effects of both remedies were entirely wanting, he increased the dose of sulph. quinia and diminished that of the opiate, without, however, any better success.

Lastly, he left out the opium altogether, and gave 1 gramme 50 centigrammes of sulph. quinia alone, which produced in a marked manner, the peculiar remedial effects of that drug. And from that time the rheumatism diminished rapidly and markedly. This and other subsequent cases of the same nature, confirmed him in his belief that opium was antagonistical to sulph. quinia, or, so to speak, its antidote.

M. Gubler enunciates his particular views of the *modus operandi* of opium and sulph. quinia. According to him, opium produces congestion and hyperæmia, whilst its antagonist, sulph. quinia, produces anæmia and dissipated congestion—(*anémie et décongestionne*).

The following are the conclusions of M. Gubler: 1. Inversely to opium, which exalts organic action, producing sanguineous congestion and caloricity, sulph. of quinine acts on the nervous system by condensing the forces there, in such a way as to arrest organic action, the source of waste, and to diminish as much as possible the afflux of blood in inflamed parts. (*Sic*).

2. This *modus operandi* once admitted, we can readily understand the innocuousness of sulphate of quinia in the cerebral symptoms of rheumatism, which symptoms recent experiments have already tended to show were not due to its use.

3. Moreover, the use of sulph. quinia is indicated in all the inflammatory forms of cerebral rheumatism; opium being serviceable in the nervous forms only, and in these only when not complicated by fever.

4. Sulph. of quinine and opium, being antagonistic should not be given together.

5. These two remedies may be used as antidotes to one another.

M. Guérard thought that sulph. Quinia did "*decongestionner le cerveau*," and stated in support of his opinion, that its use produced imminent synchope. Some years previously, while suffering from intermittent fever, he had taken large quantities of sulph of quinia, sometimes for a month at a time, in a single dose daily. As long as he remained in the recumbent position he experienced no unpleasant sensation, but when sitting, syncope was imminent. He had seen a second similar case.

With respect to the antagonism of opium to sulph. of quinia, he was the more ready to believe it, inasmuch as in his *thèse de concours* for the Chair of Therapeutics, he had shown that the effects of medicines when isolated might be neutralized by combination; and had mentioned that M. Caventou had given strychnia combined with morphia, each in large doses, and that the effects of the combination had been greatly diminished.

Substances which are poisonous by themselves, cease to be so when united.

Note by the Translator.—The conclusions of M. Gubler, on the antagonism of opium and sulph. of quinia, although endorsed in a measure by M. Guerard, fail to convince us. Further trials on a more extended scale, would show the correctness or incorrectness of his views. Should his opinions turn out to be correct, quite a revolution would take place in the administration of sulph. of qunine in this city, where either from fashion or conviction, it is most generally given in combination with opium. The *Haustus Quiniæ* of the Charity Hospital, which has done so much service, would then have seen her last day.

[*New Orleans Med. and Surg. Jour.*

The Subcutaneous Operation on Varicose Veins. By Mr. Henry Lee, Surgeon to King's College Hospital.

When blood is effused into the cellular tissue in the living body, it undergoes changes varying in different cases. Sometimes it is simply absorbed, leaving the surrounding parts as they were before; sometimes the fibrin becomes separated from the more fluid parts of the blood, and remains after these are removed. Again, the effused blood may remain contained in a kind of sac, of a dark grumous color, for weeks or months; or finally, it may undergo a process analogous to that of suppuration, and be discharged, more or less deprived of its coloring matter, as from an abscess. Blood that remains for any lengthened period stagnant in veins undergoes somewhat similar changes. It may be deprived of its serum, and its more solid parts may remain, obstructing the veins for almost an unlimited period, or it may become dark and grumous, undergoing a kind of slow decomposition; or again, in the fibrin previously separated from the other constituents of the blood, cell development may take place, and an abscess will form in the vein.

In the various operations which have from time to time been practised for the obliteration of varicose veins, the effused and stagnant blood has occasionally either undergone a kind of decomposition, or has become involved in an abscess; and when the products of these changes have become mixed with the blood, it is now well known with what fatal certainty their presence is manifested. The occasional, although rare occurrence of the symptoms, now recognized as those of blood-poisoning, after operations on the veins, had led surgeons from time to time to seek for modes of operating which should be free from the dangers previously experienced.

In 1815, Sir Benj. Brodie published a paper in the "Medico-Chirurgical Transactions," in which he advocated the subcutaneous division of varicose veins. In that paper, the advantages of

the subcutaneous mode of operating are clearly pointed out. (A description here followed of Sir B. Brodie's mode of performing the operation.) In this mode of operating, no adequate provision is made against hemorrhage from the divided vessel on the one hand, nor against the absorption through the open mouth of the vein of the products of the effused or stagnant blood on the other. If a vein be simply divided, no one can tell exactly how much blood will be effused; and if effused in quantity, the changes above mentioned will occasionally take place. These changes may occur either in the blood outside the vein, or in the stagnant blood still within the vessel, or the action may be communicated from one of these to the other. The product of these changes may be localized by the unassisted powers of nature; the vein may be closed, so that no absorption through its canal can take place. In like manner, an artery, when divided, may spontaneously cease to bleed; but nevertheless surgeons are not fond of trusting to these unassisted powers of nature. In one case, as in the other, that which may take place from natural causes may be with tolerable certainty effected by artificial means. The vein, like the artery, may be safely and efficiently closed. If this be carefully done before an enlarged vein is divided, the effusion of blood is in the first instance prevented, and there is proportionately less risk of any of the morbid changes which have been referred to; and secondly, even should such changes take place, the products of such changes are prevented from entering the circulation through the wounded vein.

Such were the considerations which induced Mr. Lee in the year 1853 to try a new mode of performing the operation of subcutaneous division of varicose veins. The plan then adopted was to place a needle under the vein both above and below the part to be divided. A ligature was then placed over the needle in each situation, and allowed to remain for a couple of days. At the expiration of this time the blood was usually coagulated in the vein, which would be felt as a round soft cord on either side of and between the needles. The vein was now divided by subcutaneous incision, and two days later the needles were removed. After three or four more days the parts usually had the appearance of having united by the first intention, and the patient was allowed to go about his usual occupation. In his first attempts to perform this operation, he could not say that his success had been quite such as he could have wished, and indeed expected. One case in particular had some severe local and constitutional symptoms; and he had reason to believe that an abscess had formed in the vein, where it had been traversed by one of the needles. Reflecting subsequently on the cause of this, he became convinced that the origin of the mischief was,

that the needle had pierced the vein instead of being made to pass fairly under it. In subsequent operations this point was attended to, and performed with due precaution, as it has now been by Mr. Erichsen, and various other surgeons, a great number of times, and it has not, so far as Mr. Lee was aware, been attended with danger. During the last twelve months a further improvement, as he conceived, had been effected in regard to this operation. The vein is divided as soon as the needles have been placed under it. The subcutaneons incision heals in about the same time as in the other operation, and the confinement of two days previous to the section of the vein is avoided. In this operation the blood which the vein contains between the two needles is allowed to flow out of the incision; and thus any tendency that there might be for stagnant or effused blood to decompose is avoided. In performing the operation in the manner now described, the blood contained in the veins between two needles escapes; the sides of the vein necessarily fall together, and are maintained in apposition. The sides of the vein compressed by the needles and ligature suffer no violence or injury. The subcutaneous incision is pretty sure to heal by first intention, and even should it not, the vein being closed above and below, no diseased secretion can find its way along its channel. Various cases were given to illustrate the different modes of producing obliteration of veins by subcutaneous division.

British Med. Jour., and *Ranking's Abstract.*

The different effects of Gaseous Injections into the cellular tissue and into the peritoneal cavity. By J. C. SHAPARD, M. D.

M. M. Laconte and Demarquay communicated a memoir to the Academy of Sciences at its meeting of the 29th of March, 1858, on the pathological, physiological, and chemical phenomena produced by the injections of air, azote, oxygen, carbonic acid, and hydrogen into the cellular tissue and into the peritoneal cavity.

From facts contained in this memoir, the authors conclude:—

1. That air, azote, oxygen, carbonic acid, and hydrogen, do not produce any hurtful effect when they are introduced into the subcutaneous cellular tissue or into the peritoneal cavity.

2. That all these gases are absorbed after a longer or shorter time, and with a rapidity which varies from forty-five minutes (carbonic acid) to many weeks (azote). The rapidity of the absorption is always presented in the following manner: carbonic acid, oxygen, hydrogen, air and azote.

3. That the injection of any gas whatever into the cellular tissue or into the peritoneum, constantly determines an exhalation of the gases contained in the blood and the tissues.

4. That after the injection of the gases, mixtures are formed that are more easily absorbed than the least absorbable gas contained in the injected part. So that the absorption of this last does not commence only when it is already mixed in certain proportions with the other gases.

5. That, in general, the exhalation of the gases of the blood or of the tissues, has been more considerable in the the experiments made during the digestion, than in those made during fasting, and more in the peritoneum than in the cellular tissue.

6. The rapidity of the absorption has not seemed modified by the state of fasting or digestion.

7. That of all the gases injected, hydrogen is the one which determines the most considerable exhalation of the gases of the blood when the hydrogen has already disappeared from the mixture, the animal still preserves the volume that it presented at the moment of injection, which would induce the belief of nonabsorption of hydrogen, if a chemical analysis did not explain the phenomenon.

8. The rapidity of the absorption of the gases by the blood is not always in proportion to their solubility in water (azote and hydrogen).

9. If in the injections of air into the cellular tissue and into the peritoneum there is a constant absorption of oxygen, and exhalation of carbonic acid, which in this respect, resembles the phenomenon of pulmonary respiration, the two physiological facts should, nevertheless, not be considered as identical, for in the case of the injections, the proportions between the carbonic acid axhaled and the oxygen absorbed constantly vary.

[*Nashville Jour.* of *Med. and Surg.*

Suture of the Extensor Tendons of the Fingers, with a Case of Cure by this Treatment. By M. MOURGUE.

Suture of the small tendons, like the extensors and flexors of the fingers, is a triumph of modern surgery; and the happy results which have followed its use have given it a place among legitimate operations. The case of M. Mourgue adds another instance of success to those already recorded.

Case.—A maker of wooden shoes received on the back of his left hand, on the 10th of December, a blow of a hatchet, which divided the extensor tendons of the fore and middle finger at the metacarpo-phalangian joint. The lower ends presented at the wound, but the upper were retracted tendons, allowed them to be seized by forceps and pierced by a needle armed with a waxed thread; this needle was then passed through the corresponding ends of the tendons below, and they were thus brought into contact with those above, and tied. The external wound

was also closed with sutures. The hand was extended on a wide flat splint, and the wound covered with a linen bandage spread with cerate, and compresses wet with cold water.

12th. There is considerable swelling of the wrist and great redness; it is necessary to remove the sutures from the wound. In a few days the inflammation subsided.

20th. The wound, which is open, but free from redness and inflammation, is in good condition. The edges were brought together with sticking-plaster.

The ligatures of the tendons came away on the 24th and 26th; the external wounds cicatrized at once. On the 8th of January, the splint was dispensed with.

Jan. 22d. The man has resumed his work, the fingers having gradually recovered their strength and mobility, and having complete power of extension and flexion. In a word, the suture of the extensor tendons has been attended with all the success which could be desired.—[*Gazette Médicale*, and *Boston Med. and Sur. Journal.*

EDITORIAL AND MISCELLANEOUS.

EDITORIAL REFERENCE TO OUR ECLECTIC DEPARTMENT.

Quinine and Alum in Diphtheritis.—We have here* collected in a body, a number of articles on a most interesting and sometimes fearfully fatal form of disease. As we have seen, it most commonly prevails epidemically—though sporadic cases are referred to. Our object in thus bringing together, in the compass of a single number, various accounts of both the character and treatment of membranous sore throat, is, that our readers may have these accounts to refer to, when, in their practice, such histories may become of particular interest. We are struck with the remarkable uniformity in the character of the disease, in all the descriptions presented from various sources—and also, by the entire absence of any mention of certain modes of treatment which, in our experience, have been of the greatest practical value—which, indeed, have proved almost specific, in the latitude which bounds our practice.

Just ten years ago, (in the year 1848,) Augusta and its vicinity, together with several other sections of the State of Georgia, were afflicted sorely by the incursions of an Epidemic Diphtherite, the history of which has never been written. It is not our design to write its history now, but simply to refer to some of the peculiarities which the disease pre-

* See pp. 747-756, present number.

sented during its prevalence here at that time, and to give a summary of the treatment pursued.

The year 1848, in its meteorological character, presented nothing very unusual in this region. Late in the autumn, when intermittent fever was prevailing perhaps to a greater extent than in the earlier part of the year, we suddenly observed, among children, certain cases of this unusual form of "sore throat." Our attention was not called to the first cases until the disease had advanced so far, that remedial measures were unavailing. The fatal croup had supervened, and the two or three first cases soon died without undergoing any modification from the treatment applied. We were thus early made painfully aware of the serious nature of the affection with which we had to deal, and whenever called early, treated the cases vigorously upon such a plan, as our little personal acquaintance with the affection could devise. Notwithstanding the opportunity afforded by early attendance, the disease rapidly progressed in most of these cases, and several of them died, on the supervention of the croup.

Our description of the cases which occurred in Augusta, will not, we think, differ very widely from that found in several of the articles presented to our readers from the various journals. In a few cases the attack was preceded by premonitory symptoms, as restlessness at night, slight fever and loss of appetite, but seldom with any actual soreness of the fauces which induced the child to complain. More frequently than otherwise, the parent or physician would have the attention arrested by a peculiar, offensive odor in the breath, even before the child had evinced any symptom whatever of any ailment; when, on looking into the mouth, the tonsils and larynx would often be found covered with the white, curdy-looking deposit, peculiar to this form of disease. On closer examination, the upper part of the larynx, the nares, even as far forward as the opening of the nostrils, would be found covered with the same matter, which spread itself in the form of a membrane over the whole surface of the mucous lining of these more external parts of the air-passages. Often, at this first examination, a croupal hoarseness could be detected, which too plainly indicated the extension of the disease into the larynx. The cases in which the affection proved most fatal were, as may be seen in most of the accounts given of it elsewhere, *children under twelve years of age*, and death seldom transpired here, in any other way than from the *croup*.

The condition of the subjacent mucous membrane was often the subject of our careful inspection. Excellent opportunities were afforded us to examine the state of both the false membrane and the mucous membrane, during the life of the patient, by those cases in

which the deposit existed in the nostril; for in them, it often extended forward to the very junction of the skin and mucous membrane, and we could compare the appearance of the three surfaces as they lay in regular order of super-position—viz., skin, next mucous membrane, and lastly, the false white deposit—the skin, even immediately bordering upon the two other membranes, seldom evinced any change, but the subjacent mucous membrane was invariably *red, to nearly its entire thickness*, and seemed to be the seat of a certain kind of inflammation—while the false membrane was perfectly white and seemed to have no vascular connection whatever with the mucous surface. In a few days the first layer of the deposit would be elevated and loosened by the effusion of pus under it and them—it was easily separable from the mucous membrane. In the pharynx it would be often found hanging from the posterior wall, and even from the velum, in the form of a white ragged curtain. While in a certain fatal case which we examined, the child evidently died at the moment of, and directly in consequence of, this kind of separation of the false membrane from the walls of the larynx, the shreds blocking up the rima and producing death by suffocation. The case appeared to us, *to die in getting well.* Doubtless, many have died in exactly this stage, of what may, in one sense, be called a natural process of recovery.

We had many cases among the adult population, *but not a single fatal case over twelve years of age*—indeed the nearer the child approached to infancy, the more imminent, in our mind, was the peril from the croup. From a close observation of many cases—comparing the cases of the younger children with those occurring in youths and adults, we came to the conclusion that the greater fatality among young children was not due so much, to any greater susceptibility to the disease, nor to a less power of resistance on the part of the patients of this age; for many of our most violent cases occurred in children over twelve years of age, whose constitutions were comparatively feeble, and yet they went through even the croup, and recovered. The circumstance which, in our opinion, decided the fate of the patient, for death or for recovery, was of a purely mechanical nature—a *question simply of space—space to breathe.* The little advantage in the calibre of larynx which the older children possessed over the younger ones, was certainly the determining *accident* of their recovery. The deposit on the inner surface of the larynx varied but little in its thickness: it occupied as much space, *absolutely*, in a large windpipe, as in the smaller ones, but then the smaller ones could not *afford* this space, and suffered complete, or at any rate, a fatal occlusion. We are very confident that the above is the true explanation of the marked influence which age appeared to exercise over the result of the disease.

In a recent communication to the American Medical Association,* the nature of Diphtherite became incidentally the subject of discussion, and although we cannot here, without inconveniently extending our remarks, define our belief, or present arguments in its behalf, we yet state that we regard diphtherite as a disease which is eminently under the control of the *nervous system*, which underlies and governs its phenomena in such a manner, that it is impossible to deny its recognition in all our deliberations upon the nature of this affection. We do not deny the ground which many, doubtless, will take, that the disease is essentially, a peculiar vitiation of the *blood*, as is clearly manifested in its observed phenomena; but from our own observation, which has been ample, this blood affection, or toxæmia, specially affects the *pharyngeal plexus of nerves*, aberrating the influence which they exercise over the circulation and secretions of the pharynx, larynx and trachea, and metamorphosing their normal mucous exhalation into an effusion which forms the material of the false membrane of diphtherite.

In the earlier part of our epidemic, the disease was seldom marked by fever, and only local remedies and such as would be rationally suggested by the special symptoms presented, were applied; but later, a few cases were accompanied with decided fever. This fever was *intermittent*, and was found to aggravate the local symptoms very decidedly. Along with the local treatment previously applied, *quinine* was freely administered to those patients, in order to control the fever, and to our surprise, not only was the fever arrested, but the extension and progress of the membranous deposit was promptly arrested with the breaking up of the fever. From this marked influence of quinine upon the disease, we were induced to apply it in *every* case, *whether fever presented or not;* our mode of giving it was the following:—From 5 to 15 grains of quinine, according to the age of the child, was given in divided doses, during the earlier part of each day, for several days; and no less in the apyrexic than in the few pyrexic cases, did the quinine appear completely to control the progress of the affection. Seldom, after the free use of quinine, in the earlier part of the attack, did we ever find the disease extending into the larynx and producing the croup. In addition to the quinine, we frequently advised, in the beginning, a mild cathartic, containing from 5 to 8 grains of calomel, but if called later to the cases, this was omitted.

The local remedies applied here were numerous—nitrate of silver, both in weak and strong solution, was freely used by many: our own experience with it was not such as to induce us to recommend it. Dr.

* Report on the Nervous System in Febrile Diseases, Washington, D.C., May '58.

L. A. Dugas has the record of many cases which illustrate the value of strong hydrochloric acid, locally applied, in our epidemic. Pulverized alum (sulphas aluminæ) was the local application used by Dr. J. A. Eve, and by several other of our practitioners, with much success. This last was the only local remedy applied by us. The method of using the remedy, was the following:—The alum was first ground in a mortar to an impalpable powder—occasionally it was mixed with a small proportion of sugar. This was blown against the posterior wall of the pharynx five or six times a day, through a reed or glass tube. The most advantageous mode of applying it, was to press the end of the tube upon the mass of pulverized alum, so as to engage a considerable quantity of the powder—have the child properly held by an assistant, and then with a spoon or speculum, press down the tongue, and directing the tube rather downwards, blow the powder strongly against the posterior wall of the pharynx. If the tube were directed upwardly, the alum was liable to get into the posterior nares and give the child much pain, and cause it to resist the subsequent applications.

Time nor space does not allow us at present to dwell upon the advantageous results of the above treatment of Diphtherite, nor upon the peculiarities of the disease as it presented itself in Augusta.

In perusing the many accounts of epidemics, in various parts of the world, which have recently appeared in journals, we have, with much interest, sought for the results obtained from the use of quinine, applied in the manner we have herein hastily described; but we have found quinine but rarely mentioned at all, and only in one of those accounts but incidentally, and not much importance attached to the results of the treatment. Having experienced such beneficial results from the treatment, we are now induced to record our views, hoping that it may be found valuable to those of our readers at least, who may have to contend with an epidemic of this insidious but terrific affection in a Southern, or a malarial region.

Medical and Physiological Commentaries. By Martyn Payne, M. D., A. M., &c. Vols. 1 and 2, octavo, pp. 716 and 816. 1840.

Essay on the Modus Operandi of Medicines. By the same author.

In a former notice, we called attention to the great value of this distinguished writer's contributions to the medical literature of our country. No less now, are we impressed with Dr. Payne's commendable industry, indefatigable labor, and also, with the value of their results, than when we reviewed, a few months since, "The Institutes of Medicine," from his distinguished and prolific pen. Leaving out of sight, that difference

of sentiment and belief, which must necessarily exist among medical men, of the present age, on such long contested questions as Humoralism and Vitalism, no one can read the works of Dr. Payne, without conceding to him, the opinion that, in him, the one has met its most unyielding and able opponent, and the other, a most ardent, learned and powerful advocate.

His volumes all evince an amount of erudition and thorough acquaintance with the history of medical science, which render his works valuable, together with their other points of interest, as a rich repertory of medical facts and opinions, collected with much judgment and discussed with great acumen and fairness. But these are far from being the most prominent recommendations of the volumes before us. In an age when Humoralism has become *ultra*, and the influence of the nervous system is somewhat overshadowed and obscured by modern chemical doctrines—which are doubtless, in great part, true in themselves, Dr. Payne's earnest advocacy of *Vitalism*, which we are free to admit, is itself *ultra*, proved a valuable defence to the true and more conservative doctrines of medicine. His urgent appeals for this Vitalism and strong arguments against Humoralism, catch the ear and arrest the attention of the profession: and it has begun to be admitted, that though Humoralism may be true, as the majority has heretofore firmly believed, yet the *nervous system* and its influence upon the animal economy, may *also* have at least a modicum of truth.

In the volumes before us, the author's considerations are embodied under the following heads, to each of which it will be seen he has devoted much thought and a goodly number of pages:—1st. "The Vital Powers," 119 pages; 2nd. "The Philosophy of Blood-letting," 264 pages; 3rd. "The Humoral Pathology," 332 pages—which completes the contents of the first volume. During those three extended essays, he applies observation, research and able reasoning to each department of his subjects, and examines them not only as they exist now, but as they are found recorded from the earliest history of medicine to the time at which the author's commentaries were written, 1840.

In volume 2, we have 78 pages devoted to "Animal Heat," 44 pages on the "Philosophy of Digestion," with an Appendix of about 20 pages, on "Spontaneous Generation," 74 pages on "The Theories of Inflammation"; while the body of the volume, 426 pages, appears to be devoted to the "Philosophy of Venous Congestion." A paper on the "Comparative merits of the Hippocratic and Anatomical Schools," together with a review of the writings of Louis, serve to complete the second volume of the work.

The Pamphlet, mentioned at the head of this notice, is a series of

"Essays on the Philosophy of Vitality as contradistinguished from Chemical and Mechanical Philosophy; and on the modus operandi of Remedial Agents." This pamphlet constitutes a part of the *third* volume of the "Commentaries," and fully sustains the character of the two volumes we have had the opportunity of examining.

A System af Human Anatomy: General and Special. By Erasmus Wilson, F. R. S., author of "The Dissector's Manual," "A Treatise on Diseases of the Skin," etc., etc. A new and improved American, from an enlarged London edition. Edited by William H. Gobrecht, M.D., Professor of Anatomy in the Philadelphia College of Medicine, Fellow of the College of Physicians of Philadelphia, etc. With 397 illustrations on wood. Philadelphia: Blanchard & Lea. 1858. Pp. 616 octavo. (Through H. D. Norrell, Augusta, Ga.)

The great practical value of Wilson's Anatomy, as a manual for the student, the practitioner, and for all who may desire to become acquainted with the subject, is too well attested by the unprecedented success of the work, and the universal verdict in its favor, to render recommendation necessary. The present edition is greatly enlarged, and its value much enhanced by numerous *new* illustrations. "The extensive additions made by the hand of the author, in successive revisions, are indicated by the fact, that it contains fully one-fourth more matter than the previous American edition, rendering a smaller type, and an enlarged page, necessary to keep the volume within a convenient size."

The work has heretofore been edited by Dr. P. B. Goddard, but the present edition bears the name of Dr. William H. Gobrecht—well known, both as a teacher of Anatomy and as the Editor of works in which he has creditably labored. His valuable initial chapter is an introduction which early bespeaks the interest and attention of the reader for the balance of his labor upon his author's work. We have ever commended Wilson's Anatomy, without hesitation or reserve, to students of medicine, and the present edition only *increases* our approbation.

Lectures on the Principles and Practice of Physic. Delivered at King's College, London, by Thomas Watson, M. D., Fellow of the Royal College of Physicians, late Physician to the Middlesex Hospital, and formerly Fellow of St. John's College, Cambridge. A new American, from the last revised and enlarged English edition. With additions by D. Francis Condie, M. D., Fellow of the College of Physicians of Philadelphia; member of the American Philosophical Society, etc., etc. With 185 illustrations on wood. Philadelphia: Blanchard & Kea. 1858. 8vo., pp. 1224. (Through H. D. Norrell, Augusta, Ga.)

Although we have not room for even a full *notice* of the above work, we yet call attention to it, and will dwell upon it more fully hereafter. This is truly a splendid edition of a splendid work on the Practice of

Medicine. It comes to us just in time for the opening sessions in the various Colleges. The English work costs eight or ten dollars. This *improved* American copy only three or four. Dr. Condie has added largely to its value, and has adapted it well, to the various diseases as they prevail *in all parts* of our widely extended country. This notice is intended particularly for the *students* in our own and other Colleges. We shall review the work more fully in our next issue.

The Nashville Record of Medical and Physical Science.—The face of a new acquaintance is ever agreeable and interesting to us; but with far more interest and pleasure do we contemplate the countenance of old and familiar friends—friends, too, concerning whose fate we had felt somewhat uncertain. The breaking up of the offices of our two valued exchanges, the *Memphis Medical Recorder* and *The Southern Journal of the Medical and Physical Sciences*, by the removal of their respective editors to Nashville, certainly, suggested the inquiry—What is to become of *our* interests?—The question has been promptly answered—the temporary silence of the two parties has been occupied, it appears, in business-like, matter-of-fact courtship, which has resulted in the happy *marriage* of the worthy couple, and the comely offspring greets us in the Nashville Monthly Record. The name of Professor Daniel F. Wright is familiar to our readers, and not less so is that of Professor Richard O. Curry. We wish them, in their congenial and well-assorted union, even more happiness and success than they enjoyed as separate journalists.

Medical Journal of North Carolina.—The two first numbers of this valuable bi-monthly are before us. Its original, eclectic, editorial and miscellaneous contents fully assure us that the old North State has waked up in medical matters to some purpose, and suggest the idea, that it may, ere long, not only overtake, but outstrip some of her sisters, who had taken a long start of her. The editor of this new comer to our sanctum is Edward Warren, M. D., son of Dr. Edward C. Warren, one of the Vice-Presidents of the American Medical Association. Our new confrére is well known to the Profession as the successful essayist in a recent contest for the Fiske fund prize. His subject was, we think, "The Influence of Pregnancy upon Tubercular Development."

It affords us pleasure to place the North Carolina Medical Journal upon our list of exchanges, and we will endeavor to enrich our own pages from its valuable fund. It is published bi-monthly, at Edenton, North Carolina, under the auspices of the State Medical Society.

American Dentists in Europe.—There are, we believe, from twelve to eighteen American dentists engaged in practice at the present time in the different parts of Europe, and all, so far as we have been able to learn, are receiving the most flattering encouragement. There are two in London, one in Manchester, three or four in Paris, one in Berlin, one in Rome and one in Madrid. There are also others whose places of residence we do not know, and every year adds to the number. We have recently learned that Dr. F. Fuller, of Portsmouth, N. H., intends visiting Europe in a few months, but whether he goes merely for purposes of pleasure or with a view of practicing his profession abroad, we are not informed. A gentleman of his intelligence and professional capacity will scarcely fail to meet with a kind receptiou from the members of his profession on the other side of the Atlantic. We wish him a pleasant trip and safe return.—[*American Journal of Dental Science.*

We, too, have a friend among the American dentists in Europe. Dr. J. W. Spear, formerly a practitioner in this place, but more recently of New York, has, we understand, removed to England, where, we are gratified to learn, he is much pleased with the encouragement he has received. We sincerely wish him that full amount of success which his urbane manners, gentlemanly bearing, and fine professional abilities are so well calculated to secure him.

The Cauterization of Strictures of the Nasal Canal, by means of Cat-guts impregnated with a solution of Nitrate of Silver. By Dr. Raw, Professor of Medicine at Berne.—Ten years ago I conceived the idea of employing this means for cauterizing contracted or indurated canals; I first made the experiment on the Eustachian tube, and afterwards on the urethra, and on the nasal canal. *Process:* The cat-guts are cut into pieces of convenient length, polished at one extremity which is smoothed with a very fine file, then washed in a solution of potash to free them from the oil which they contain. They are afterwards plunged into a strong solution of nitrate of silver (1 part to 10 of distilled water), from which they are taken at from four to eight hours, according to their thickness; they are then dried by suspension in the open air in a dark place. If the cat-gut is left too long in the solution it will become twisted and distorted. After drying, the surface and the interior are saturated with crystalized nitrate of silver. Should there be any inequalities they must be removed by the file. The pieces of cat-gut thus prepared, are preserved in blackened glass-tubes. In course of time the color of the cat-gut becomes darker, without the curative effect being weakened.

When we wish to use these cat-guts in strictures of the nasal canal, they are flattened at the upper extremity so that they can be applied and fixed to the fistulous orifice at its outlet. After performing some abstergent injections the cat-gut is introduced, without the coat of oil until it becomes strongly pressed in the contraction. At first the patient experiences scarcely any pain, and that which he feels afterwards has never been so great as to compel me to withdraw the cat-gut before the lapse of twenty-four hours. If the irritation is not too great, introduce

every day a new cord, after having previously injected with fresh water, or what is better, a solution of sulphate of copper. After the second trial we perceive that we may increase rapidly the diameter of the cords. When the irritation becomes too great, which rarely occurs, we introduce cat-guts, not nitrated, until the irritation ceases. When the canal is sufficiently dilated throughout its extent, and the secretion has lost its purulent character, it is well to wear for some time a leaden nail, before allowing the fistulous opening to close. The strictures of the nasal canal not caused by an anomaly of the osseous duct, heal by this method in a few weeks, while we know the other methods often require several months. I have also in several cases successfully used the solution of sulphate of copper.—[*Charleston Med. Jour. and Rev.*

Facial Neuralgia—Cauterization of the Helix.—Our readers will perhaps remember the singular treatment proposed in Sciatique which consisted in cauterizing the helix with iron at a white heat. However strange this process may appear there can be offered in its favor a certain number of well established cures, and it is by no means abandoned by practitioners, although in truth the failures have been thus far quite as numerous as the successes. The same means have just been employed in Facial Neuralgia, by Dr. Texier, who has published in the *Moniteur des Hopitaux*, a communication on the subject. Dr. T. had seen the process applied in this affection by Professor Jobert de Lamballe, and he resolved to repeat it on the first occasion. A young woman had suffered for six weeks with intolerable pains on the right side of the head and in the lower jaw: she had had no rest, and at times experienced inordinately painful exacerbations. M. Texier effected with the instrument at a white heat, the cauterization of the helix at the moment when the pain was at its maximum. The patient uttered a cry and began to weep, then shaking her head as if to see whether she had been dreaming, she declared herself entirely free from pain. The cure was permanent.

Another yonng woman was for two months troubled with a trifacial neuralgia on the left side, for the cure of which various expedients had been tried in vain. The pain in the jaw was so severe as to render mastication impossible, and she lived only upon soups and milk. The cauterization of the helix was quite as successful in this case as in the preceding.

A third observation gave precisely the same result. But M. Texier informs us that this process does not always succeed; very far from it, since with eight patients he effected only one cure. It seems that to apply the method with any confidence of success the neuralgia should be fixed and without complications. Cauterization, reserved for cases in which the affection is, so to speak, idiopathic, without any particular character but a violent, steady pain in the course of the trifacial, may become a valuable resource, and we ought to be the better satisfied thereat, because in general such cases are the most difficult to manage, as science possesses little more than uncertain and too often inefficacious means of controlling them.—[*Jour. de Méd. et de Chirurgie*, and *Ib.*

Convulsions of Children.—Irrigating the head with cold water is considered by Dr. Lalesque an excellent remedy in convulsions of children.

Paralysis of the Facial Nerve.—An interesting case of this disease has been reported by Professor Hohl, of the Lying-in hospital, at Halle. It occurred in a new-born child that had been removed from the mother by the aid of forceps. The pressure of the left blade upon the side of the head induced a paralysis of the facial nerve which resisted all treatment. In consequenee of this, the child was prevented from drawing the milk from the mother's breast, since all the fluid ran out of the corner of the mouth on the paralyzed side. Nothing could be swallowed until it was placed within the grasp of the muscles of the pharynx. The child died on the twelfth day of inanition.—[*American Journal of Dental Science.*

Treatment of Threatening Mammary Abscess. ℞.—Linseed oil, one oz., Honey, flour, do. To be stewed over a slow fire, at a moderate heat, until the flour has become converted into a paste, and completely incor porated with the honey and oil. While warm add to this one ounce of camphor, ground into a fine powder, with a little sulphuric ether or strong alcohol. Mix the camphor with the paste intimately, and spread a plaster on a piece of cloth or cotton; apply this to the inflamed breast, and keep it on night and day until relief is obtained. It is well to take the plaster off every morning, and sprinkle about a drachm of finely powdered comphor over it;—then re-apply as before.

(Dr. Wilkinson, of the parish of Plaquemine, speaks in high terms of the above application in the early stages of milk abscess, or rather in cases where the inflammation of the mammary gland threatens to terminate in an abscess. If applied in the forming stage of the affection, he assures us it will seldom fail, especially when assisted by suitable constitutional treatment.—[*New Orleans Med, and Surg. Jour.*

Tetanus—Dr. Winston in the Nashville Journal, speaks favorably of heroic doses of opium in traumatic tetanus. He relates several cases in which that agent was employed to advantage, by beginning with one grain of morphia and increasing the quantity with each paroxysm.

Hemorrhage.—Hemorrhage of the temporal artery may be arrested easily, by using a common tailors' thimble and applying a compress over it. Hemorrhage following the extraction of a tooth, may be relieved by cutting a piece of dry sponge into the shape of a cone, and inserting it into the cavity, making the patient close his jaws at the same time. Hemorrhage from sloughing can be arrested by the local application of ergotine.

Anus, Prolapsus of.—Dr. Demarquay condemns Blandin's method of excising a portion of the sphincter, and simply removes a portion of the mucous membrane, using the galvano puncture in connection with it.

Mammary Abscess.—The extract of Belladonna spread upon a linen cloth in the form of a plaster, and applied to the breast, is highly recommended in this disease.

[*North Carolina Med. and Surg. Journal.*

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ARTICLE XXVII.

An Essay on the Physiology of Menstruation. By EBEN HILLYER, M.D., of Rome, Ga. (Read before the Medical Society of the State of Georgia, at the annual meeting in Madison, April, 1858, and ordered to be printed.)

The function of menstruation has always been a subject of much discussion among physiologists. Its nature, the causes which bring it about, and the purposes which it subserves, in the female, have never been clearly understood. There exists much difference of opinion, among scientific men, upon all these points, and there is no theory which has yet been advanced, which has received the entire support and approbation of the profession; so that it cannot be said that the physiology of menstruation is established upon any definite theory.

Menstruation may be defined to be a sanguineous discharge from the uterus of the human female, accruing generally at monthly periods, and continuing from three to six days: it is considered to be peculiar to woman. The females of other animals are supposed to be in an analogous condition during the period of heat, except that they do not have the discharge. We are told that there is an exception in a certain species of ape; by some, this exception is not admitted—they believe it to be a simple flow of blood from the rupture of some small vessel of the vagina, or uterus, and that it is not true menstruation.

From the accounts given us of the discharge in the ape, it is very probable that this animal is an exception with the human female, to the usual course of things, during the period of ovulation. Its early, or late appearance, depends much upon the climate, the constitution, the habits, and the hardness of living, to which the girl may be subjected. Those accustomed to a luxurious life, to an abundance of nutritious and stimulating food, sleeping upon down-beds, and in warm rooms, etc., will menstruate much sooner than one, who has endured hardships. In the one, the female is hurried on to maturity, as in the hot-house plant, under similar circumstances; in the other, from her mode of life, the privations she undergoes, etc., the discharge is delayed, as are also other developments, which are signs of her near approach to womanhood. Her reading of exciting books of romance, and an early association with the opposite sex, will tend to cause her to be early in a condition to menstruate. In warm climates, girls have this function to come on much more early than in a temperate or more northern latitude. In Greece, we are told, that girls are subject to this evidence of maturity at eight or ten years of age. As we proceed north the more do we find the function postponed. In Lapland, it is said, that it does not appear until a mature age, and that in some far northern latitudes, it only occurs in the summer, and then is very slight, and continues only for a little while. On the other hand, in a more southern region, it is much more profuse, and lasts for a longer period. In this latitude, the age at which girls usually begin to menstruate, is between the ages of fourteen and fifteen.

At the first period of menstruation, there is a very decided change in the constitution of the female. Her color is much improved, her checks are flushed, her countenance more animated and expressive. There is a decided change in the character of her conversation. She ceases to be amused with her dolls, and other childish playthings. Her sympathies are more easily aroused. Her affections more strongly exhibited. Her whole intellectual nature becomes peculiarly sensitive, and impressible. Her form is more graceful, the contour of her limbs is more perfect; her breasts expand, her voice becomes more harmonious, clear and distinct. With some, the discharge take

place without any premonitory symptoms, but generally, it is indicated by a train of unpleasant feelings, which announce its approach. For some time previous, the female is troubled with a sense of weight, pain, a bearing-down in the pelvic region. The vascular system is disturbed, and there is a determination of blood to the head, and to the mammæ.

The quantity of the menstrual discharge is also governed much by the habits, and station in life, of the individual. The emotions and passions of the mind will affect it; stimulating diets and drinks, or the use of a warm foot-bath, will increase it, as will any cause which tends to produce a plethora of the uterus. In this country, the quantity of the discharge is estimated at from three to six ounces during each period. At the approach of old age, this peculiar function ceases; the time of its cessation varies in different persons. As a general rule it may be assumed, that in those cases in which it commenced at an early period, it will disappear sooner, while in those in which it occurred after the usual age of puberty, it will continue longer in action. When the time draws near for the menstrual discharge to cease, it becomes more uncertain as to the periods of its return; also, as to the quantity eliminated. Sometimes it will miss one or two periods, or be put off two or three weeks, and then recur with increased violence, sometimes amounting to a dangerous hemorrhage. Then, perhaps, there will be several successive regular periods, during which it will conform to the functional habit which has been established; then, perhaps, another hemorrhage, after which it leaves the woman forever. This is a critical period in her life; it is known as the "change of life," the "turn of life," etc. In temperate latitudes, menstruation commonly ceases at from forty to fifty years of age.

During the menstrual period, the system of the female is more irritable than at other times. Any sudden or irregular check to the transpiration should be avoided; also, every kind of mental or corporeal agitation, or the process may be impeded, or hysterical or other unpleasant affections be excited.

The appearance of the menses is an evidence of the capability of the woman to become impregnated, and their cessation the loss of such capability; but there are exceptions to this rule. Morgagni cites instances of a mother and daughter, both of

whom were mothers before they had menstruated. Sir Everard Home mentions the case of a young woman, who was married before she was seventeen, and having never menstruated, became pregnant. At four months after her delivery, she became pregnant again, without menstruating. The fact that, with the cessation of menstruation, woman lose the power of bearing children, has been long known to mankind. It was known to the old patriarch Abraham, for when the angel appeared to him, and told him that Sarah, his wife, should bear him a son, he was loath to believe it, and gave as an evidence that it could not be so, that "the ways of woman had ceased upon her."

There is usually no menstrual flow during pregnancy and lactation; in fact, the cessation of the discharge is one of the evidences that conception has taken place; though it is not uncommon for the discharge to occur once or twice after conception; and I have known one or two instances in which it has continued, at regular intervals, throughout the period of gestation. Its absence during lactation is by no means constant, especially should the period of lactation be prolonged: but when it does recur, it is an evidence of an aptitude to conception. There has been an opinion prevalent among mankind, which probably had its origin among the Jews, that the menstruous blood of the female had malignant properties. A woman who had her menses upon her was considered unclean, and anything which she touched was polluted. In the time of Pliny, this notion was carried so far that her touch was believed to blight corn, to arrest the growth of grafted trees, to corrode copper, to destroy hives of bees, to drive dogs mad, etc., etc.

We are informed by Dr. Elliotson, that many in England believed, that meat would not take salt, if the process was conducted by a woman so circumstanced. There has been for some time past, much discussion among authors and teachers, as to the nature of the menstrual fluid; some contend that it is a secretion from the internal surface of the uterus; others insist it is a hemorrhage. Hippocrates declares it to be pure blood. Many, since the days of Hippocrates, believe it to be a secretion. Haller, Border, and John Hunter, besides other eminent and learned men of a later day, are of the same opinion. The doctrine that it is a hemorrhage, is at the present time the most

popular. The researches of Von Baer, Purkinge, Pruchet, Negrier, Bischoff and others, have rendered it clear to the minds of many, that the catamenial fluid is blood. From a careful investigation of the subject, I have no hesitation in saying that I am in favor of the hemorrhagic theory. To my mind the evidences of its truth are conclusive. I do not believe that there is a single argument which is used to prove that the fluid is a secretory product, but what can be refuted. Those who believe that menstruation is a hemorrhage, contend that the discharge is co-existant with, and a part of, the function of ovulation. The rupture of the Graaffean follicle, and the extrusion of the ova, are periodical.

Dr. Meigs says: "That at this time the ovaries receive a much larger supply of blood. That their vascular circulation and nervous intensity is much augmented; this state of excitement passing from the ovaries to the uterus and vagina, renders them also the seat of sanguineous engorgement.

"Under such circumstances, the uterus increases in weight, acquires a redder hue, is more sensitive, and sinks lower in the pelvis. Probably the glandular tubular matter of its body becomes thickened. From such engorgement and affluxion it is delivered by means of the mensual hemorrhage, which escapes from the vessels on the interior of the womb, falls into the vagina, and thence flows upon the outer surface of the external genitalia, and is called 'Menses,' 'Catamenia,' 'Show,' &c."

This doctrine is advocated and taught in many of our colleges. Its most successful advocates are Gendrin, Racaborski, Lee, Wharton Jones, Coste, and others.

That the menstrual fluid is a secretory product is contended for most strenuously by Dr. Dewees. He says—"I look upon this discharge as a genuine secretion from the mucous membrane of the uterus with which the cavity of that organ is lined."

The reasons which he assigns for his belief, are the same which are generally brought forward by those supporting the same views. He contends—

"1st. That the color of the discharge is between arterial and venous blood, being less brilliant than the former and more brilliant than the latter.

"2nd. It does not separate into its components.

"3rd. Does not coagulate, though kept for years, whilst other blood does, when exposed to the air.

"4th. Its odour is remarkably distinct from that of the circulating mass."

To his argument, that its color is between arterial and venous blood, we would reply, that this change is clearly owing to its admixture with the secretions of the cervix uteri and vagina. To his second and third, that it never separates into parts, nor coagulates when other blood does—we answer, that the power of coagulation is lost by the decomposition of the fibrin by the vaginal secretions. To his fourth, that the odour is not the same as blood—we answer, that it is not reasonable that it should be, passing, as it does, slowly through the vagina and mixing with its secretion, which has a peculiar odour, distinct enough to make the change, and to entirely neutralize the natural odour of the blood, We ascribe all the differences which he points out between the menstrual fluid and pure blood, to the effect of the mixture with the vaginal mucous, &c.

He asserts, further, that it is from the mucous membrane, lining the uterus, that this discharge has its origin. If so, why does this mucous membrane secrete blood globules?—Can this be possible? This is not all: there is fibrin found in the discharge. Does it secrete fibrin? and all admit that the other essential elements of blood are in the discharge. So now we have all the constituents of pure blood, all that is claimed to belong to it, *and secreted from a mucous membrane.* No other mucous membrane in the whole body secretes any one, much less all of these ingredients. If, then, this fluid be a secretion, containing these elements, it must be regarded as a perfect anomaly in physiology, forming a single exception to all the laws of secretion throughout the entire system. The uniformity of nature's laws forbid us to accept such a position.

The experiment of M. Brierre de Boismont proves that, when it first issues from the womb it has all the constituents of pure blood, and almost in the normal quantity. In conducting his experiment, "he adjusted a speculum to the cylinder of the cervix uteri during menstruation. A patient of his allowed this to be done. He thus carefully collected the fluid, as it passed from the speculum. It contained fibrin, and by analysis

was shewn to have *all* the constituents of blood, and nearly in the same proportion as blood drawn from the arm."

There can be no doubt but that the vaginal secretion will decompose the fibrin, and thus prevent coagulation. Women who have passive hemorrhages from the womb, rarely pass coagula, and when they do, it is when the hemorrhage has become so excessive that the quantity of the vaginal mucus is not sufficient to decompose the fibrin. Within the last twelve months, I have made enquiries of many women upon this point, and they all have told me that when they only had a slight hemorrhage they passed no clots. I know one woman who had a constant hemorrhage for months, and she rarely passed coagula. What does this prove? *That the discharge of blood, being slight,* the secretions of the vagina were wholly adequate to produce the changes alluded to by Dr. Dewees. These women do not say that they bleed—that they have a hemorrhage, but "they are unwell all the time"—that they have their courses constantly upon them. No man will admit that *this is so.* All will agree that, in such cases, the woman has a passive hemorrhage, unconnected with ovulation. Will it not appear from this, that the blood of a passive hemorrhage and the menstruous blood are similar?

It is now generally believed, that the cause of menstruation is from the excitement produced by the maturation and discharge of the ovulum from the Graaffean follicle. This is substantiated from numerous cases collected by Negrier, Robert Lee, Racoborski, and others, of females who die during menstruation, in whom the Graaffean follicle was recently ruptured, and the ovulum just escaped. It is universally admitted, that conception is more likely to take place just before or just after menstruation. Hippocrates remarked this fact. Boerhaave and Haller were of opinion that ovulation and menstruation were coincident. Both functions begin in the female at the same time, and leave her at the same time.

From all these facts, I am forced to believe that menstruation is caused by ovulation, and that it is a hemorrhage. There have been numerous theories advanced as to the purposes of the menses: none of them seem to have much weight with physiologists. The true purpose which nature intended them to

subserve in the female, is not yet clearly understood, and this point is still open for investigation, by those who are interested in studying this subject.

ARTICLE XXVIII.

Remarks on the Sources and Qualities of Honey. By PAUL DE LACY BAKER, M. D., of Eufaula, Alabama.

MESSRS. EDITORS:

In the October number of your valuable Journal I find discussed, "The question of Poisonous Honey;" and the importance attached to it by your interesting editorial, induces me to offer to your pages a few brief, and matter-of-fact, observations in reference to the subject.

The chief object of this communication is to combat the erroneous, yet almost universal impression, that bees "*extract*" honey from flowers, and that as some blooms possess poisonous properties, the honey *extracted* from them must, of necessity, be more or less deleteriously impregnated. This impression prevails with all, I believe, who have *written* about bees and honey, and it plainly exists in the minds of the three writers, whose articles, in reference to this matter, were set forth in this Journal. Now, I propose to show that honey is not the juice or nectary of flowers, and that it is never extracted or *collected from* flowers, but that like dew, it falls from the atmosphere, and is gathered by the bees and deposited in the cells of the honey-comb in precisely the same state in which it was collected, and that therefore, in all probability, honey, "within itself," is ever a perfectly innocuous substance.

The following experience forced me unavoidably to this conclusion:—About the middle of June, 1850, I was at an old hunter's house, in South-Western Georgia, preparatory to starting with him on a deer drive. This man was a great lover and minute observer of Nature; in his yard there was a great number of bee-hives, and he sold the honey in large quantities to the neighboring villagers. While at his house, I heard him complaining that there was a honey famine—that the hives were all ready for its reception, but that they were utterly destitute of

honey, and that the bees would soon starve. I asked him, how such could be the case, when it was then the middle of June, and the country full of *flowers*, and why the bees did not collect it? To my great surprise, he replied, that bees did not get honey from flowers, but that it "fell from the clouds." I was amused at the idea, but, of course, wholly skeptical concerning it. He, nevertheless, assured me of its correctness; and to my question, why did we always find bees at work upon flowers?—he answered that, they were gathering pollen, from which they made bee bread for their young, and that they were also collecting materials for forming the honey-comb and arranging the cells,—to convince me, he exhibited to me a hive, where, sure enough, existed the comb, cells, and all else, perfectly prepared, yet not a particle of new honey, and the old supply nearly exhausted. There was prevailing at the time a severe and protracted drought. Of course I had to believe what I saw, but was still an unbeliever as to the "honey falling from the clouds."

The evening of the same day we went fifteen miles into the wild woods, where our hunting party camped, far away from any dwelling. The Old Hunter and I slept under two beautiful young hickory trees, and at dawn the next morning he roused me up, exclaiming, with great enthusiasm, "the honey dew has fallen!—get up, you unbelieving Thomas, and see for yourself." Upon rising, the first thing that attracted my attention was the buzzing of bees, and on looking up to the top of the hickory trees, I saw myriads of them working, and coming and going; the limbs of the trees grew low to the ground, and upon its being pointed out, my astonished eyes beheld, for the first time, the "honey dew," on the leaves, and occasionally actually roping down and dropping from the pendant points of the smooth leaves; I tasted it frequently, and at once recognized the peculiar flavor of the common honey. I saw, and felt, and tasted it, and my mind was convinced by these means, which God had given, to lead it to correct conclusions.

The only observable difference, between this substance found on the trees, and honey obtained from hives, was, as to their relative consistency—the latter being somewhat more inspissated; but I have no doubt that the difference is produced by time alone, and that if a portion found on the hickory leaves had been col-

lected, and preserved in a test vial, its properties would ultimetely have been identical with that found in the hives.

My companion remarked that, in ten days all his hives would be ready for robbing, and that the next morning he would show me the bees working at home, and collecting honey from the leaves of the tall black gum trees that grew in his yard. He said, bees only collected it from the smooth-leaved trees of the forest. The same evening we returned to his house, and at daylight the next morning we went out into the yard, and the smooth-leaved black gums presented the same appearance as did the hickories in the woods on the previous morning. The bees filled the air, and I watched them fly from the trees straight to the hives—occasionally, those starting from the lower limbs would come to the ground before reaching the hive, and be compelled to take a second and sometimes, a third flight to gain it,—some of these we caught and killed and opened, and in every instance were their stomachs filled with the honey. I tasted it, and found it identical with what I saw the morning before. Through a glass in the hive, I saw them storing the honey—they invariably *backed* into the cell and deposited their burden.

In less than two weeks I was at this man's house to see the hives robbed. They were full to overflowing, with the most beautiful and luscious honey. If I recollect correctly, there still had been no rain.

I am aware that there are flowers, such as the common honeysuckle and woodbine, that contain a sweetish juice, not visible I think, but readily detected by the sense of taste, but the flavor is not similar to that of honey. It is true, as the editor of the "Druggists' Circular" remarked, that "the saccharine matter of the nectaries of flowers is not exactly identical with the characteristic properties of honey." I would also observe, that this juice occupies a situation so far down, in the long tube of the flowers, as to be out of reach of the bee, and only attainable by the long delicate bill of the humming-bird, or the proboscis of the butterfly; and even could it be attained by the bee, it exists in such minute quantities as to preclude the possibility of a swarm's collecting from such a source, twenty or twenty-five pounds of honey in the space of two or three weeks, as was evidently done by the hunter's bees.

Such is the experience, and such the observations that have taught me, that honey is not the "extract" or product of flowers; nor is it the result of any elaborating function of the bee's stomach, but, that it falls like dew, and is collected as ready-made honey, and requires no more extracting or elaborating process, than is necessary in collecting rain water in a cistern.

So much, then, as to "whether honey is, within itself, ever a poisonous substance;" but, what I have related, does not do away with the fact that persons *are* sometimes injuriously, if not poisonously, affected from or after eating honey; nor does it explain the why or wherefore of such accidents, but I think it *does* establish the fact, that such occurrences depend upon extraneous matters and accidental circumstances. If it could be ascertained, I think it would be found to be the fact, that whenever deleterious consequences resulted from eating honey, the honey-*comb* was masticated, and that no care was used in the selection of it; in this way, it would be quite possible to introduce into the stomach poisonous materials; for it is a well ascertained fact, that there *is* such a thing in the bee-hive, and among the comb, as "bee-bread;" that it is a brown, bitter substance collected from the pollen of *flowers*, as food for the young bees. This might be collected from poisonous flowers, and to it may pertain in full force your philosophic remark, that "the instinct of the bee may, in most instances, preserve him and his race from the toxic effects of the deleterious properties of flowers, and yet, what has served as his *nutriment* may be, for man, a most destructive *poison*."

I have no certain knowledge of the source from which are collected the materials for forming the comb, nor what the nature of those materials is; but I would sooner look to them as the cause of the mischief, than to the honey—knowing as I do, the source from which *it* is gathered. Again: in considering this matter, it might be well to remember, that it is common to find in honey—in the comb—dead bees, and that to the sting of each is attached a bag of *poison*, and should these be accidently conveyed into the stomach, *might* not the circumstance have some connection with the ill effects produced? Nearly all the cases of sickness or poisoning, *I* ever heard of, as occurring from the use of honey, resulted from eating wild honey obtained from

an old hollow tree, and where it was consumed incautiously and in large quantities, during the *frolic* of robbing the bee tree, which is generally done *at night*; and it should not be forgotten, that the cavities, of the trees containing the honey, are the abodes of bugs and spiders of very poisonous natures, which by the fall of the tree might possibly be crushed and mingled in the honey, and in that way be conveyed into the stomach. In addition to the suppositions already set forth, I would remark that these old hollow trees are frequently covered with a vine known as the "poison vine," and would suggest the *possibility* that, cut and bruised as it would necessarily be, in the fall of the tree, it *might*, in some way, be the cause of the mischief. The frequency of these cases of poisoning is by no means so great as to exclude the possibility of the agency of such circumstances in producing it.

It is, however, true, that these accidental and isolated cases afford no explanation of the effect produced upon large numbers, as for example, on the Grecian army, as related by Xenophon. In reference to such examples, all I can say is, that if such an effect should be produced among soldiery at the *present day*, by the use of honey, there would exist in my mind, strong suspicion, that there was mixed with it an undue portion of "*old peach.*"

The only way in which I can imagine that honey could, in itself, possess toxic properties, is in the same manner that the dews of certain latitudes and localities are rendered poisonous. This is said to be the case; if so, the same causes and circumstances rendering the dew nocuous, might also deleteriously impregnate the *honey* dew.

ARTICLE XXIX.

Remarks on Formulæ. By WILLIAM FARELL, M.D., of Rome, Ga.

There is, perhaps, no duty of the physician so badly executed as the writing of prescriptions. I trust, therefore, a few practical hints, from one who has had some experience in deciphering and guessing at these important documents, will not be entirely devoid of interest to those, who desire to furnish their apotheca-

ries, and the public, with formulæ, creditably written and in an intelligible form.

Since there is, probably, no better reason for writing prescriptions in Latin, than a sort of veneration for antiquity, it is greatly to be desired, that physicians would employ the English, without contraction, leaving out no important words, nor adding those that express nothing, and thus avoid the many glaring errors, to say nothing of the occasional fatal mistakes, which expose them to the just ridicule and contempt of the intelligent. If, however, there are those, who insist on retaining the ancient custom, let them make themselves sufficiently familiar with the language to write their prescriptions correctly.

In many works, whose practical precepts are justly entitled to high regard, we observe a jumble of English and bad Latin in the formulæ, disgraceful to the merest tyro. For illustration, the following recipes are taken from the pages of most respectable practitioners and professional writers:

℞. Hydrargys. præcip. alb. . . . ʒij.
Ess. *lem.* . . . . . gwt. x£.
Adeps præparat. . . . . ℥ij. M.

℞. Ol. Ricini. opt. . . . . f℥ij
" Terebinth Recentis. . . . f℥ss
Sodæ Bi. Carb. . . . . ʒij
Pulv. *Acacia.* opt.
" Sacch. Alb, . . . aa ℥j
Sps. *Lavendul.* Comp. . . . f℥j
Aquæ Camph
" Menth Pip . . . aa f℥vj
M Ft Emulsio.

℞. Copaibæ.
Tinct. Cubebæ
Syr. *Uva* Ursi . . . aa f℥ij
Pulv Acaciæ opt . . . . ℥ij
Aquæ Cinnam . . . . f℥xvj
M Ft Emulsio

℞. Pulv. Opii.
Pulv. ipecac . . . . aa ʒj
Sulphate of potass . . . . ʒviij M

The above formulæ are medicinally, and pharmaceutically, admirable, but gramatically, bad. In the first, the syntax would

have been greatly improved by the use of lim., and Adipis instead of "lem." and "Adeps."

In the second, the "Sodæ Bi Carb," by the use of the capitals, seems to consist of three distinct words. The word "Acacia," like "lem" and "Adeps," violates one of the simplest rules of syntax. "Lavendul" is a new coinage, neither English nor Latin, and must be guessed at, as no dictionary defines it. The apothecary arrives at the meaning of such mongrel crosses by the following sylogistical process of reasoning. The word lavender, and its Latin equivalent, lavandula, both mean the article we call lavender.—The word "Lavendul" lacks nothing of being the one, but what is contained in the other,—ergo, it must mean lavender also. The author has displayed his medical latinity by the use of this new version of lavender throughout his work.

In the third recipe, if "Syr. Uva Ursi" was intended for English, it is in the wrong place; if Latin, it is in the wrong case.

In the fourth, the simple recipe for Dover's powder is commenced in Latin and finished in English.

Much of our medical literature is spoiled with such formulæ as the above, to the discredit of the authors and the profession generally. Until we reform in this particular, we shall never hear the last of our dog-Latin. The evil is equally great among a large class of physicians, who, in their practice, in endeavoring to make a little display of their classical lore, couch their prescriptions in a jargon, neither English nor Latin, leaving the apothecary to guess at their meaning, which he will generally do, rather than ask an explanation, and incur abuse for want of proper qualifications.

The gross errors of some of these learned gentry are quite amusing. One, in prescribing the citrate of iron and quinia, "comes the Latin" with a grand flourish, after this fashion—"Ferri Quinia et Citras." Another latinizes Dover's powders thus: "Pulv. Dov. et Ipecac. Opii. Compos.", seeming much pleased with the length and mystery of his recipes. There are others, again, who pride themselves on the shortness and simplicity of their prescriptions. It was one of these who drugged his patients for a long time with saltpetre, by directing simply

"Nitre," when sweet spirit of nitre was intended. On learning the fact, he abused the apothecary, and made the matter worse by ordering "spirit of nitre," which, the apothecary's apprentice learned to mean nitric acid, and sent it out accordingly. This was too much for the doctor's nerves: he stormed the dispensing shop, and had the master of bottles arraigned for his grave error(?), who proved that he had learned a thing or two, besides the detergent qualities of soap and water, by producing no less authority than Wood & Bache, for what he had done. This medicinal doctor would have done much better to have ornamented his prescription with "spts. nit. dulc. eth.", which would have been within guessing distance of the true mark.

Now, all this confusion of tougues, errors and uncertainty, might be easily avoided by the use of plain English, and thus save the profession from a deal of wit, sarcasm and just blame, which all ages have been disposed to direct against it. Being no Latin scholar, and but little skilled in medical Latin, we intend, in our own practice (should we have the occasion), to write our prescriptions in English.

As above indicated, we do not seriously object to the Latin, if correctly written, yet must think reform in this particular desirable. We are glad to see that this reform has already been commenced by some of ths most respectable professional writers of the day, who are beginning to write their prescriptions either in good Latin or good English.

The Medical Uses of Wines.

This is a subject thickly clouded with all sorts of prejudices and pre-possessions, as is the discussion of most substances used equally by the sick and the healthy. Persons argue that what is good for themselves must be good for their patients. We have known a plethoric dietician, who himself loved lobster-salad and champagne in the small hours, advise a starveling dyspeptic to follow his custom of taking no breakfast till noon. So a hearty rough stomached doctor will declare one diluted alcohol just as good as another; the ascetic, or the reformed rake, will pronounce all equally bad; the gouty will dread all that is thin and acid; the aguish will have a predilection for Port.

It is very possible that prime wines may be made of all kinds, which may be equally and perfectly wholesome; but their rarity will always put them out of the reach of our patients, and what we have practically to think of in naming a wine for use, is at best a second or third-rate article. We must also choose those which are capable of being grown in quantity proportioned to their popularity, or the chances of adulteration are exagerated. When Madeira was on everybody's table, it could not be recommended to patients, for in nine cases out of ten it was either an inferier sort or a sour imitation. But now that it has gone out of fashion, a wholesome and often a very perfect wine is to be bought of that kind, and the adulterators expend their ingenuity upon Sherry. What we want is a liquor which is either produced in very large quantities, or is not sufficiently known to the million for it to be worth imitating.

The medical questions concerning the employment of wine will be put in the clearest light for exhibiting our real knowledge and ignorance, by considering separately the physiological effects on the human frame.

The effects may be practically included under the following heads: Exhileration, Nutrition, Arrest of Destructive Metamorphosis, Inebriation, Degeneration of Tissue, Derangement of Digestion. The three first are good—the three last bad; and the object is to secure the former, while avoiding the latter.

Exhileration is not merely a minor degree of drunkness. It may be produced by many things besides alcohol, and which do not inebriate—such as, for example, the essential oils, peppermint, onions, valerian, assafœtida, tea, coffee. Even eating, and the increased circulation of blood, produced the effect to some extent. Alcoholic fluids truly do exhilerate with the greatest certainty and rapidity, but not in direct proportion to the alcohol they contain. A glass of wine will raise the spirits of a healthy person as much as a glass of gin; a glass of fine claret as much as one of strong tavern port; and this is not merely from the pleasure of taste or association, for the same may be observed in fever patients, whose gustatory nerves are blunted by a thick coating of sordes.

The distinction is not only a subjective one, evident to the mind of the recipient, while it is incapable of demonstration to others. There is a real physiological difference in the effects which follow exhilarating and intoxicating doses—a difference which in its ultimate results, amounts to a complete contrast. The former *in*crease the amount of vital power rendered available in a given period, and the latter *de*crease them. Can there be a more perfect antithesis?

This is too important a matter to rest solely on the unassisted

senses of patients or observer, and it does not do so, for the admirable experiments of Dr. Böcker having submitted it to the proof of chemical analysis. Though the whole series of his investigations into the action of alcoholic stimulants bear directly on the present subject, they are too mutually dependent on one another, and too lengthy for quotation. The general results, however, may be stated as follows:

1. The special action of alcoholic drinks is to arrest destructive assimilation—to stop the over-active processes of life in their effects upon the organism; so that, for a certain period during the stay of the alcohol in the system, less urea, less phosphates, less water are excreted by the kidneys, less carbonic acid by the lungs, and less digestion goes on in the alimentary canal, showing that the muscles, bones, nerves, &c., are not getting rid of their effete tissue, but retaining it, and making use of it as far as possible.

2. But at the same time they give rise in the body to a defensive *reaction*, which is prominent, first immediately after taking the dose, then gives place to the special action, and on this ceasing is again manifested to a greater extent.

3. So that if a suitable quantity be taken, and if both action and reaction are allowed to exhaust themselves before the dose be repeated, more manifestation of life, represented by more excretion and more consequent renewal of the body, takes place in a given time with the alcoholic drink than without. There has been a positive gain in vitality.

4. But if such a large quantity is taken at once that the reaction is overpowered, or if it is arrested by a continuous repetition of the dose, the manifestation of life is kept down; the body is not renewed, because its effete particles are not removed, and the amount of vitality must certainly be reckoned at a loss.*

The first named state is Exhilaration, in which the alcohol may be fairly called a food or medicine, a medicinal food or dietetic medicine, for body and mind. The second state is Intoxication, when it is a poison to both.

Now, the exhilarating effects of diluted alcohol are very much increased by its admixture with sugar, extractive, vegetable essential oils, ethers, and the allied substances which have been described as producing the aroma and bonquet of wines. With a quantity of alcohol which taken alone would be inefficient, a delicate wine is able to produce a decided impression upon the nervous system. When, then, this is mainly sought,

* Beiträge zur Heilkunde, von F. W. Böcker, vol. i., sect. 6. Weingeist. We have introduced the name of this author again in our heading list, because he, and indeed all physiologists of the Schultz-Schultzenstein school, are much less known in England than they deserve. A collection of translations and abstracts would make an admirable volume for the new Sydenham Society.

as in cases of mental depression, hypochondriasis without bodily ailment, nervous exhaustion, over-anxiety, hysterical fainting, vomiting, and the like, or when wine is wanted merely to smoothe down the roughnesses of daily toil, we must remember that the good result may be obtained without the evil; and we can obtain it with least chance of the evil by selecting liquors richest in their peculiar scented constituents. Bordeaux, Champagne, Rhine, and Moselle wines offered a variety of choice, the first being the most perfect and suitable to the greatest number of these cases; whilst the others have certain inconveniences, hereafter to be mentioned, which often forbid their use in the special case to be prescribed for.

The beneficial effects on the nervous system are increased by effervescence; thus, sparkling Champagne will sometimes have a most magical effect in stopping vomiting in cases accompanied with much nervous depression. And even in health, the greater exhileration caused by genuine effervescing wines is notorious. The physiological explanation of this result is not very clear. It cannot be due to the carbonic acid alone, for the inhalation of this gas tends to completely oppose consequences. Perhaps the sudden physical change in the liquid during the extrication of the fixed air developes ethers which in a nascent state are more potent than at other times. Perhaps other gasses are generated, whose properties are in themselves exhilarating. In the Champagne sent into Wurtemberg from Rheims, Baron Liebig found that for every volume of carbonic acid there were two volumes of protoxide of nitrogen* (laughing gas); and it was assumed, without absolute proof, to have been artificially introduced for the purpose of augmenting the joyous results of the bottle. The subject demands chemical investigation on purely scientific grounds; and it would moreover, be useful to know if we could thus at will increase the required exhilaration, while decreasing the quantity of alcohol or carbonic acid.

The gladdening effects of alcohol are augmented by its mixture with other constituents of wine, but its intoxicating or poisoning effects are diminished, and thus more may be taken, with its advantages and without its evils. So that, for example, if a man drinks a pint of Mr. Brande's Marsala, he gets a somewhat larger dose of spirit than there is in half a pint of gin,† but it is unnecessary to say, without the same bad consequences. This is partly to be attributed to the presence of the ethers‡ and

* Medical Times, Nov. 1850.

† Marsala contains 26·03 per cent. of absolute alcohol (Brande); Geneva, 49.4 per cent. (Jones).

‡ The disinebriating influence of ether is shown by its being actually a remedy for drunkenness. Twenty or thirty drops taken neat on a little oil will restore to temporary sobriety. The knowledge of this fact has been popularized in France, by its forming a point in a wicked railway novel (Le Troup de l'Enfer), the author of which perhaps owed it to M. Batilliat (Traité sur les Vins de la France, p. 190).

sugar, but also in a great degree to the intimate combination of the alcohol with extractive and albuminous matter, so that it is not absorbed immediately by the membranes, but gradually and during a process of digestion. It is obvious that its local effect on the mucous surfaces and viscera must be thus much modified, and a powerful argument is afforded in favor of the use of wine instead of brandy for invalids.

Nutrition is an indirect effect of wine. There is shown by chemical investigation to be very little substance in it capable of building up the body. The phosphates and albumen are more readily found elsewhere, as Franklin has imprinted on our memories by his comparison of a penny roll and a gallon of beer. But alcohol seems to render the alimentary canal more ready to absorb nutriment. Farmers find this, and always try to put some waste beer or fermenting grains in their pig troughs. Physicians find it, too, and give their patients cod-liver oil in a glass of sherry when they would have it fatten quickly. The effect, however, is probably confined to oleaginous food and the adipose tissue, for the digestion of albuminous matter by the gastric juice is certainly impeded by alcohol.

Hence we gain the following rules concerning the administration of wine as an aid to nutrition:—1st. That the alcoholic contents are those of principal importance, and that the amount of solid or nutritive matter in the wine makes little difference. 2ndly. That we may hope help from it in increasing adipose tissue, but not muscle. 3rdly. That as its agreement with fatty food is the prime object, we must avoid those wines which are likely to make such food unassimilable, as, for example, by making it rancid; and therefore, 4thly. That sound wines with a small proportion of acid to their alcohol, and but little body to cause re-fermentation, should be selected; the types of perfection may be considered the dry Spanish wines, Amontillado and Manzanilla. And, 5thly. They should be taken along with the fatty food itself, or immediately after it.

The arrest of destructive metamorphosis, or what has been picturesquely called "the moulting of the tissues," is unquestionably the most important of the medical uses of alcoholic liquors. By them we are enabled to stay the progress of interstitial death in low fevers, till the period of the zymotic poison's virulence is passed, and it has either been evacuated or become inert. By them we can check the exhaustion of the body through excessive secretion, as in cases of chronic catarrh, ulcers, abscesses, amputations, &c. By them we can diminish, in ordinary dietetics, the wearing out of the body by the over-worked mind, which in this busy metropolis throws so many into the hands of the physician. But in the wielding of this two-edged sword the

greatest judgment is requisite, lest we carry the effect too far. The destruction of effete tissues is part of life, and necessarily precedes constructive renewal; if, then, we check it too far, interstitial life is diminished, and the system is overloaded with matter incapable of vitality.

It is better, therefore, to give alcohol in a diluted form, even when we wish to produce its most decided action, as in typhus fever, for example. And it is better to give it combined, as it is in wine, with other substances of partially corresponding action, than to administer it merely diffused in water, as is sometimes done for economy's sake. Sugar, we know from Dr. Böcker's experiments, has a special effect in limiting the destruction of tissues containing phosphates, tissues of no less importance than the bones and nerves. And it is likely that similar investigations into the physiology of ethers may show some special effects belonging to them. The acids, too, and the extractive in wines, seem to prevent better than water those injurious effects upon the mucous membranes which spirituous liquors exhibit. There is, then, no extravagance in preferring wine to brandy and water in the management of low fevers in hospital and parish practice.

This is not the place to discuss details in the mode and period of administering wine in acute complaints. But one remainder may be deduced from the view taken of its physiological action —viz., to allow intervals to elapse, during which its effects may subside, and the system recovered for a time its metamorphoses, so that the effete tissues may have a due exit. The night is a convenient time for this in general; but if, from any cause, that is considered inexpedient, some hours of corresponding duration should be selected, during which the administration of stimulants may be discontinued.

The wine chosen for fever cases is usually Port; but the rarity of really good Portugal wine, and the excessive badness of all low-priced imitations now in the market, render it daily more and more incumbent upon us to have substitutes at hand. The best in the London market seem to be the red Spanish wines, Beni Carlo, and Cadiz; especially the former, which, indeed, is often mixed with spoiled Portuguese wine, and sold as port. It may be had in the wood at a low price, considering its strength, and is highly to be commended for hospital use in a diluted state.

Poor people, however, are not the only patients supplied with Port wine unfitted for the sick room. The prepossession in favor of antiquity causes many cellars in wealthy houses to furnish nothing but a damaged article. To find fault with a bottle that cost a great sum a great many years ago, is flat

heresy; and the better way is to give it up at once, and order your patient a good full-bodied wine of a different nature, such as Madeira, Burgundy, or Hermitage.

Inebriation is a terrible word to meet with in periodical literature. It opens up a prospect of so many social and political questions, that the reader is apt to close the page in despair. He shall be let off here with a simple remark derived from wayside observation—viz, that in all countries where wine is plentiful and cheap, drunkenness is almost unknown; where it is most expensive, that vice is at its maximum.

Degeneration of Tissue, as a consequence of drinking, appears to be a chronic state of that arrest of metamorphosis which has been already discussed as a remedy for disease. The effete tissue remains as a useless burden mixed up with the healthy, and is finally converted into the least vitalized of all the organic constituents of the body, oil or fat. Careful and valuable observations have been made by Dr. Böcker, on the abnormally retained blood-discs in the circulating fluids of habitual spirit-drinkers, and the appearance of the degenerated hearts, livers, and kidneys of these miserable suicides is familiar to us all.

Degeneration arises from the arrest of metamorphosis being too long and continuously kept up. Hence there is little danger of it in acute cases, where the large quantity of alcoholic remedies we find it expedient to administer is necessarily diminished as the disease recedes, and during convalescence is reduced to the ordinary allowance of health. But in chronic cases it is often a matter for serious consideration whether we shall employ an agent capable of doing along with the good we intend, an evil greater than that originally to be combated. If the dose of a stimulant be repeated before the arrest of metamorphosis has ceased and the reaction of the system has begun, a second arrest indeed takes place as before; but the postponed reaction is augmented in force each time it is delayed, and when it occurs at last, it is so painfully depressing that it becomes more and more difficult to resist the instinct to put it off, and in the end it is rarely dangerous to do so suddenly. This is the short history of confirmed tippling; and often we fear it may be traced in its origin to the carelessly worded advice of some medical men. Science or practice has taught him that alcoholic action will alleviate certain morbid phenomena, and he recommends it without due warning. The patient knows no harm in alcohol except drunkenness, and so long as he avoids that vice, thinks he cannot keep up too steadily the agreeable relief he experiences.

Alas! much safer for him would be the occasional debauch of a man he despises as a profligate, than his own continuous

steady course towards death. A drunken bout brings its own cure, and is usually allowed to be followed by reaction afterwards; but the most alarming symptom in a tipler is that he *cannot* get drunk. Day by day there is a little less and a little less life in his system, till at last his degenerated body is fit for burial.

Now, the result above described are, practically speaking, unknown as the consequence of wine; it is spirit drinking that leads to them. There are several reasons for this, independent of the chemical differences of the liquors. Wine is rarely used except at the principal meal, or as a sort of medicine in measured quantity at other hours, so that the effects have time to pass away before another dose becomes due, and no craving for increased quantity is experienced. In fact, men go on taking daily for quarters of their life the same identical number of glasses, feeling daily the same comfort, and never finding it necessary to increase the quantity. But the spirit bottle is opened when its owner "feels to want it,"—nay it is very often carried about the person under the appropriate name, as regards its deadly results, of a "pocket pistol".

We have been in the habit, in insurance practice, of omitting the usual inquiries about "sobriety" and "temperance", &c., which give offence and elicit no information, and substituting for them the simple question—"Do you ever take spirits *between meals*"*?* This is something definite, not to be shirked, and if answered in the affirmative should lead to rejection.

The subject of spirit drinking takes up more space in this article than our promise of avoiding temperance common-places perhaps led the reader to expect. But we have two excuses: one is, that it occupies quite distinct ground from the question of drunkenness, has much more to do with the production of disease and is therefore much more the province of a medical reviewer. The other excuse is (we blush to write it), that no class of persons who have received a liberal education are so often addicted to it as medical men. Londoners were shocked two or three years ago at the suicide of a highly moral and intellectual surgeon, who left a paper attributing his despair to the habit of secret tippling; but they would have been less astonished had they known how many practitioners all over the country suffered from the peculiar dyspepsia of alcoholism. The long robe and her Majesty's uniforms are occasionally disgraced by inebriation, *clergymen* may sit too long at the bottle, but spirit tippling seems left to medical men and the classes below them. They have many temptations: hard mental and corporeal toil, sudden calls for exertion when tired, broken rest, irregular exposure to cold and wet, weary waiting in lone farm-houses for lingering labours,

the dull company of ill-educated persons, the wish to be sociable and not seem proud, are a few of them. Into these temptations they do fall, and that on a large scale, especially in rural districts.

To require of an unfortunate patient and brother practitioner that he should give up at a blow that alcohol which instinct and science agree in teaching him to be necessary, is too great a demand. If he becomes a teetotaller, he would probably die all the sooner. Hard common-places about the virtue of temperance and the evils of its opposite, produce no more effect than schoolboy's themes. What he wants is—first, kind sympathy with his *misfortune*, and second, a rational means of getting rid of it. Now, nothing contributes more towards the latter than a clear sketch of the chemistry and physiology of the subject, and a belief that the advantages of alcohol may be had without its disadvantages. He should reflect how wine differs from the spirits which are in it; and again, how it is not so much the quantiey, but the frequency of the dose, which is hurrying him to the grave and his children to poverty. The most complete relief is the substitution of wine for spirits. The very economy which was perhaps the first origin of the habit, will prevent excess in the dearer liquid. If that cannot be accomplished, let at all events drams between meals be avoided as poison; and let the addition of sugar, and flavors in the shape of lemon, fruit, or a few drops of nitric ether, make the drink approach a step nearer to the juice of the grape, and be daily more and more diluted.

Among the *Derangements of Digestion* arising from wine, it will not be necessary to dwell long upon the immediate consequences of a debauch. It is usual, in army medical returns, to report it as "febris," as indeed there is, truly enough, an ephemeral fever, but, like other fevers, it works its own cure, and civilians are not in the habit of applying to it the same euphemistic nomenclature. But, without being taken in such quantity as to be considered an excess as regards alcohol, wines will sometimes cause a disturbance of digestion, which prevents our sanctioning their use in cases where otherwise we might be willing or anxious to do so. This is always accompanied by the presence of a large quantity of acid in the alimentary canal.

In some instances this excessive production of acid follows equally all sorts of wines, and even spirits. Then it is due to the mucous membrane of the stomach being so morbidly sensitive that it becomes irritable and temporarily inflamed, so that it refuses to secrete its solvent juice, and to perform with sufficient activity the peristaltic movements. Hence the alimentary mass undergoes the acetous and lactic fermentations, instead of being digested. These patients ought to abstain from all alcoholic drinks whatsoever till cured of their morbid condition.

More commonly it follows only wines, and some sorts of wines more than others. These cases deserve much thought, because they are in danger of falling into the snares of spirit drinking, and also because very often the patient's system especially requires a stimulus which yet he cannot take without inconvenience. When we reflect on the large quantity of free acid existing in wine, we cannot be surprised at its causing some trouble in the stomach. If a man drinks half a bottle of hock, he swallows one hundred grains of acid, equal to five tablespoonfuls of lemon-juice; in a pint of claret, eighty grains; in sparkling champagne or Madeira, the same amount; in port, if he takes even this comparatively large allowance, he does not get above sixty grains; but then in the three last there is nearly an ounce of sugar, which, mixed up with the food, has a strong tendency to ferment, and turn into a fresh portion of acid at a more advanced period of digestion.

Here chemistry steps in with valuable aid. In the simple instrument of a standard solution of caustic soda, we possess a means of testing rapidly the whole acid contents of wines, and rejecting any which are thus declared unfit for our patient.

But it makes some difference what sort of acid is contained in the wine. Acetic is to many stomachs much less injurious than tartaric, and it is found that the proportion of these to one another varies very much in the products of fermentation. Thus, in Madeira nearly one-third of the acid contained is acetic; in port, only one-fourth; in claret, one-fifth; in champagne, one-seventh; and in hock, not one-eighth, whilst the rest is the least digestable, tartaric, or its ally, racemic.* Besides these, the tannic must be allowed for, small indeed in quantity, but powerful in operation, as its use in medicine shows.

Of course, both the quantity of acid and the proportion of the several acids vary within certain limits, in different specimens even from the same vineyard, and still more in growths classed under a common name in the market. So that to give an opinion as to the fitness of a peculiar wine for drinking, we must carry our investigation rather farther than merely the application of the soda test.

The acetic acid may be estimated by distilling it off from the wine slowly, at a moderate temperature, so as not to decompose

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* See Mulder, p. 202. In 100 grammes of wine there were—

	Milligrammes of acetic acid	Milligrammes of tartaric, racemic, &c.
Madeira	167	310
Rhine wine	66	480
Port	95	283
Bordeaux ordinaire	86	390
Champaigne	64	408

the extractive, and measuring it by the standard alkaline solution.

Sugar in wine which is to be taken by itself as a medicine, is often beneficial by making the acid and alcohol less immediately irritating to the mucous membrane; but in that which is to be mixed with food it is very apt to increase the generation of acid in the stomach or cæcum to an injurious extent, generally two or three hours after meals. If an examiner of wine is disposed to reckon the absolute quantity of sugar, he will have to go to the expense of Soleil's saccharometer (which costs, with its accessories, not much under £20), and even then may have his analysis doubted by a chemist†; but a fair comparative valuation may be made by first neutralizing the acids with lime, and estimating the sweetness which remains by the taste. This is done by measuring the quantity of water which requires to be added before all trace of it cease to be perceptible to the palate.

The injurious effect of ill prepared effervescing wines is easily explained by the large quantity of undecomposed ferment they contain. This is set in action by the warmth of the alimentary canal, and can hardly be overcome even by the strongest digestive powers. Flatus and acidity are its normal consequences.

The proverbial unwholesomeness of "mixed wines" is not explained by chemistry. In most cases the evil may be traced to the temptation to increased quantity, or to the taking of some sorts which, even if adhered to throughout the meal, would be equally hurtful. In fact, the precept of keeping to one wine seems to rest on the same principle as keeping to one meat.

[*Brit. and For. Medico-Chirurg. Review.*

Paralysie Générale. By M. H. Ranney, M.D., Resident Physician of the New York City Lunatic Asylum.

This disease has been but recently discriminated from other forms of paralysis. The attention of the medical profession was first called to it by Esquirol, within the present century. It may have been confounded, perhaps, with the results of apoplexy, ramollissement, tumors, tubercles, &c., of the brain. It is a singular fact, however, that its frequency has greatly increased during the last sixteen years, as will be seen by reference to the various annual reports of the Superintendents of American Hospitals for the insane. In the report of the McLane Asylum, for the year

† The fallacy in Soleil's polarizing saccharometer as a quantitative test is, that uncrystallizable sugar rotates the ray to the left, whilst glucose and cane sugar rotate it to the right. So that a sample of sherry, for example, with its usual allowance of the uncrystallizable, might be so adulterated with white lump, molasses, caramel, or malt, as exactly to balance and appear to contain no sugar at all.

1844, Dr. Bell remarks, "I have regarded it as a somewhat curious fact, that it is only within the last three years that this disease has been admitted to this institution. As late as my visit to Europe in 1840, it was unknown within our walls; nor, after seeing it so often manifested there, can I recall any case in our register which would at all meet its characteristics, rendering it certain that it was not overlooked. Since that period, however, we have abundant evidence that it is not a form of disease peculiar to other countries."

The recent investigations by Calmeil, Foville, Rodrigues, Falret, and others have thrown much light on its nature and character. The name adopted by Esquirol does not give a correct idea of the disease. There is not usually complete paralysis, but the power of volition is partially lost, so that muscular action is imperfect and unsteady.

The characteristics of this disease are found in the paralysis, and in peculiar mental aberrations. Either the physical or the mental affection may be antecedent in its manifestation.

The first paralytic symptom is an affection of the muscles of the pharynx and larynx, which changes much the tone of voice and produces a difficulty in articulation. There is a peculiar "cracked" husky tone, and a hesitancy between syllables and words like stammering. A slight excitement produces a spasmodic action of the muscles of the face, particularly about the corner of the mouth and eyes. The tongue when protruded is tremulous, and thrown forward by successive efforts resembling the spasmodic action observed in chorea. The face becomes expressionless; as the disease progresses all of these signs become more marked, and a difficulty occurs in locomotion. The patient totters in his gait, and if he attempt to change suddenly his direction, is likely to fall. In falling he makes no apparent effort to recover himself, and his head stikes with equal force as other parts of his body. Deglutition is gradually impeded, and eventually there is a loss of control over the sphincters. In most cases epileptiform convulsions follow at intervals, varying from one week to three months, each of which seem to lessen the vital power of the system, and to increase, temporarily at least, the extent and degree of the paralysis.

The mental changes are marked both in the susceptibility and intellect. The patient is restless, constantly moving from place to place, peevish, fretful, and impatient of contradiction. He is ever discontented with his present condition, although the past and future afford unalloyed happiness. Opposition to his wishes is soon forgotten. Recent events are generally but feebly retained, whilst the past affords to his mind images of unparalleled success, and the future glows with day dreams of great achievements to be performed, or noble actions done. The disease may

assume the form of mania, monomania, or dementia. The most prominent and usual characteristic is generally exaltation of the imagination. The belief is permanent, that he excels in everything, and possesses strength, wealth, influence, and intellectual capacity far beyond that of any human being. They who were previously endowed with a brilliant imagination, and had received high mental culture, present visionary schemes of the most attractive character. Their language is well chosen, and their style highly poetical. They project ships on an immense scale, and palaces of pure gold, control kingdoms, and discover the secrets of Providence. Great subjects alone occupy their attention. The following extract, from the register of the New York City Lunatic Asylum, illustrates this phase of the disease. The imagery of the delusions is entirely that of the patient, and his style and language is retained as far as practicable.

"H. H., born in Virginia, aged 32, admitted 1853. After receiving his degree at Yale, he was supplied with an abundance of money, and unrestrained in the gratification of every desire. His funds becoming exhausted, he endeavored to obtain a living by his own exertions, but with indifferent success, on account of the impairment of his mind and health through the influence of his former habits. His system is very feeble, and a large ulcer upon one of his limbs renders him almost helpless.

"The imagination of H. H., naturally active, is morbidly exalted. He believes himself to be the 'Earl of Warwick, the King-Maker,' and adds to the singularity of the delusion, by the conception that he is fourteen feet high, and large in proportion. He wishes to purchase the asylum and all its contents, proposes to bestow the most magnificent presents and the most extensive estates upon the physicians, and signs papers to that effect. Nothing is beyond his reach by reason of its expensiveness; nothing too good for his friends. His clothes are of the finest cloth, lined with the most costly satin, decked with intricate embroidery, and ornamented with buttons of enormous diamonds. For him magnificent pictures adorn the walls of mansions, which the highest architectural skill has reared. The souls of Praxitiles and Canova shine through the marble monuments of their art which fill the corners of his libraries. Through the stained-glass window, shaded by the heavy folds of Genoa velvet, the light falls upon the most rare editions of the works of those men, whose literature is eternal.

"Carpets, the delicacy of whose tints rival those of the summer cloud at sunset, cover the floors of his apartments. Tables inlaid with precious stones, which cause the envy of the brightest stars of heaven, uphold wines sparkling upon the brim of golden goblets, as if anxious to kiss the lips of the drinker, and viands which have been prepared with the consummate skill of the high-

est culniary art. Flowers of supernatural beauty, whose delicate perfume angels might use on their spotless garments, fill his conservatories.

"Among the spreading branches of the trees of his pleasant gardens birds of brilliant plumage and unrivalled song pour forth their sweet voices in harmony with murmurs of fountains, whose silver-edged bubbles ripple over pearls and garnets, and whose banks are clothed with the herbage and verdure of the tropics".

Even they who previously possessed but little imaginative power evince now the most lively conceptions. Matters of common occurrence may occupy the attention, but are so vividly and fancifully described as to render it difficult to detect the real nucleus of fact. The exhilaration produced on certain individuals from stimulating drinks bears some resemblance to the expansive ideas in this form of paralysis. These delusions continue until the disease has progressed to a low state of dementia. There is an occasional exception to the general rule of exaltation. In such cases the mind seems depressed and enfeebled from the commencement of the attack, and the paralytic symptoms are very strongly marked.

The presentation of symptoms and the diagnosis being the principal object of this paper, I select a case from Esquirol, in which the prominent characteristics are given. "M. L. D., thirty eight years of age, had participated in the last campaigns of the empire, and was elevated to the rank of colonel after the restoration; uniting to every physical and intellectual quality all the advantages of a lofty position in society, and a large fortune. He was of the opinion that he had experienced injustice on the part of the government. His self-love was deeply wounded, and after many days of insomnia he gave himself several thrusts with a knife in the region of the heart. He was promptly secured, and his services were but for a brief period discontinued. From this time he expressed with bitterness his dissatisfaction, but was in no respect less exact in fulfilling his duties as a commanding officer. Two years subsequently he has an attack of cerebral congestion, for which he is largely bled. Two days later he has a second attack, more severe than the first He remains excited, talks much, is agitated, irritable, and exacting. He does not sleep, and after a third attack a true mania is developed. The delirium is generally attended with agitation and notions of grandeur and fortune. He commits a thousand extravagances, remains almost naked, talks incessantly, cries aloud, orders a thousand things at once, is impatient, and commits strange and imprudent acts, which compromise his life, though he entertains no idea of suicide.

"Several physicians are called in consultation, and the maniacal state of the patient cannot be denied. His age, however, and the brief duration of the disease, offer to the counsellors expecta-

tion of a cure. I affirm that the patient will never recover; 1st, because three severe attacks of cerebral congestion had preceded the maniacal state, and that, consequently, there was some degree of cerebral lesion; 2d, because, notwithstanding his excessive loquacity, certain words are imperfectly pronounced, and because his gait, although lively and active, is uncertain. I added, that active medication would hasten the progress of the disease; that the country, exercise, a severe regimen, and the repeated application of leeches to prevent new congestions, appeared to me to be the only proper course. One of the consulting physicians did not concur with me in my unfavorable prognosis, and proposed certain tentative measures.

"After a month spent in fruitless attempts, we were obliged to renounce all hopes of cure. Paralysis had progressed and dementia was confirmed—the patient retaining incoherent notions of grandeur, which persisted for more than two years. He regarded himself as the possessor of several provinces and kingdoms; distributed palaces, and gave away millions, and commanded also an army of giants. His cavalry was mounted upon horses of gigantic size; he possessed palaces of diamonds, and his stature was 20, 30, and 40 cubits in height. He talked both night and day; now in a low tone, now loudly. He also uttered loud cries. Beset by hallucinations of hearing, he listened to the voices of imaginary beings, and replied to them, boasting of his person, disputing with and even abusing them. He recognized the members of his family, and addressed them with amiability and politeness; but after a brief interval, however, resumed his habits of constant conversation. He was sent to the country".

Paralysie générale occurs more frequently among males than females; in fact, among the latter it is of rare occurrence. No good reason has been assigned for this—the predisposing and exciting causes to which the disease is referred being found in operation in both sexes. At Charenton, of 619 insane (366 men and 253 women) there were 109 cases of general paralysis, (95 males and 14 females). Into the Asylum at Halle, in the Tyrol, 257 men and 181 women were admitted, among whom were 28 cases of general paralysis, (22 men, 6 women). In the New York City Lunatic Asylum, of 5,092 (2,391 men, 2,701 women) under treatment within the last eleven years, 85 deaths have occurred (76 males, 9 females) from this disease. It is a disease of adult life, rarely occurring before the age of twenty-five. Those of a sanguine temperament are more liable to an attack, especially if of a full habit, with a tendency to apoplexy. It occurs to a great extent in the class called *good livers*, who remain up late at night, and indulge in suppers with a free use of wine, the mind at the same time being actively engaged. Venereal excesses, a free use of mercurials, syphilitic diseases, a hereditary taint of insani-

ty, or scrofula—in a word, everything that tends greatly to deteriorate the blood, impair the constitution, or lessen the vital power of resistance, may act as a predisposing cause. The exciting cause is generally some sudden mental shock—a loss of friends or property, great anxiety in business matters, or it may be an indulgence in very great excesses.

There are various diseases with which it has been and may be confounded. "Ramollissement du cerveau" has some symptoms in common with it; but the continued pain in the head, occasionally vomiting, rigidity of the flexor muscles of the limbs, and stupidity, instead of exaltation of intellect, seem sufficient to distinguish it from general paralysis. In the last-named disease there is also a softening of the brain, but it is the cortical portion that is particularly affected, and this gives rise, usually, during its progress from irritation to softening, to the peculiar mental symptoms that have already been described.

Cerebral hæmorrhage is usually accompanied by paralysis of a hemiplegic character, and its sudden invasion with the ordinary apoplectic symptoms is a distinguishing feature in its diagnosis.

Inflammation of the brain or its membranes, as well as the affections of the spinal cord, might lead to error from superficial examination, but the rapid progress of the one and the paraplegic character of the other, without any peculiar mental aberrations would indicate the nature of the disease. Delirium, arising from inflammation, differs essentially from delusions. There is generally a low condition of the system; the mind is not occupied with external objects, but seems to retire within itself, and in a half comatose state is manifested by incoherent mutterings without, ever exhibiting the reasoning power of insanity.

Paralysis caused by mercury, alcohol, or lead, may be distinguished by a careful study of the causes and symptoms, the muscles of the extremities being in these cases at first affected either with numbness, trembling, or a complete paralysis of the extensors.

Morbid growths of the brain, such as tumors, (malignant and non-malignant,) tubercles, &c., present many features in common with general paralysis. The character of the morbid growth can be inferred only from the particular diathesis, or by the external manifestations, the paralytic and mental conditions involved in them depending principally on compression and inflammation, with its sequences. The change occurring in the mental faculties is that of general enfeeblement, presenting eventually the ordinary characteristics of dementia. The last stage of general paralysis closely resembles this, and its discrimination requires a knowledge of the previous history and a careful analysis of the successive order of the paralytic symptoms.

The following is selected from the case book of the New York

City Asylum, as an illustration of this error in diagnosis. It had been considered as the effect of a morbid growth in the brain, previous to admission. "C. L S., æt. 36, by profession an actor, was on the 10th of December, 1856, admitted into the Asylum. When admitted, he was found to be completely demented, paralyzed, unable to walk or stand, and with difficulty to swallow. He lingered nine days, when the disease terminated in death.

"The following history of the case, communicated by his brother together with the post-mortem appearances of the brain, indicate the form of the disease of which the patient died to have been *paralysie générale.* His brother states that he had always been a temperate man. Some two years since, in consequence of domestic and business troubles, he passed through a period of great mental anxiety and excitement.

"A year ago last October, while in Philadelphia, he exhibited strong symptoms of insanity of a maniacal character, succeeded by a condition of prostration. Soon after recovery of physical health, a change in his character was noticed; he became irritable, impatient of contradiction; at times despondent, and then very sanguine of success in his profession and business. His time, following such recovery, up to April last, was spent in forming business plans and studying the important characters of Shakespeare, in the belief that he was to become a prominent actor, although his friends knew him to be incompetent in this respect from the great impairment his memory had lately suffered. When slightly excited, twitching of the corners of his mouth and tremors of the muscles of his face were noticed; his tongue was protruded with difficulty, and his voice altered and 'cracked' in its tone. All of these symptoms increased in intensity about the beginning of April last, when on the 8th of the month, he had a convulsion of an epileptiform character, as described by his brother, followed by prostration. From this he afterwards gradually improved until August last, when he had another severe convulsion, followed by loss of consiousness. For several hours previous to this last convulsion, it was noticed that his left arm had become paralyzed. He was then taken to a hospital, and for a short time improved so as to be able to walk about the ward, and regained considerable power in the use of his tongue and arm.

"During the four months he remained there, his brother states that he had several convulsive attacks similar to those already nentioned, followed each time by increasing helplessness and greater loss of mental power, until he became reduced to the condition in which he was brought to the Asylum. Autopsy fourteen hours after death: skull a quarter of an inch thick, and of a texture less dense than usual; dura mater and arachnoid closely adhered over summit of cerebrum; arachnoid thickened, and presenting an opaline appearance, with serum between it and pia

mater; general appearance of brain, atrophied; the cortical structure somewhat softened and easily scraped with the knife or finger-nail from the white medullary substance; this latter was found to be hardened, of a firm texture, and glossy in appearance; the ventricles were largely distended, and contained ℥iv. of clear serum; the floors of both lateral ones had a feeling of roughness to the touch; the foramen of Monro was large and patulous, easily admitting the end of the little finger; the middle or soft commissure was wasted to a thin ribbon of almost transparent membrane; the pons varolii and medulla oblongata were of less than usual size, and the pituitary gland shrunken, and the upper portion of its peduncle enlarged. The weight of the brain, drained of the serum in its ventricles, was two and a half pounds, which is some ten ounces less than the average given by Solly".

The most common pathological change in *paralysie générale* is a softening of the vesicular neurine of the brain, especially in the anterior portion of the parietal regions. Sometimes the tubular neurine is also involved. Various other changes are occasionally found, such as thickening of the membranes, effusion of serum, induration of the cerebral substances, &c., but with no particular uniformity; and these, in fact, are found in many of the chronic diseases of the brain. The length of time in which the disease has progressed, must necessarily vary the cadaveric phenomena, and if death occur very early, there may be no manifest softening; yet from this it does not follow that it has been in progress, that there is no organic detritus. Either a subjective cause like over-excitement of the mind, or an objective one like intemperance, or moral and physical causes combined, may over-stimulate the brain, and its continuance result in congestion, from which condition serum may be effused into the primitive cellules, causing irritation that may or may not end in softening. Why softening follows in this form of paralysis, but not in ordinary congestion, is not well settled. It may depend either upon some particular predisposition on the part of the patient, or upon some unknown peculiarity of the disease.

The prognosis is highly unfavorable. Rodrigues mentions a few cases of recovery, but by most the disease is considered incurable. Death follows, generally, in from one to three years after the first symptoms appear, but life is occasionally prolonged beyond the last-named period. If it occur early in the disease, the termination is usually by epileptiform convulsions; if at a late period, from general exhaustion, or disease of some important organ other than the brain.

The object of this communication being merely to call the attention of the profession to the general characteristics of this form of paralysis, I will not dwell upon the subject of treatment.

M. Roderigues recommends the adoption, at an early stage, of

active measures, such as frequent venesection, &c. After the disease is somewhat advanced. he advises the occasional abstraction of blood, in connection with tonics, aromatics, and cold baths, while at a later period he recommends laxatives, and revulsives to the skin. The treatment of M. Roderigues has not been found successful when adopted by others, although he gives a very favorable account of its results.

The observance of general principles of treatment to meet the indication of the symptoms has seemed to be attended with as much benefit as the adoption of any other system. I have seen more temporary good effects follow the use of a seton, or the free application of Ung. Tart. Ant. to the back of the neck, than from anything else in the way of treatment. If at a very early stage the habitual excesses which had partially undermined the system were corrected, and a careful hygienic course pursued, some hopes might then be entertained of a gradual restoration.

[*American Med. Monthly.*

Fevers—Their Identity and Treatment. By W. L. Johnson, M. D., of Charleston, Ky.

There is no class of disease in Nosonomy of such importance to the physician as that of Fevers. (Febris, from fiévre rel ferrore). The fevers prevalent in the different climates of the United States, constitute a very large per centage of the disease with which the physician has to combat. Moreover, they constitute a class of disease frequently of great malignancy and fatality, sparing neither age nor sex; the inhabitants of the sunny South, of the umbrageous West, of the frozen North, and of the East, are alike often victims of their ravages. Of the mortality among the people of the United States, a large per centage die of the great scourge of the world, fever. How often does the scientific disciple of Æsculapius find his skill unavailing, and feel his strong, sinewy arm grow weak, as he beholds his patient in rigor mortis, or struggling with the grim monster death. From these and other considerations. I am induced to write an article on the subject of fevers, hoping that it will merit a place in the columns of your excellent journal, and throw out one glimmering ray of light to the profession, or elicit something upon this important subject from others of greater age and of riper intellects than the writer. If I shall present ideas or views of the pathology, causation and treatment of fevers different from others, they will be conclusions or deductions arrived at from close observation and study, and from an extensive practice of several years.

Medical literature abounds with accurate and faithful history of all the phenomena, symptoms and complications of fevers, nev-

ertheless but a glimmering ray of light has been thrown out as yet on its real causations and pathology.

In physiology as in chemistry every cause produces an infallible and uniform result, and like results or consequences must be produced by identical causes.

The blood is now generally admitted by the most renowned writers, as the seat of these phenomena, denominated fevers. The idea is generally inculcated that they are occasioned by the introduction into this fluid of some virus, malaria, miasm, effluvia, or vapors, etc., so called by writers, which materially, chemically or vitally change its character.

It would be absurd and illogical to arrive at the conclusion that the multifarious substances affecting that fluid could produce the same results; hence we are brought to the conclusion that all similar febrile disturbances or diseases have the same or identical causes or sources, cæteris paribus.

The analogy between fevers is striking to a casual observer, considering the difference in the circumstances under which they originate, which seem to indicate or establish the probability of the somewhat plausible hypothesis that they are produced by similar or identical causes.

If we compare the miasmatic or autumnal fevers, we will find as little difference between them as exists between cynanche maligna and cynanche simplex, or the different species or fevers of variola, scarlatina, etc., etc.

Now let us search out the localities, circumstances and seasons favorable for the prevailing of intermittent fevers; the type of those fevers which are admitted by all authors and physicians, as being produced by some vegetable, and peradventure, in some degree, by animal poison.

Intermittent fever is most prevalent in low, swampy lands, of a wild, luxuriant growth, which has been for ages enriching the soil by its decay, until its whole surface has become covered with abundant vegetation, where the plough and pruning hook have never been used by man, where the land is often inundated and the soil is alluvial in character. It is there that we see the sallow cheek, the yellow tinged conjunctiva, enlarged spleen, anasarca, etc., among the poor and indolent inhabitants who have emigrated there to subsist upon the game of the forest, and the fish of the creeks and rivers. The intensity and frequency depends greatly upon the overflowing of the rivers, creeks, etc., and uniform heat or temperature of the season, thus producing great and rapid decomposition of the vegetable matter, the prolific source of the disease.

It prevails to a great extent in the counties of Hopkins, Christian and Caldwell, Kentucky, and in the vicinity of Charleston, in midsummer and in the latter part of autumn and spring. This

fever prevails in almost every river valley in the west, in the savannahs of the south, and in the marshes and flats of the north-eastern States. The disease becomes less prevalent as the lands become cleared and cultivated by the agriculturist, which brings to mind an old maxim, that when the cause shall be removed the effect will cease to exist. A certain amount of virus or malaria seems necessary to produce intermittent fever, but a greater amount produces fevers of a greater malignancy and of greater duration, though similar in character.

The high lands contiguous to these regions or localities, where intermittent fevers is so prevalent, are by no means secure or exempt from this disease, though it prevails to a less extent and is milder than in the low lands, and is often contracted in the low lands, or the malaria is carried through the medium of the atmosphere.

Remittent fever arises under the same circumstances, and in the same localities, seasons, etc., only requiring perhaps a greater amount of malaria or heat.

The isthmus and yellow fevers are confined to low lands, marshes and swamps, only in climates of higher temperature, and are seldom found in the uplands or in the mountainous districts.

Typhoid, typhus, bilious fevers, etc., we think, from deductions made from close observation, practice and study, are produced by the same vegetable poisons in the same localities, though at different seasons of the year, or in climates of a higher temperature. They are the most prevalent when we have excessively hot summers, and when decomposition of vegetable matter has been very great. When cold weather comes on and the decomposition of vegetable matter is arrested by frosts, these fevers disappear, and genuine cases of typhoid, bilious, or typhus fever are but seldom seen unless the disease has been contracted during the autumn. They are very uncommon in high latitudes where the temperature is low, or in a dry, upland country. Therefore from the best knowledge on the causation of these prevalent and important diseases, we are bound to come to the conclusion that they have identical causes.

Some other forms of fever remain unnoticed, but we will not examine into the causation of any more in this article, but will now show the great similarity of the initiatory or incipient symptoms of the general or prevalent fevers of the United States.

Taking intermittent and remittent fevers as the type of all the miasmatic fevers, we will first give a meagre description of their invasion, phenomena and course. These fevers are mostly preceded by general lassitude, cephalalgia, soreness of the muscles, yawning, articular pains, etc., etc., and frequently by some unpleasant enteric and hepatic symptoms, the tongue coated with a whitish yellow fur. All of these are ushered in by a chill, followed

by fever, some cerebral disturbance or congestion. Now up to this stage of these diseases, there is but little or no difference between intermittent and remittent fevers; this difference, should it exist, is only in degree. Intermittent fever has three distinct stages, its chill, fever, and the stage of perspiration; these are succeeded by a marked intermission of duration proportionate to the severity of the attack and the type, whether quotidian, tertian, quartan, etc. But remittent fever does not present that perfect intermission as in intermittent fever, but often presents remissions of greater or less duration, according to the nature and malignancy of the case, and often runs into typhoid fever, unless skilfully treated, thus showing the identity between these diseases, or as is sometimes the case, it runs into intermittent fever. The similarity between intermittent and remittent fever is very striking, nevertheless easily distinguished by the practitioner, and the indications of these two fevers are such as to require almost the same treatment.

Bilious and yellow fevers have almost the same incipient symptoms as the two fevers just described, only differing in the severity of their attack and character. These fevers are similar and analogous, the latter only differing in its great malignancy, and requiring a much higher temperature for its developement; both of which have great hepatic derangement, pathognomonic of these affections, the viscus of the liver being more powerfully affected than all others; the whole secret of success in the treatment of these diseases consist in addressing remedies to that organ, and eliminating its poison or malaria in the system by the same medical or therapeutical agents as in intermittent and remittent fevers.

We now come to typhoid and typhus fevers, almost entirely analogous or similar in character, incipiency, stages, duration, etc., and often a diagnosis is perplexing to the most scientific physician, nor can it be made with great certainty until the disease has made considerable progress. As in remittent fever there are often remissions, though imperfect. They are ushered in by a chill frequently, headache, lassitude, pains in the back, diarrhœa, or constipation, biliary derangements and delirium, though this last symptom seldom presents itself until the second stage. So we find the phenomena, the invasions, all the general symptoms of these two fevers to be analogous or identical, doubtless produced by the same cause but under somewhat dissimilar circumstances; hence the propriety of giving them different names in our text books.

From this hasty view and imperfect investigation of the causation of fevers, we arrive at a very correct or at best, plausible conclusion, that the difference in malignancy, forms, duration etc., thereof, is caused by the different amount of malaria introduced into the blood, the climate, idosyncrasy, previous organic derange-

ments, or pathological conditions, and circumstances under which they present themselves.

Now the inference or deduction is natural, philosophical and plausible, that fevers have the same existing, identical cause, if it be admitted that what we have stated is true relative to the locality, temperature, climate and circumstance under which they originate. Moreover it seems equally plausible to admit the identity of fevers, should there exist the great similarity in the initiatory symptoms, exacerbations or paroxysms, and course, concomitant to the progress and termination of these diseases, described in this article. We think that the contagiousness of yellow and typhus fevers can be satisfactorily explained, upon the principle of a vast amount of miasm or malaria in the vascular system, to such a degree that it is given out, emitted or exhaled by the lungs, or excretory ducts of the cutaneous system, etc., so that the poison may be imbibed or received by the nurse or occupants of the sick chamber from the victims of these malignant and alarmingly fatal diseases, especially the former, yellow fever. In our next article we will present the identity of the treatment of fevers. Especial attention will be given to the treatment of typhoid fever, the writer believing and knowing that it can be arrested and greatly shortened in its course, having never lost a case of this dangerous malady, or any other fever, though never having treated a case of yellow fever.—[*Nashville Med. and Surg. Jour.*

On the Observations of Temperature in Patients. By Prof. C. A. Wunderlich and Dr. L. Meyer.

Already during the last century several eminent physicians endeavored to ascertain the temperature of the body in different diseases. These efforts, however, were soon abandoned again, and only quite recently the thermometric observations in patients have again received that attention which they so much deserve. Prof. Wunderlich has, in this respect, a rich experience at his command; accurate thermometric observations were regularly made in his clinic in more than 5000 patients during the whole course of their sickness, and also in private practice he has convinced himself of the practicability and usefulness of this means of investigation. He considers himself justified, therefore, to pronounce the view so generally taken, and recently advanced again by Laségne, (*Arch. Génér.*, May, 1856,) that thermometric investigations would never become very important to pathology, as perfectly erroneous. It is true, that for the theory of diseases these observations of temperature have remained as yet without direct use, and that they do not throw much light at present upon the nature of fever, inflammation,

etc., but also in reference to theory they have afforded facts which are of great consequence for many important questions in relation to pathological physiology. Of far greater importance, however, are they in a *practical* point; Prof. Wunderlich considers them even of more value than most of the other means of investigation, provided that also in local diseases the part taken by the whole organism is considered of sufficient moment. As proof of his statement, the author gives the following facts:—

1. The observation of temperature offers the most reliable means for deciding *the importance of a disease of recent origin;* with normal, or but little elevated temperature, the disturbances of health are, with some exceptions, (cholera, apoplexy, pulmonary hemorrhage, strangulated hernia, poisoning, etc.,) first of all of no importance; an elevation of 2° R. or more, announces, however, with certainty, the commencement of a serious disorder. This circumstance is a valuable guide, particularly in cases of children, in which, as is well known, an insignificant disease is frequently accompanied by violent symptoms, as also in reference to the continuation of the patient's business, to his departure, or transport, etc.

2. The observation of temperature points out frequently *important, though still latent disturbances;* an indisposition with much elevated temperature deserves always particular attention; in the state of reconvalescence from serious diseases a relapse, or a secondary disease, is frequently indicated first by an elevation of temperature. This is particularly the case in typhus; but also in intermittent fever an elevation of temperature without any other symptoms is frequently observed after an apparent cure, and a relapse can then only be prevented by continuing the use of quinine.

3. If the disease is developed the observation of temperature offers *the most reliable indications for the diagnosis.* Diseases in which the diagnosis of particular forms of the same or other of pathological processes can be decided in this manner are, according to Prof. Wunderlich, the following:—typhus, (exanthematic; enteric;) intermittent fever; pneumonia; meningitis, (at the base; at the convexity;) serous and purulent effusions in the pleura or pericardium; acute exanthemata; internal suppurations; peritonitis, (in lying-in women.)

4. The diagnosis being decided, thermometrical observations are of the greatest use in reference to the *prognosis. Intensity* and *character* of the disease, *its stage* the commencement of a complication which is often not indicated by any symptom, the usual *aggravation* and *increase* of the malady, as well as its *decrease*, can be recognized, as the author proves by many exam-

ples, the earliest and surest, sometimes even solely by the behavior of the temperature of the body. A certain height of temperature (about 34° R.) indicates, with certainty, a fatal issue; perseveringly high temperature (over 32·5°) makes the prognosis always more serious; a falling of temperature in a proper manner, however, permits predicting a favorable turn of the disease. In the state of *convalescence* changes of the temperature of the body deserve no less consideration as a means by which to recognize deviations from health, otherwise hardly perceptible. Insufficient falling of temperature indicates, in spite of apparent convalescence, an incomplete cure, and gives reason for fearing the development of a chronic disorder; even a small increase of temperature challenges precaution in regard to diet and regimen of the convalescent.

5. Another great advantage derived from thermometric observations is the proof of *a regular typic course of numerous febrile diseases;* it is true that physicians of a former period supposed it to exist, but it cannot be demonstrated with certainty but by accurate observations of the changes of temperature of the body. In the same way *deviations* from this regular typic course are best recognized by the use of the thermometer, and we are thus enabled to avert them by removing the causes, to neutralize their consequences, or also, as many of such irregularities are of a more favorable character than the normal course of the disease, to bring them on by therapeutical means.

6. From what has been said, the importance of thermometric observations for *therapeutics* is evident enough; they indicate where energetic interference is necessary, and when the disease may be left to itself again. The thermometer gives us, however, also reliable and accurate information in regard to the efficacy of certain remedies and methods of treatment used; for instance, on the effect of general bleeding, of calomel, digitalis, camphor, an emetic, and other energetic means in febrile diseases. The observations of temperature have, as the author shows, so great a value for therapeutics, particularly for the reason that the indications for treatment have more frequently to be derived from the general condition of the patient than from so-called local disturbances which usually disappear spontaneously, and in which direct interference is not of much benefit.—[*Arch. f. Phys. Heilk.*, and *North American Med. Chir. Rev.*

Dr. Meyer considers observations of temperature in insane patients of very great use, as they aid the physician in determining whether there exists a direct disease of the brain, or whether the latter is affected merely by reflex action from another organ. In the former case a corresponding change of temperature is ob-

served; if the delirium is accompanied by elevation of temperature without remission, a direct irritation of the brain exists. In reflex alienations, however, this change of temperature does not take place; if the temperature rises in these cases, it indicates the occurrence of a complicating disease. These statements, the importance of which for the prognosis and therapeutics of mental diseases is very evident, the author proves by a condensed report of numerous cases, (mania, progressive paralysis.) As the peculiar character of insane patients does not permit a long continuance of the usual mode of observation—viz., by placing the thermometer in the axilla, he prefers to insert it into the rectum.—[*Deutsche Klinik.*, 1858; *Schmidt's Jahrbüch.* 1858, and *Ibid.*

On the Normal Course of Certain Typical Diseases. By C. A. Wunderlich.

Professor Wunderlich considers the thermometer (applied to the oral cavity, the armpit, or rectum) as the best means of determining the type of a disease, because its indications are but little liable to be influenced by accidental circumstances; thus, the character of the pulse, though presenting considerable uniformity in different morbid states, varies too much, and is too dependent upon accidental circumstances, to allow of our using it for the purpose of establishing the types of disease by its aid. The author has not been able to determine any definite laws regarding some acute diseases—as acute articular rheumatism, peritonitis, pleurisy, and pyæmia, nor for chronic diseases generally; but he has found that febrile affections run a definite typical course, which may be represented by the curves obtained by connecting the daily fluctuations of temperature. But even in these typical forms of disease variations occur, which depend upon the bearing of the individual, and upon influences to which he is subjected. But there are certain influences which are so uniform in their effect that this amounts to a law, and thus a new type is established; this is the case with regard to vaccination in its influence upon variola, venesection upon the course of pneumonia, or calomel upon typhoid fever. This knowledge of the typical course of a disease has a practical value, inasmuch as the diagnosis may be established by looking at the curve; the deviations from the normal condition are recognized, and the exacerbations, as well as the commencement of cure, are rendered visible. Moreover, when the typical course of a disease has been demonstrated, a look at the curve will protect from all illusions regarding our therapeutic achievements, while it affords a safe means of judging of really beneficial

effects produced by remedial agents; the unusual reductions or diminutions of the course being shown irrefragably in the altered curve. Professor Wunderlich passes successively in review his observations on the following diseases:—Ephemeral fevers, which he does well in restoring to nosology; quotidian, tertian, and quartan agues; measles; erysipelas; scarlet fever; variola; typhoid and typhus fever; and several forms of pneumonia. Without reproducing the curves themselves, which give an ocular demonstration of the rising and falling of the thermometer in the various diseases mentioned, it would be futile to attempt giving the details of Professor Wunderlich's elaborate and valuable paper. The following general remarks will further indicate the kind of results which he has arrived at by this method of investigating disease. In some forms, the mode in which the disease commences is characteristic; the increase of temperature may be very rapid or slow, the maximum being reached in a definite period, or there may be a uniform rate of increase. The period in which the fever arrives at its full development affords numerous important points; the absolute elevation of temperature is determined in part by the special form of disease; on the other hand, it indicates its degree. The duration of the maximum point is even of more consequence than the absolute maximum, and the larger or less variation between morning and evening, and the number of days on which the temperature retains nearly the same elevation, are also points of importance. The duration of maximum elevation varies somewhat, but its duration must be regarded in the main as forming a characteristic feature of the individual type. In some diseases definite fluctuations occur during this period. The termination of the process, and the return to the normal condition, which the author terms defervescence, exhibit a very regular type, which is characteristic for every form of disease; the phenomena of defervescence are even more precise than those of the commencement and elevation of the morbid process, and serve still better to mark the nature of the disease.—[*Archiv. fiir Physiolog. Heilkunde.* and *Brit. and For. Med. Chir. Rev.*

On the Theory of the Production of Hernia. By Professor ROSER.

The views here advanced have already been published by Professor Roser, seventeen years since; but as they have not excited the attention he believes they deserve, he reproduces them with the advantage of being able to add, that all subsequent investigation during so long a period of an active career, has only confirmed his conviction of their truth.

Debating with a celebrated professor of surgery, he declared

that a sudden production of hernia was impossible, according to the laws of mechanics. The professor maintained the possibility inasmuch as he had examined persons who had shown no signs of hernia, and yet, after violent exertion, its presence had become manifest. This, Roser regards not as observation, but as a *post-hoc* conclusion. It is well known how difficult (or when small, impossible) it is to detect an empty hernia sac. We only recognise it when the intestine has entered it, and we can feel the impulse on coughing, &c; but when such entrance is prevented by various circumstances, the most we can say is, not that no hernial sac, but that no hernia, is present. Why is it not possible, as Scarpa and Cloquet have shown, to produce a hernial sac on the dead body by the use of violent compressing power, aided by apertures made in the tendinous walls of the abdomen? First, because the peritoneum is not sufficiently elastic to bear the necessary extension; and, secondly, because compression of the soft and fluid contents of the abdomen acts by hydrostatic law; and although the peritoneum may be stretched, it is not thrust out as it is found to be in hernia, and as it may be to some extent by the finger locally applied.

Professor Roser advances these two propositions, that femoral hernia arises from the dragging out (*Herauszerrung*) of the peritoneum, and that external inguinal hernia, or more properly its sac, is almost always congenital. First, with respect to *femoral hernia*, the dragging out of the peritoneum is brought about by nodules of fat, which, appertaining to the subserious tissue, are firmly attached to the peritoneum. These nodules slide between the fibres of the *septum crurale*, thrust them asunder, and lead to their disappearance. The anterior part of a nodule passes out under the plica, covered only by *fascia superficialis*, and increases in size. Its movements are favored by its pyriform shape, and by the motions of the body, and the peritoneum following it, a sack is gradually formed. In all the instances of commencing hernia the author has had the opportunity of examining, he has found such fatty nodule at the apex of the sac. We cannot expect to find this in old or large herniæ, as it would disappear under pressure. Professor Linhart, of Würzburg, the only anatomist who has of late years investigated the subject of hernia, has confirmed these views, stating that he believes that traction exerted on the peritoneum exerts far more influence in the formation of hernia than the pressure exerted by the contents of the abdomen.

External Inguinal Hernia.—The valvular character and oblique course of the inguinal canal, should have formed a sufficient reason for rejecting the ordinary theory of the formation of this hernia. All subsequent investigation has convinced Professor

Roser that his statement made long ago, that this hernia is almost always congenital, is correct. He has found that the *hernia vaginalis funiculi*—i. e., an open state of the upper part of the vaginal process—occurs much oftener than is supposed. It has been found in almost all the children the subjects of inguinal hernia, whom he has examined; and he has frequently met in adults hernial sacs so long and narrow, that they could only be regarded as incompletely-developed vaginal processes of the peritoneum, into which intestine had not passed. He has also found the anatomical signs, detailed in his former treatise, exhibiting the congenital nature of the affection. Other co-existing anomalies of the peritoneal formation are often met with. Beside the descent of the testis, there is a descent of the cœcum and sigmoid flexure, and disturbances of these often occur at the same time. As the author has found in almost all the outer inguinal herniæ he has examined, such grounds for considering them congenital, he has come to the conclusion that the bulk of cases regarded as accidental do not merit the appellation, inasmuch as the sac has been in existence prior to birth. He refers in confirmation of his views to Camper's statement, that of 63 full-timed children in whom the testis had descended, the vaginal canal was obliterated only in 7, it being open on both sides in 34, on the right side only in 14, and on the left side in 8. So likewise Professor Engel, whose investigations are now published in the 'Wien Wochenschrift,' states that in children at birth, or during the first fourteen days afterwards the vaginal canal is found oftener obliterated, or at least considerably shorter, on the left than on the right side—a fact agreeing with the preponderance of hernia on the right side. He found the canal entirely closed at birth in ten per cent. After fourteen days no trace of it could be found on the left side in 30 per cent., while it remained open on both sides at the end of fourteen days in 69 per cent. In the adult the presence or the remains of the vaginal canal was observed in 31 per cent. of the bodies examined, on both sides in 37·5 of these, and on the right side alone in 62·5.

Outer Inguinal Hernia in the Female.—The author long since proposed the question to Professor Meyer of Zurich, whether woman were not liable to a similar descent of the peritoneum as men; and that writer, in a paper in Müller's 'Archiv,' has shown that in the female as well as the male fœtus, a projection of the peritoneum into the inguinal canal does not take place. Its metamorphosis, however, occurs much earlier, as soon as the fifth month; and it is also less considerable, and therefore less liable to disturbance than in the male sex.

Internal Inguinal Hernia.—This, Professor Roser observes, may, in some cases, have a fatty origin, like femoral hernia;

but he believes that other cases arise from a local protrusion of the peritoneum, in aged and relaxed subjects, in whom partial atrophy of the *fascia transversalis* has taken place. This is a very different thing, however, to the sudden production of hernia usually admitted. He believes with respect to internal inguinal hernia, that the fact that it occurs almost exclusively in aged men is not generally known. It takes place indeed much oftener than most authors admit; and may be almost said to be as frequent in old men as femoral hernia is in old women. The much greater narrowness of the ring is the reason it does not occur often in old women.

Umbilical Hernia.—This is the only hernia which is produced according to the old theory, viz., by a *vis a tergo*, and even here the author suspects that in some cases it may arise from a congenital protrusion of the peritoneum, remaining from the fœtal state. As this hernia differs in the mechanism of its formation from other kinds of hernia, so does it in the remarkable fact of its being generally spontaneously curable, as may be seen from the small number of cases met with in the adult, compared with the large number occurring in infancy. In aged and fat individuals, accidental hernia of this form is, however, frequent.

Originally commencing his investigation with a purely scientific object, Professor Roser has since found that it has an application to legal medicine, the question not unfrequently arising, whether a hernia has been produced in consequence of acts of violence in scuffles, assaults, &c., and the culprit risking to be dealt with too harshly in consequence of the off-hand way in which the affirmative is pronounced.—[*Arch. für Physiol. Heilk.*, and *Ibid.*

Case of Apparent Death during a Paroxysm of Intermittent Fever. By Professor François.

In the midst of an epidemic of intermittent fever which prevailed at Mons in 1822, Professor François was sent for to a lady, aged 40, who had a slight attack, which was soon relieved. Two days after, he was suddenly informed she was in a dying state. She had been seized with a new paroxysm, and after a little shivering and yawning, became almost immediately insensible. He could find no pulse; the pupils were insensible to the action of bright light; the whole surface was cold, pale and dry, and respiration was suspended to such an extent that a mirror placed before the mouth remained untarnished, and the flame of a candle undisturbed, while the ear applied to the region of the heart could not perceive the slightest sound or impulse. Every kind of stimulus was applied in vain, and she had so completely the appearance of a corpse that her burial was alrea-

dy spoken of. Although this state had continued nearly an hour, M. François prohibited any such step being taken, believing it possible that he had to do with a case of pernicious intermittent, in which the vital process might be merely suspended, not extinguished. Stimuli, in the shape of frictions and glysters, were therefore resorted to; but it was not until about four hours afterwards that a little moisture was observed on the forehead. Sinapisms and hot applications were again resorted to, and shortly afterwards some slight pulsations of the heart and respiratory movements were observed, followed by a return of the pulse and complete restoration. Quinine was administered in abundant quantities as soon as possible. On the second day after this another alarming paroxysm occurred, but this was the last, and the cure remained assured. The lady lived for many years afterwards. It is a curious fact that her husband, a fortnight afterwards, suffered from an attack of pernicious fever of the same nature, but less in degree. This case, in which the pulsation of the heart could not be perceived during several hours, forcibly shows the danger of the rule laid down by M. Bouchut, that such complete suspension is a sign sufficiently certain to allow of interment being safely undertaken.

[*Presse Médicale Belge*, and *Virginia Med. Jour.*

A New Mode of Treating Purulent Ophthalmia. By M. De Conde.

M. De Condé, a Belgian military surgeon, dissatisfied with the present treatment of this disease, which seems to be very prevalent still in the Belgian army, lays down a new plan, based upon the following considerations:

1. The greatest danger to the eye arises from the contact of the upper lid, which, inflamed and swollen, floods its surface with an acrid and corrosive pus. The excessive heat of the eyelid, the internal surface of which is rough and unequal, interferes with the nutrition of the cornea, while the acridity of the pus leads to its softening and destruction. 2. It is admitted that it is of importance to prevent the contact of inflamed mucous membranes by the interposition of an isolating body, such as sharpie or wadding. This is seen in vaginitis, balanitis, and fissure of the anus. 3. This body, which may alone produce great amelioration, or even in some cases a removal of the disease, may exert a powerful effect if impregnated with an active agent. In this way lint, soaked in a concentrated solution of acetate of lead, and placed between the glans and the prepuce, will cure gonorrheal balano-posthitis within forty-eight hours. 4. Cod liver oil exercises a powerful action in disease of the mucous membrane, modifying and then suppressing their secre-

tions. It strengthens the fibrous tissues of the eye and the cornea, and tends to prevent ramollissement. It is especially in ulceration and chronic ramollissement of this membrane that this double action is perceived. 5. The red precipitate ointment (four parts to fifteen of lard and fifteen of linseed oil) is an excellent substitutive agent, sufficing alone to arrest the disease when employed early. It is the best remedy for cutting short the ophthalmia of new-born infants. 6. A solution of the chloride of lime (thirty parts to two hundred of water) is an energetic modifier, neutralizing with certainty the virulence of the secretions. 7. Lastly, perchloride of iron exerts an instantaneous hæmostatic effect upon the hæmorrhagic mucous membrane, and an indubitable modifying influence upon the mucous secretion.

As an isolating body, M. De Condé, after trying various substances, gives the preference to wadding, as forming at once an inoffensive application, capable of imbibing and favoring the flow of the secretions, and of being impregnated with medicinal agents. A slip of the wadding somewhat longer than the transverse diameter of the eyelids, is brought opposite the palpebral aperture, and gently pushed up beneath the upper eyelid by means of the little finger or a large probe. Some cases are related as examples of the manner in which a disease often so tedious in its progress, may, upon these principles, be rapidly cured.—[*Annales d'Oculistique*, and *Brit. & For. Med. Chir. Rev.*

Six Cases of Successful Operation in one family, on Children Born Blind. By Henry W. Williams, M. D., Boston.

In February, 1857, I visited a German family, residing near the southern boundary of the city, of which five members, the mother and four children, were affected with cataract in both eyes, evidently of congenital origin.

The mother was not aware of any cases among her eight brothers and sisters, or among her ancestors. In her, the lens exhibited in each eye a disseminated, dotted opacity, the cloudy spots being most numerous near the centre, while the margin of the lens was comparatively clear. Consequently, in a bright light she was almost entirely blind, but in a moderate light saw sufficiently well to perform, in a slovenly manner, the household-duties of a laborer's wife. The capsule of the lens, in her eyes, and also in those of the children, was transparent. Her hair and irides were dark; the children had light hair and a grey or blue iris. She has two other children, whose eyes as yet exhibit no trace of cataract. The order of succession in the cases was as follows: The oldest girl had cataract; the second child, a girl,

was free from the disease; the third and fourth children, a boy and girl, were affected; the fifth, a girl, was free; the sixth a boy, was affected.

The eyes of the children presented nearly similar appearances, and one description may answer for the whole. Nearly the entire field of the pupil was occupied by opacities, consisting of dots of various sizes, and evidently occupying different planes of the lens. In a bright light, reflections from crystals of cholesterine could be plainly seen. All the patients had sufficient vision to enable them to find their way in a moderate light, when the pupil was so far expended as to allow of vision through the margin of the lens; but in a bright sunlight they were nearly blind, and their sight was at no time sufficient to enable them to learn to read, or to gain a livelihood by ordinary pursuits.

Six operations were performed, on the afternoon of the 5th of February, on the oldest girl, aged about 17, the boy about 12, and girl about ten years. As I believed the entire lens might be safely broken up in these cases, the same method was pursued in operating on all the eyes, the lens and capsule being freely divided by means of a needle introduced through the sclerotica. Sparkling reflections from crystals of cholesterine were distinctly seen in the posterior chamber, by several physicians who were present. The eyes were covered with a dry compress and bandage, and the pupils were kept well dilated by the use of a solution of atropia. The oldest girl had very little pain or injection of the eyes, and no nausea. The boy had considerable pain in and around his left eye, and some nausea, continuing for two days. His right eye gave him no pain whatever. The youngest girl had considerable pain in the right eye, with intolerance of light, continuing four days. Her left eye gave her no pain at this time; but, the absorption of the lens going on slowly, a second operation was performed some months after, which caused some pain and nausea, but was followed by immediate absorption of the residue of the lenticular substance.

As the size and density of the fragments diminished, the absorption of the lenses went on more and more rapidly; but it was several months before the pupil became perfectly clear in all the six eyes. The children have now perfect vision, with the aid of the ordinary cataract glasses, and they will be able to follow any occupation they may prefer. The mother and the child of two years have not yet been operated on, the mother being timorous as regards her own eyes, even with the brilliant results before her obtained by the operations on her children, and wishing to have the little one left undisturbed till he is older. There is nothing in either of their cases less favorable than those which have already been relieved.

I have seen another instance, in a family residing in this State, of no less than seven cases. Other children in the same family were free from the disease. Some of the eyes had been operated on, but I think without much success, on account of portions of the capsule which were left behind and had become tough. These might, however, be readily removed by the small canula-forceps. Mr. Streatfeild also reports an example, in the third number of the "Ophthalmic Hospital Reports," of six cases of double cataract, five children and their mother. Three other children exhibited no defect of vision. Two of this family had been operated on, with partial success. The cases now reported are interesting from the rare occurrence of such a group, and the rare occurrence of such a group, and the still more rare performance of so many operations at one time in a single family; and the results are particularly gratifying, as they have given almost a new existence to those, who, but for the resources of our art, must have been unfortunate and helpless during their whole lives.—[*Boston Med. and Surg. Journal.*

On the Absorption of Abscesses.

M. Chassaignac brought this subject recently under the notice of the Paris Surgical Society, stating his belief that purulent collections are never absorbed, at least the solid globular portions, although the serum may sometimes be so removed. Abscesses said to be so removed were in fact non-purulent collections or lymph. M. Richard pointed out the error of supposing that pus-globules were not absorbable because they were solid, inasmuch as tumours, effusions of blood, &c., are known to undrgo such absorption. It is by no means rare to find small axillary or peri-mammary abscesses becoming absorbed; abscesses the size of a pigeon's egg, will in chronic farcy disappear in twenty-four hours; and congestive abscesses not unfrequently heal without any aperture having been made. M. Huguier thinks every one must have seen examples of the spontaneous disappearance of abscesses, a by no means rare circumstance, in inguinal bubo. M. Verneuil referred to a case that came under his care, in which an undoubted abscess, as large as the fist, situated in the middle of the thigh, entirely disappeared after three weeks local application of iodine. In another case, two abscesses in the axilla were opened, while two others, just as manifestly fluctuating, being left to themselves, were spontaneously absorbed. In a case of hygroma, M. Morel-Lavellée obtained a few drops of fluid by means of an exploratory puncture. This was shown to be pus, and the rest of the fluid being left in the collection, flying blisters were applied, and entire ab-

sorption was induced. M. Chassaignac observed that this was the only demonstrative fact advanced in the discussion, and he must wait for others to be convinced. At present he does not believe that properly-characterized abscesses are capable of absorption. Many cases are, it is true, mentioned by authors, but with insufficient proofs. Fluctuation and other symptoms mentioned are not sufficiently rigorous ones. Thus, in a case of angioleucitis, in which he opened two collections apparently alike, one contained pus and the other plastic lymph; and from some inguiual bubos he has opened, he has only removed such lymph. M. Broca, however, desired to know what M. Chassaignac designates as "collections of plastic lymph;" for if he means those masses of yellowish concrete, semi-solid matter found in the centre of commencing bubos, M. Broca can assure him that this substance, which is susceptible of absorption, contains an enormous quantity of pus globules. M. Collerier declares, that since he has treated bubos by the method recommended by Dr. Sirus-Pirondi—viz., blistering, followed by tincture of iodine, he has obtained a cure by absorption of the pus in nine-tenths of his cases. Even when the blister does not succeed, it still exerts a great influence upon the absorption of the globules; and if the bubo has afterwards to be opened, pus containing a large proportion of serum is discharged.—[*Gaz. des Hôpitaux*, and *British and Foreign Med. Chir. Rev.*

On Injection of Carbonic Acid Gas in Treatment of Diseases of the Womb, and their Influence upon the System. By Dr. BERRARD.

The application of carbonic acid gas in cases of painful uterine disease, as recommended by Drs. Hardy and Simpson, has been tried and found successful by the author in several instances. He records eight cases, four of carcinoma uteri far advanced, and four of a simple congestive but very painful character. In almost all of them the carbonic acid gas had an anæsthetic influence, without producing any alarming symptoms, with the exception of one case. The mode of application is very simple; a bottle, the cork of which is pierced by an elastic canula, is filled with twenty-five grammes of bi-carbonate of soda, and twenty grammes of bi-sulphate of potash, with a sufficient quantity of water. The development of the gas begins immediately, which is brought up to the diseased portion by means of the elastic tube.

The first case proves much in favor of these injections. The patient suffered from carcinomatous ulcerations of the neck, with a fœtid discharge and violent pains. After application of the gas, the pains not only disappeared entirely, but even the

ulcers began to look better, and the patient improved considerably in health, so that she was discharged as cured after two months, because only two or three red excrescences could be detected on the neck when she left the hospital.

The second case shows an old carcinoma, with violent hemorrhages and deep ulcerations of the neck, while the body of the womb and the neighboring organs were not affected. In this instance, the gas only showed its anæsthetic influence, having no influence upon the disease itself.

In a third case of ulcerated carcinoma, the injections at first stopped the discharge, and diminished the pain; but afterwards symptoms of intoxication were remarked, and when these injections were tried again after some time, they had a very bad influence upon the disease, so that their use had to be discontinued.

The fourth case is one of far advanced carcinoma, with violent pains in the lower part of the abdomen, which disappeared very rapidly after the first injections. The disease itself was not influenced in its course.

The fifth observation is one of inflammatory induration of the neck, with violent pains. The gas had a local quieting influence, but produced such violent symptoms of intoxication, that, its application had to be suspended.

In the sixth case, which was similar to the former one, the pains disappeared very soon, and the swelling diminished, but signs of intoxication were observed also.

In a seventh case, signs of absorption of the gas were observed, but the pains disappeared, while the ulcerations remained unchanged. The patient remained only a short time under treatment.

Eighth case.—Metritis, engorgement of the neck, violent pains, against which a great number of remedies were applied, without the least benefit. They disappeared after the first injections.

The anæsthetic influence of the gas only remains a short time, therefore the injections have to be repeated several times in a day.—[*Archiv. Géneralés*, and *New York Jour. of Medicine.*

Report of a Case in which the Operation of Paracentesis Thoracis was performed for the relief of Obstinate Vomiting.

The particulars of the case, communicated to the Society, through the President, by Mr. Heslop, of Birmingham were as follows:—The patient was a girl aged 20, who had been for two months affected with effusions into the left pleural cavity. Extreme emaciation, night sweats, etc., were present, but in addition to these, no food of any kind was retained by the

stomach. No relief followed ordinary measures, and it being evident that the patient was dying of inanition, Mr. Heslop advised the performance of the operation. Two pints of fluid were drawn off, and the relief which followed was immediate and complete. The patient rapidly recovered. Mr. Heslop added that, in advising the performance of the operation, he took the same general line of argument as that pursued by the accoucheur in inducing artificially premature labor, when the interference with important functions, as that of low stomach, calls for that proceeding.—[*Proc. of Path. Soc. of London.*.

Menstruation in Austria. By Dr. Fred. Szukits.

Of 665 women born in Vienna, and menstruating there for the first time, the mean age for its first appearance was fifteen years and eight and a half months; in 210 cases, in the beginning of the fifteenth year; in 87, in the eighteenth year: in 84, in the sixteenth; 6 women menstruated first at the age of eleven years, 3 at twenty-two. The period during which menstruation may primarily occur in Vienna comprises twelve years. In Paris, in the same latitude, it occurs one year earlier.

Of 1610 women from the country, the age of first menstruation averaged about sixteen years and two and a half months. 418 menstruated during the fifteenth year, 251 in the sixteenth; then followed in order the seventeenth, eighteenth, and nineteenth. More than half, 888, menstruated after the fifteenth year; less than one-fifth—304 before it. Two menstruated at ten, and the oldest—two likewise—first menstruated at twenty-five. The period during which menstruation may primarily occur, comprises therefore sixteen years in the country—four more than in the town of Vienna. Of these 1610 women, *a.* 603 were from Upper and Lower Austria Proper; of them. the mean age of first menstruation was sixteen years and three months; here also the greatest number, 142, menstruated in the fifteenth year, 88 in the seventeenth, 81 in the sixteenth, and 72 in the eighteenth year; the youngest, 5, were eleven, and the oldest, 2, twenty-five years old; the period of primary menstruation comprising thus fifteen years, or three more than in Vienna. *b.* 430 were Bohemians, of whom the mean age of primary menstruation was sixteen years and two months; 148 menstruated first at fifteen, 51 at seventeen, 49 at sixteen, and 46 at eighteen; the youngest was ten, and the oldest twenty-four, at her first menstruation; the period of primary menstruation comprising fifteen years. *c.* 273 came from Moravia, the mean age of primary menstruation being sixteen years and three and three-quarter months; 69 menstruated first at sixteen, 59 at fifteen,

and 32 at seventeen; the youngest, 8 in number, were twelve, and the oldest, 8, twenty-two years old; the period of primary menstruation comprising thus only eleven years; one year less than in Vienna, and four less than in Behemia and the rural districts of Austria Proper. *d.* 180 women came from Hungary; and of them the average age of primary menstruation was fifteen years; 39 menstruated first at fifteen, 19 at fourteen, 16 at thirteen, 12 at seventeen; the youngest was ten, the oldest twenty-two; the period of primary menstruation comprising twelve years. *e.* 67 women came from Silesia; the mean age of their primary menstruation was sixteen years and one and a half months; 21 menstruated first at sixteen, 14 at fifteen, 8 at seventeen, 87 at 18; the youngest was twelve, the oldest twenty-two years old; the period of primary menstruation comprising eleven years. *f.* 66 women came from Bavaria; their average age for primary menstruation was sixteen years and ten months; 17 menstruated first at seventeen, 15 at 16, 9 at eighteen, and 8 at fifteen; the youngest was eleven, the oldest twenty-three; the period of primary menstruation comprised thirteen years.

Brierre de Boismont fixed in Paris the age of primary menstruation at fourteen years and ten months for the poor, fourteen and five months for the middling classes, and thirteen years and eight months for the rich; and with this the observations of Chomel, Andral, and Recamier agree. Of our author's 2275 cases, 136 were of the middling classes—in them the average age of primary menstruation was fifteen years and two months; 730 handworkers—medium age fifteen years and ten months at their first menstruation; 1207 female servants, of whom the mean age of primary menstruation was sixteen years and two months; and 202 day labourers, whose mean age at their first menstruation was sixteen years and one and a half month; these results agreeing with Boismont's observation, that menstruation is earliest among the rich, and latest among the poor. Among the 2275 women, the ages at which menstruation first occurred are thus divided:—

At	10	years	2	women	menstruated.	At	18	years	259	women	menstruated.
"	11	"	15	"	"	"	19	"	147	"	"
"	12	"	36	"	"	"	20	"	95	"	"
"	13	"	149	"	"	"	21	"	34	"	"
"	14	"	204	"	"	"	22	"	30	"	"
"	15	"	628	"	"	"	23	"	4	"	"
"	16	"	335	"	"	"	24	"	2	"	"
"	17	"	283	"	"	"	25	"	2	"	"

The average age of primary menstruation in Austria being thus fifteen years and seven and a half months. As influential agents in hastening or retarding menstruation, Sz. enumerates geographical position, climate, populousness of a town, nationality,

mode of life, occupation, food, clothing, dwelling, training, morals, and bodily organization; according to some authors, hereditary tendency is also influential. Although in Austria menstruation most commonly occurs between the fifteenth and seventeenth years, many cases have been recorded of its much earlier occurrence. Wilson observed a case in which it occurred in the fifth year; the breasts being as large as those of a marriageable female. Scanzoni records one case at eight years; D'Outreport, one at nine months; she had protuberant breasts, and menstruated every four weeks till her death in her twelfth year. Boismont records two cases—in one menstruation commenced in the third month, in the other in third year. Similar observations are recorded by Mad. Boivin, Dieffenbach, and Martin Wall. In France, early menstruation is more common than in Austria; as Boismont, in 1200 cases, fonnd fourteen who had menstruated before their tenth year. According to Szukits' observation, in scarce one-third was primary menstruation painful; while in France, according to Boismont, this was the case in more than two-thirds. In one case of dysmenorrhœa our author observed trifling acne rosacea on the chin and sides of the nose—the woman was twenty-seven years old. In three cases, each menstrual period was attended by an eruption of uricaria over the entire body; and in two girls, one fifteen, the other seventeen, the molimina of primary menstruation were attended by inflammation of the cellular membrane, which again disappeared on its cessation in three to five days after. Strong, healthy women generally menstruate more sparingly than feeble, anæmic, or tuberculotic females; the latter, if not labouring under amenorrhœa have profuse watery menstruation, lasting from ten to fourteen days. Of 1013 women, 240 menstruated sparingly, 560 moderately, and 187 profusely; of the latter, 26 passed clots without there being any uterine lesion present. Of 1013 women Sz. found that only 642 menstruated regularly every twenty-eight to thirty days, 371 menstruated irregularly, 269 menstruated from every eight days to every three weeks, 128 only every five or six weeks. The duration of menstruation is influenced by the same causes which influence its early appearrnce—its medium duration is $3\frac{4}{5}$ days. Three times, Sz. saw menstruation occur for a shorter or longer period during pregnancy; also during lactation it was frequently seen. Trustworthy cases are recorded in which menstruation only occurred during pregnancy or after delivery. During fourteen years, and in 8000 cases, 14 occurred of total absence of menstruation; four of these had borne children repeatedly, the others never; most of them had from time to time, every three or four weeks, molimina menstruationis; in none was there any vicarious menstruation; in two

cases, imperfect development of the uterus was discovered. Of 263 women, menstrnation ceased in 99, between forty-six and fifty years; in 77, between forty-one and forty-five; in 42, between fifty-one and fifty-five; in 26, between thirty-six and forty; in 15, between thirty and thirty five; and in 6 cases, between fifty-six and sixty years. The youngest woman who had ceased to menstruate was thirty-two, the oldest sixty-one, at the period of cessation. This may occur suddenly, without interruption to the general health, or it may take several years for its completion. Boismont reckons the average of this at two years. Sz. found the mean duration of uterine power to be thirty years. 125 women menstruated from twenty-one to thirty years; 106, from thirty-one to forty years. The shortest peried of menstruation was twelve years, and happened in two cases; the longest, forty-five years, likewise occurred twice. Boismont found one case with a duration of only five years, and another with a duration of forty-eight. Of 863 women, 64 were never pregnant; 124 conceived once; 73, five times; 63, six times; 74, seven times; 38, eight times; 32, nine times; 27, ten times; 11, eleven times; 15 twelve times; 13, thirteen times; 5, fourteen times; 2, fifteen times; 7, sixteen times; 2, seventeen times; 3, eighteen times; 1, twenty times; 2, twenty-two times; 4, twenty-four times—863 women, of whom 61 aborted; each woman averaging about five conceptions. The most usual period of conception in Europe is between the fourteenth and fiftieth year; but cases of child-birth in the sixteenth year; are recorded by Meissner, Bernstein, Osiander, Mende, and Busch. Haller saw one case of childbirth at sixty-three, and another at seventy; as also Labatt in Dublin, and Capuron, in Paris.

[*Zeitschrift d. Wien Aerzte*, and *Ed. Med. Jour.*

Beneficial Effects of Pepsine in the Obstinate Vomiting of Pregnancy. By L. Gros, M. D.

In the great majority of cases the vomiting of pregnancy may safely be left to the influence of time; but there are some cases in which females are scarcely able to retain in their digestive system a sufficient amount of nourishment to support their existence, and are therefore reduced to the last degree of emaciation. In some, also, the shocks occasioned by this obstinate and repeated vomiting become the source of abortions, which might have been prevented by moderating the activity of the morbid phenomenon. A very remarkable case was related in 1856, by M. Teissier, Professor of Clinical Medicine at Lyons, showing the immediately beneficial effect of a dose of pepsine in a case of vomiting during pregnancy. In this case the symptoms resist-

ed all the ordinary methods which were employed, and the patient was unable to retain in her stomach any substance whatever. Under these circumstances, the patient was brought to M. Teissier, who found her in the following condition: The vomiting had continued for two months, and she was at the end of the fourth month of her pregnancy; she presented the appearance of a skeleton, having the aspect and the cough of a phthisical subject; the pulse was 140, and M. Teissier thought at first that the case was one of pulmonary tubercle. Finding that all treatment had been hitherto inefficacious, and that the lady was actually dying of inanition, he was seriously meditating upon the propriety of inducing abortion as a means of saving her life: but as a last resource before operating, he determined to employ pepsine. He accordingly prescribed one gramme, to be divided into two doses, and take every day in a spoonful of broth. At the very first dose the broth was retained, and from that moment the vomiting never returned. On the third day the lady ate some chicken, and then some beef-steak. The treatment was continued in the same manner for three weeks, and at the end of that time the cure was complete: the emaciation was replaced by *embonpoint*, the fever and the cough ceased with the vomiting, and at the end of the ninth month the lady was safely delivered.

Dr. Gros then relates six other cases in which the pepsine was employed with the same success, and he thinks himself warranted in concluding that pepsine undoubtedly produces good effects in the vomiting which attends pregnancy. He explains the results by supposing that, although in the first instance the vomiting is due only to the sympathy existing between the uterus and the stomach, yet subsequently the stomach itself becomes affected, as is proved by the fact that in the beginning of pregnancy the vomiting occurs only in the morning or the evening; but in aggravated cases it supervenes after every meal, and all alimentary matters are rejected. In such cases, therefore, when the stomach has taken on a morbid habit, and exhibits an alteration of secretion, the pepsine appears to be really indicated; although in a merely sympathetic action between the uterus and stomach it would be difficult to explain the efficacy of its action. *Brit. and For. Med. Chirurg. Rev.*, from *Bull. Gén. de Thérapeut.*

Animal Charcoal an Antidote for Cantharides. By M. THOUERY.

It is generally known that charcoal possesses proprieties which are most interesting; that it removes most of the metallic salts from water; combines with oil to such an extent that it cannot be separated by ether, and fixes certain of the vegetable princi-

ples. M. Thouery, in 1851 and 1852, made a series of experiments, from which he concluded that animal charcoal possesses real efficacy in combatting poisoning by cantharides. These experiments were 54 in number, and were performed on dogs. Lately M. Thouery has published the details of an experiment made on men.

During the night of the 12th–13th of December, 1856, Antoine B. experienced very acute suffering after having taken an infusion of centaurea from a vessel which contained powdered cantharides. Being called to see him, M. Thouery recognized it immediately as a case of poisoning by an irritant corrossive poison, but none of the liquid remaining for examination, he could not determine the nature of the poison ingested. He confined himself to the administration of general remedies, uniting, however, calcined magnesia and animal charcoal, and giving them in large doses. The condition of the patient did not seem to improve at first, but, after two days of intolerable suffering, relief was obtained and health was restored.

Thouery afterwards found that the poisoning had been produced by cantharides. He does not doubt, then, that animal charcoal largely contributed to the cure; and he regards this observation as confirmative, in a certain measure, of the results of his previous experiments. The only objection which we can adduce against this theory of Thouery is, that it does not necessarily follow from the fact reported*.—[*American Med. Monthly.*

Inversion of the Body for the Relief of the Symptoms produced by the Passage of a Renal Calculus along the Ureter.

Professor Simpson exhibited to the Edinburgh Medico-Chirurgical Society (May 5, 1858) a small oblong renal calculus, from a patient who had passed them at different times, and always suffered terribly during their transit from the kidney to the bladder. This patient had been now twice relieved of the agonizing symptoms accompanying the passage of the calculus by inversion of the body. Prof. S. had subjected her to this treatment in consequence of his belief that the passing calculus, falling down into, and becoming impacted in the ureter, acted at its point of arrestment as a pea-valve, and by its accumulating the urine above, or in the pelvis of the kidney and higher portion of the ureter, led to the accompanying distress by the morbid distension of these portions of the urinary ducts. When

* We have translated this notice from the French, not because we consider the claims of charcoal as an antidote for cantharides to be established as a certainty, but with the view of calling attention to it, and obtaining from our own countrymen some additional facts bearing upon the subject of cantharides as a poison.

the body was inverted, and the affected side manipulated, the calculus probably fell backward, and consequently upwards, by its own gravity. At all events, whatever be the explanation, the practice in this and in one other case had immediately relieved the patient. He had seen partial relief from changed position in one case also of gallstones. Position was a more important therapeutical agent than was generally supposed, not only in medicine, but also in surgery and therapeutics. Several years ago—and shortly after the famous case of Mr. Brunel—Dr. S. saw, with Dr. Patterson and Dr. James Duncan, a case in which a shilling passed into the windpipe, and where upon inversion of the patient the shilling fell back into his mouth, thus saving the patient from the operation of tracheotomy. Dr. Duncan has published a full account of the case. In prolapsus of the umbilical cord in labour, the mere gravity of the cord in the usual supine position of the patient was no doubt one great cause of the difficulty of retaining it in utero, above the head or presenting part of the child, when once returned. But some late cases and observations proved that the return and retention of the cord could be effected with comparative facility, if the aid of position was called in, and the patient was placed upon her face, or upon her hands and knees, till the presenting part filled the brim of the pelvis; for in this prone position the cord gravitated toward the fundus uteri, instead of towards the os.

[*Edinburgh Med. Jour.*, and *Amer. Jour. of Med. Science.*

Rationale of the Saccharine Treatment of Diabetes.

Dr. John Sloane, in a paper read before the Leicester Medical Society (April 20, 1858), gives the following rationale of the saccharine treatment of diabetes:—

"Glucose, the variety of sugar found in the urine of diabetes, is generated in the livers of animals throughout the animal kingdom, almost wholly irrespective of the nature of their food. The glucose secreted by the hepatic cells passes into the hepatic veins, thence into the inferior vena cava, and through the right side of the heart to the lungs, where, being exposed to the atmosphere, it sometimes completely disappears. M. Bernard has found sugar in the livers of mammals, of birds, of reptiles, of fishes, of molluscs, and of articulated animals. He has found it in omnivorous, herbivorous, and carnivorous animals. That the secretion of sugar is independent of the nature of the food, he proves by many experiments, of which I shall mention the following. He fed dogs exclusively on flesh for six or eight months; and when they were killed, at the expiration of that period, he found as much sugar in their livers as in those of dogs fed upon a mixed diet. Owlets

taken in their nests were fed exclusively on raw bullock's liver for three months, and were then killed; their livers always contained the normal quantity of sugar. Two dogs were fed solely on flesh, three on both flesh and bread, and two on amylaceous or saccharine food; they were all killed at as nearly as possible the same period of digestion, and the results of the chemical examination of their livers showed that the quantity of sugar secreted did not depend on the nature of their diet.

"Rollo recommended the use of fat for diabetes. M. Thenard and Dupuytren made them eat lard. We have fed dogs with lard and axunge; and we have found this very curious fact, that, under the influence of this alimentation, the sugar diminished in the liver absolutely in the same manner as if the animal had been kept fasting. In dogs to which M. Bernard has given nothing but pure water, he has fouud the secretion of sugar kept diminishing, and it ceased to appear about three or four days before their death. For the first thirty-six hours, the quantity continues considerable, but during the following days it diminishes very rapidly.

"A dog, having fasted thirty-six hours, had a copious repast of boiled sheep's head, and three hours afterwards, was killed. The blood in the portal vein, previous to its entrance into the liver, contained no trace of sugar; whereas, in the blood from the hepatic veins, there was a considerable quantity. This experiment, writes Bernard, would alone suffice to cause one to admit, as a natural and necessary conclusion, that the sugar is produced in the liver; yet we have accumulated proofs of every kind about this proposition; and we have shown that the hepatic tissue constantly contained sugar, and that it was the only tissue of the body which offered this character.

"In an animal fasting, the blood which arrives at the liver presents no trace of sugar; that which leaves it contains a considerable quantity. Inversely, the blood which arrives in the lung contains sugar; and that which leaves it presents no trace of this substance. The sugar in this physiological state remains hidden between the liver and the lung, and does not show itself at the exterior. This statement is true only in an animal fasting. When the digestion commences, the quantity of sugar gradually augments; yet during the two or three hours following the ingestion of aliment, notwithstanding the increase of the saccharine secretion, all the sugar can be destroyed before it arrives at the arterial system; and it is only after the lapse of time that the production of sugar surpassing the limits of destruction becomes temporarily excessive in the organism. At this period of digestion, one finds sugar in all the vessels of the body, arterial and venous, and even in the renal arteries; but the proportion is too slight for any of the sugar to pass in the urine. Yet we shall see, that under certain physiological circumstances, the quantity of

sugar can be increased to the point that it passes off in the urine without the animal being diabetic. Under the ordinary circumstances of digestion, this species of saccharine overflowing is manifested equally with animal or amylaceous diet, and it lasts about three or four hours. It is not less than six or seven hours after a meal that the excess of sugar in the blood commences to disappear, and that the equilibrium between its production and its destruction tends to re-establish itself as before digestion. This species of oscillation, which the glycogenic function presents, it is very important to know; for in the pathological state (diabetes) we find exactly the same phases, with the exaggerations we should expect in this malady. Different observers—Rayer in France, and Traube in Germany—have remarked that there are diabetics who do not pass sugar in their urine, except at the time of their digestion; and that, in the interval, their urine does not contain sugar. This phenomenon can be reconciled very naturally with the physiological fact which has been pointed out to you. There is nothing essentially different between the normal state and the pathological symptom, save the intensity of the phenomenon caused by a deviation of vital activity.

"The sugar is formed from the albuminous substance; and this sugar is the result of the physiological action of the liver upon those principles, which are divided so that their oxygen, hydrogen, and carbon, are grouped so as to form sugar, while their azote enters into other combinations, and probably into the azotized principles of the bile. One does not know, indeed, any other origin for the saccharine matter, which cannot be produced in the intestine by digestion. Experiment has shown us that, during alimentation, by means of albuminous substances, the intestine and the blood of the portal vein never contain saccharine matter of any kind. Neither gelatine nor flesh produce saccharine matter in the intestinal tube by the known digestive processes. The amylaceous matters taken as food enter as sugar into the portal vein, and, arriving at the liver in this state, are then destroyed by this organ, and changed into another matter, which has every appearance of a fatty substance converted into an emulsion *par une matière protéque spéciale.* We have said that the sugar introduced into the intestinal tube does not augment the quantity of this matter contained in the liver, but that it is there destroyed, and causes the appearance of an emulsive substance. That the sugar introduced into the intestinal canal does not augment the quantity of this matter contained in the liver, M. Bernard shows by the following experiments. He takes two rabbits, whose urine he first finds, by testing, to be free from sugar. Into the stomach of one he injects a quantity of sugar in solution, with some ferrocyanide of potassium. Beneath the cellular tissue of the other he injects half the quantity of an exactly similar solu-

tion. He examines their urine an hour afterwards, and he finds in that of the first not the least trace of sugar, while the urine of the second presents it in considerable quantities. But you may say that this difference may be accounted for by the intestinal absorption being less rapid than the subcutaneous; but in both the ferrocyanide of potassium was readily detected in the urine. This will prove that the absorption is equally effectual in the intestine as under the skin, but that, in the first case, the solution has abandoned one of its constituents, the sugar, in traversing the liver; whereas this has not taken place in the second instance. He arrives at similar results in the following experiments. Through a small opening in the abdomen of a rabbit, he injects a quantity of the same solution into one of the branches of the portal vein; and into the jugular vein of another rabbit he injects the same quantity of the same solution. It is clear that, in this mode of operating, we cannot have any difference in the absorption, as in both cases we introduce the substances directly into the blood. Nevertheless, we obtain exactly the same result; that is to say, that in the rabbit, in which we injected by the jugular, the sugar has passed into the urine with the ferrocyanide of potassium, and with very great rapidity; whilst in the rabbit injected by the portal vein, the ferrocyanide of potassium alone will have passed into the urine, where one cannot find the least trace of sugar. These experiments are very conclusive. Bernard proves by experiment that starch, taken as food in the intestine by the influence of the pancreatic juice, becomes converted into sugar; and this passes into the portal vein. That sugar is destroyed by the liver, receives further confirmation, he states, by the facts known in the fattening of cattle. You all know that animals fatten most by the use of food in which starch predominates; that the geese and the ducks, in which the fat livers are artificially produced, are gorged with a *pâté* of maize or other amylaceous food; that the fat formed by an animal is not in proportion with the adipose matter which it takes; that, on the contrary, the animals which only eat fat, far from becoming fat, get lean rapidly. Hereafter it is not only the biliary secretion which we shall have to look upon in the liver; it has two other functions of capital importance—one the production of sugar, which is dependent upon the aliment containing albuminous matters; the other, the production of fat, which is dependent upon the amylaceous and saccharine matters in the food.

"Cane-sugar is never destroyed; it is constantly eliminated by the urine when it is injected directly into the blood; but this sugar, when in the intestine, is in part, at least, transformed into glucose. The latter, on the contrary, injected into the blood, can be destroyed in certain proportions.

"When we prick the mesial line of the floor of the fourth ven-

tricle, in the exact centre of the space between the origins of the auditory and pneumogastric nerves, we produce an exaggeration of the hepatic (saccharine) function, and of the renal secretion; if the puncture be effected a little higher, we very often only produce an augmentation in the quantity of the urine, which then frequently becomes charged with albuminous matters; while, if the puncture be below the indicated point, the discharge of sugar alone is observed, and the urine remains turbid and scanty. Hence it appears that we may distinguish two points of which the inferior corresponds to the secretion of the liver, and the superior to that of the kidneys. As, however, these two points are very near to one another, it often happens that, if the instrument enters obliquely, they are simultaneously wounded; and the animal's urine not only becomes superabundant, but at the same time saccharine. The urine becomes saccharine in from one to two hours after the operetion, but seldom continues for more than a day.

"The secretion of sugar is not under the direct influence of the pneumogastric nerve; for if it be divided before irritating the floor of the fourth ventricle, sugar still appears in the urine. Bernard believes that the influence is transmitted by reflex action through the ganglia of the sympathetic.

"There is a phenomenon which is manifested, for example, when, after fasting a certain time, a great quantity of sugar is taken. The intestinal absorption then proceeds with extreme rapidity. A great quantity of sugar arrives in mass in the liver; the mechanical circulation much prevails over the chemical; the sugar is poured into the general circulation in proportion much greater than occurs in the normal state; and it passes then into the urine, where its short-lived presence can be found for a certain time.

"M. Bernard, after a great many experiments in reference to the subject, has proved that there is a species of election in the excretion of matters which pass out of the organism. Sugar is eliminated in two ways only—by the kidneys, and by the mucous membrane of the stomach. When sugar is injected into the blood of an animal to saturation, and puts it for a time into a state of diabetes, we do not find sugar in the saliva, in the tears, pancreatic juice, bile, nor perspiration; whilst the urine and gastric juice contain it in proportions more or less notable. These results entirely resemble those obtained in diabetic patients. Lehmann states, however, that he has obtained sugar from the saliva of a diabetic. The presence of sugar has been pointed out in the expectoration of diabetes. Bernard admits that sugar can be had in notable quantity in the expectoration. But, he writes, we must not confound the bronchial mucus which these patients, almost always phthisical, in the last stage of the disease expel in

abundance, with the salivary secretion properly so called; it is the mucosities formed in the lung which contain the saccharine matter. Nevertheless, this fact is not constant; for M. Rayer has reported to the Society of Biology a case in which the expectoration of a phthisical patient examined by M. Wurtz did not contain sugar. Bernard proves by the following experiments the statements regarding the election in excretion of matters which pass out of the organism.

"He takes a dog with a parotidean opening, into which he inserts a tube. Nothing flows by this tube, which proves that the secretion is not continuous. By putting in the mouth some vinegar he excites the flow of saliva, which passes out of the tube rapidly in large drops. He next injects into the jungular vein of the animal a solution containing sugar, prussiate of potash, and iodide of potassium. Immediately after this injection the salivary secretion is again excited in the same way. The saliva is received into three glasses. One is examined for sugar, and none is found. The sugar therefore does not pass in the saliva. The second is examined for prussiate of potash, and it is not present. The third is found to contain iodide of potassium. This substance then passes immediately into the saliva, whilst the prussiate of potash and the glucose, equally soluble, cannot be found. In the saliva extracted before the injection, none of the substances exist. In the urine of the same animal after the injection the prussiate of potash is found in considerable quantity, and the iodide of potassium in small proportion. As regards the sugar, there is none yet, but we shall find it presently. It requires an hour or more for the sugar to appear in the urine.

"The urine then eliminates all these substances in a manner more or less rapid. The prussiate of potash appears first and the glucose last.

"There is another secretion in which the presence of sugar can be found; this is the gastric. The passage of the sugar into the stomach has surprised most of the observers who have seen long since that when diabetics vomited, although they had eaten nothing but flesh, the vomited matters were saccharine. When it was believed that diabetes proceeded from a perversion of the digestive functions, it was considered that the flesh was changed into sugar in the stomach. But one need not now be mistaken; the flesh is not saccharine. Bernard himself has observed that, in diabetics who vomit fasting, in the vomited matters the presence of sugar could be found. But this has only occurred when the disease is at its greatest intensity; and in all those cases, even in the animals which have been rendered artificially diabetic, it is much more difficult to obtain the passage of glucose into the gastric juice than into the urine.

"The sugar is formed, as we have seen, at the expense of the

albuminous substances. In the healthy man it is clear that a part only of these matters is consumed for this purpose. The diabetic who forms much sugar expends a very large quantity of azotized material; the blood is impoverished; and, although the patient eats enormously, he gets thin like a man badly nourished. The liver takes in a manner the ration of the other organs, which undergo a considerable attenuation, because the albuminous elements are transformed into sugar.

"M. Bouchardat has proscribed the use of amylaceous and saccharine matters in the food of dibetics. The facts which Bernard has himself witnessed in the practice of M. Rayer proves clearly the utility of azotized aliment. In the regimen of these patients, writes Bernard, vegetable aliments ought to be forbidden, as it is evident that they augment the functional activity of the liver. You know, also, that they are excitants of the kidneys; that they are much more diuretic than animal matters. Thus all the herbivora pass much more urine than carnivorous animals. In the azotized regimen diabetics have the advantage of food which is not diuretic.

"I have at great length reminded you of M. Bernard's views regarding the formation of sugar in the animal economy. As some of them are of so novel a character, and so little in accordance with the notions formerly held, I have thought it advisable to mention the experiments upon which he founds his opinions. That they will, upon further investigation, be more or less modified, is not improbable; but they have been very generally received by the most distinguished physiologists and pathologists.

"From M. Bernard's investigations, we learn the following facts of importance in reference to the saccharine plan of treating diabetes:—

"1. Sugar may be rationally administered to diabetic patients, inasmuch as the sugar found in the general circulation is almost always secreted by the liver, and as sugar introduced into the intestinal tube in its passage through the liver is there altered and converted into an emulsive substance, which serves to fatten these patients, and thus to counteract their tendency to emaciate.

"2. Substances which contain glucose—such as honey and fruits, should be given to diabetics in preference to those containing cane-sugar, because the latter is not destroyed when injected into the blood, but is constantly eliminated by the kidneys; whereas glucose can be destroyed in certain proportions.

"3. Cane-sugar would be beneficial to a certain extent; as when taken into the intestine it is in part at least transformed into glucose; but if given in too large proportions to be thus completely transformed, the disease would be probably aggravated by the presence in the blood, and subsequent excretion by the kidneys, of the former variety of sugar.

"4. The glucose should be given in moderate quantities at a time, and frequently, rather than in large quantities at long intervals; because, when much sugar is taken fasting, it is absorbed too quickly to admit of its complete destruction in the liver, and it passes into the general circulation, whence it is eliminated in urine."—*British Med. Jour.*, and *American Jour. of Med. Sciences.*

EDITORIAL AND MISCELLANEOUS.

End of the Fourteenth Volume.—The present number closes the Fourteenth Volume of the *Southern Medical and Surgical Journal.* While carefully reviewing the accumulated results of our labors during the past year, as we have been obliged to do in the preparation of the final Index, we can but feel encouraged by the high style, practical character and great value of many of the original papers kindly furnished by contributors. The true intent and purpose, of a medical journal, as we conceive them, are never so fully carried into effect as when its original communications present a clear, full and reliable exposition of the Pathology and Therapeutics peculiar to the region in which it is published. There is perhaps no circumstance which strikes the mind more forcibly, when opportunity for observation is allowed, as the difference impressed upon the type and progress of disease, and no less on the treatment required, by the change of locality. The fevers of the Northern climates would, we opine, but illy bear the active medication found necessary at the South, while our endemics would fare badly, if the temporizing precepts of our northern brethren were not mended to meet the dangerous, and often fatal tendencies, impressed upon them by our peculiar climatic and thermotic influences. Medical journals, then, must record these differences, if they would attain their full degree of usefulness in their own region, or supply to other and more distant regions a faithful report of the history of disease in their immediate vicinity.

But a restricted record of local medical facts and precepts would not fully answer all the demands of even, a local journal; the neglect to embody in its pages a portion of the vast amount of valuable information accumulating in other portions of the world, would deprive its readers of much which justly belongs to them. The Eclectic department therefore, becomes no less important than the Original, and when this is carefully and judiciously conducted, a monthly medical journal can be made to supply a greater variety of practical and useful information

than can be made available by the practitioner, who is actively engaged, even from the largest and best selected library.

To such a purpose, we have earnestly endeavored to devote the pages of the *Southern Medical and Surgical Journal*, and to the same end, we shall endeavor to labor during our connection with it in the forthcoming fifteenth volume. With this view, we ask the assistance of the Profession, not only in extending the encouragement of *prompt payments* to our faithful and liberal Publisher, but also, we, as Editors, invite contributions, which shall enhance its scientific value, and keep it, as it has heretofore been, a store-house, full of valuable practical information for readers, not only at home, in the South, but in the North, the East, and the West—wherever its pages may be perused.

Our present number has been detained somewhat beyond its usual time in the preparation of the Index to the volume. For the delay, the Editors are alone responsible;—the work of the publisher was fully ready at the usual time of issue. Book notices, and much other Editorial matter, are necessarily delayed for our next number.

Chloroform in Dentistry.—There is an impression abroad amongst dentists that every man is his own keeper, and that his life is in his own hands. Lamartine says that it is strongly characteristic of the weakness and imperfection of humanity, and typical of our earthly nature, that man comes into the world impotent to save himself, or to add one day to his life when beneath the edge of the mortal shears, destitute and helpless, but armed with the power of annihilation and self-destruction. This privilege the dentists of some sort are disposed to grant freely to their dupes. Chloroform is undoubtedly a mortal agent, an agent which may become inimical to life. Its risks have but too frequently and too fatally been shown by many recent accidents, and especially by the unhappy death at Epsom on the 27th ult, of a person, to whom it was administered by a druggist. There is a moral as well as an intellectual side to our art, and to the art of the true dentist. It is time that the ethics of chloroformization were established. The extraction of a tooth is not an operation which in any way bears upon life; it is not in itself attended with any risk. The deaths which chloroform has occasioned, when administered to facilitate this process, are unbalanced by any corresponding gain of equal import. The moral duty of the dentist is therefore clear. He has not the right to risk the patient's life for the extraction of teeth. The timidity of the patient or her pressing entreaties are not more germane to this consideration of duty than her rank or her wealth would be. In the cause of life everything is permissible. It is justifiable to refute the arguments of her ladyship; it is right to give a flat denial to her grace. However crooked those cruel fangs, they are less pitiless than the fangs of death; and though the patient turns rebellious from the door, it is better than that she should have found there

"that bourne whence no traveller returns." It is chiefly our fashionable ladies who demand chloroform. This time it was a servant girl who was sacrificed; the next time it may be a duchess. If a patient should press urgently for any dangerous poison it would not be administered to her, notwithstanding her own personal responsibility. Nor should chloroform, although only probably dangerous to life. Henceforward we think that this must be looked upon as a matter of conscience amongst operators. To our thinking they are bound to withhold chloroform for the extraction of teeth by every consideration of right and moral responsibility.

[*London Lancet.*

Castration for Malignant Disease.—The diseases which may lead to the necessity for castration, as given in Mr. Curling's work on "The Testis," are the different forms of carcinoma, incurable struma, abscesses, and tedious sinuses consequent on inflammation, and cystic disease. We have given clinical records of most of these from time to time; but the most common form which demands this operation is carcinoma, and not unfrequently the medullary form. We saw the right testicle removed on the 10th ult., at Guy's Hospital, by Mr. Cock, from a man twenty-five years of age, who was married and the father of a family. His general health was good; but eight months ago he first noticed an enlargement, and this gradually increased, until latterly it has become rapidly much larger. There was no history of having received a blow, and there was no pain; there was a degree of fluctuation about it which indicated a surface of fluid. A needle was introduced a few days before, which gave exit only to a little blood. Mr. Cock suspected it to be malignant; for besides the suspicious character of the nature of the swelling, the cord was enlarged. An incision was made over it, and then a section into the body, when the gland was found to be completely disorganized from soft cancer. It was, therefore, removed, the vessels of the cord being tied before the tumour was detached. The cord consisted principally of a mass of tortuous veins in a varicose condition, but was not otherwise affected, and therefore held out a favorable prospect of cure from the operation.

In Mr. Coulson's case, the testicle was extensively diseased, as a result of inflammation, and removal was equally imperative, as in the foregoing instance.—[*Ibid.*

Traumatic Diabetes.—Dr. Plagge relates the case of a young man who received a blow upon the occiput, and the following night complained of strangury. Three days after he suffered from excessive hunger and thirst, and passed large quantities of urine, of the sp. gr. of 1·043, containing much sugar. His condition remained stationary in spite of the employment of opium, tannin, and an animalized diet. A drachm of the bicarbonate of soda (the urine being slightly acid) was then given to him daily, and he considerably improved. Nevertheless, the quantity of urine continued in excess during two months.—[*Gaz. des Hôp.*, and *Virginia Med. Journal.*

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