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Paulum sepultae distat inertiae celata virtus.—HORACE.

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ORIGINAL COMMUNICATIONS.

Article I. *On the Pathology of Fever; its Fermentative Origin and Nature.* By W. Hutson Ford, M. D., of New Orleans.

In two papers, which may be regarded as introductory to the present one, I have endeavored to show:

1st. That (in accordance with obvious movements in Physiology) oxidation is not the exclusive, or even the chief source of nerve-muscular polarity, or of heat, in the animal body, as maintained by Liebig's school, but merely a condition of the manifestation of such polarity; while it is directly a source of heat, principally and perhaps solely, when it affects certain products of metamorphosis.

2d. That the prime function of plant life consists in the transformation of crystalloid matters under the deoxidizing influence of the sun's rays, into various nitrogenous and carbonous colloids. (*Collosis.*)

3d. That the prime phenomenon of animal life consists in the restoration of the oxygen, separated by the plant, to the nitrogenous colloids (or to certain of them) of the nerves, muscles and blood-plasma, as the precedent of a sudden (as in force-generating material) or gradual (as in heat-generating material) disruption of colloids into crystalloidal products, which are themselves fully oxidized before excretion. (*Crystallosis.*)

4th. That in these acts of crystallosis, all nerve-muscular force and the greater part of the heat of animals is extricated; that all this force and heat has come directly from the sun; has been stored up in colloid matter by plant action, the colloid mode of aggregation being significant of exalted dynamic potentiality, that these forces are simply *liberated* in the animal economy, and that "vital action" so-called, *can generate no kind of material force.*

5th. That the crystallosis of fully oxidized nitrogenous colloids is characteristic of the normal acts of "retrograde metamorphosis," in the animal body, but that carbonous colloids likewise undergo crystallosis (fermentation) in the fluids and organs of animals—in the first instance with production of polar excitement and heat, in the second with production of heat alone.

6th. That the crystallosis of nitrogenous colloids out of the body, after complete or partial oxidation of a *very small portion* of their mass, manifests itself in the phenomena of *putrefaction* (*septic-crystallosis*), and that carbonous colloids, in contact with such nitrogenous colloids, themselves undergo crystallosis (*fermentation*).

7th. That a nitrogenous colloid, in the absence of oxygen, may remain wholly unchanged for any length of time; but if oxidized, completely or partially, must *of necessity* undergo crystallosis. If the oxidation be complete, its crystallosis will likewise be perfect, reproducing substances strictly representing those out of which it was originally formed in the plant by the *abstraction* of oxygen (ammonia, nitric acid, carbonic acid and water). But if oxygen be deficient, septic-crystallosis will be established, both in the animal body and out of it. (*Putrefaction.*)

8th. That the crystallosis of nitrogenous colloidal matter is induced by the contact of nitrogenous material undergoing septic-crystallosis (*ferment*) as well within the body as out of it.

9th. That the first observable effect of the contact of such ferment with quiescent colloidal matter is a marked, indeed, irrepressible exaltation of the (natural) affinity of colloid nitrogenous matter for oxygen; this substance being absorbed with avidity. (*Phenomena of yeasting and fermentation.*)

10th. That simultaneously with this exaltation of affinity for oxygen, there is established, a marked disposition, among the colloidal atoms to break up into crystalloidal forms which will be fully oxidized or not according to the quantity of oxygen present.

The products depend upon the intimate constitution of the colliod, and upon that of the ferment.

11th. That a great variety of ferment influences are normally operative in the digestive canal and in the various organs and fluids of the body, productive of various modes of crystallosis, all of whose products are naturally fully oxidized *previously to excretion.*

12th. That the force-generating material of the nervo-muscular apparatus is fully oxidized before resolution into crystalloids; but that the various ferments absorbed into the blood, and the blood-fibrine likewise, are fully oxidized, *pari-passû* with their crystallosis.

To these I will now add some further propositions, which I regard as necessary for a full exposition of my views, particularly disavowing all desire to dogmatize; indeed the reader will perceive, I hope, that they are thrown into this form solely for succinctness, as a detailed consideration of each would be quite incompatible with the proper dimensions of such current writing as the present. The importance of the matters considered, and the stress under which the thoughtful medical man labors, for rules and laws, as yet not completely established by the naturally tardy, though careful progress of pathological experimentation, must serve as my excuses.

There are four prime characteristics of fever, viz: Nervo-muscular hyposthenia; vascular turgor; accelerated cardiac action, and augmented temperature. These are present in every form of fever, though by no means always simultaneously. Fever, consequently is a *unit*, a certain mode of pathological action, which may be engrafted upon the most different crases of the system. There seems to be *absolutely no condition* of the body in which fever may not be kindled.

Fever is a natural mechanism, a pathological expansion of a physiological one, of exceeding importance, inasmuch as during its accomplishment, all tendency to septic metamorphosis within the organism, is overcome by the complete disruption of whatever colloid material becomes by any mechanism affected with such a tendency.

This tendency, or one very closely allied to it, normally obtains with regard to certain constituents of the blood, (fibrine, ferments absorbed from the intestinal canal, liver ferment, lymph, &c.) Such matters are daily secreted, and constantly resolved by an act of crystallosis, (mainly or exclusively in the liver,) being excreted only after full oxidation. The grade of blood oxygenation must vary, within normal limits, inversely as the amount of such matter resolved at different times into oxidizable crystalloids.

A certain quantity of the colloid elements of the blood is thus continually affected with an *irretrievable* tendency towards disruption, which would surely assume the form of sepsis, were oxidation inadequate, or were these substances not taken up promptly by the liver cells and transformed under special and normal agencies, as soon as the tendency becomes established, into crystalloids which easily escape by the emunctories, (glycogen, and its products, carbonic acid and water, biliary acids, and uric-acid; by oxidation, *urea.*) The organism must, consequently, be regarded as forever *on the verge of sepsis*, from which it is protected by free oxidation, and normal hepatic action.

If the oxidative power of the blood be impaired, whether by defect, destruction, or paralysis of blood corpuscles, or by mechanical derangements of the circulatory or respiratory organs, a tendency to sepsis will be sooner or later established throughout the body.

Noxious gases in the air, (oxidizable, blood-corpuscle-paralyzing, &c.,) by inducing and maintaining a state of hypo-oxygenation, will thus prevent the accomplishment of the physiological crystallosis, of the blood-material spoken of, inducing a tendency towards sepsis.

Mere stagnation of blood, in sacs or cavities or within the vessels (passive congestion) being sooner or later equivalent to hypo-oxygenation *of the blood so stagnant*, will cause the development in the stagnated blood of a tendency to septic crystallosis, which will be disseminated through the system, by means of *lymph derived from it, and similarly affected.* When local stagnation occurs, of inflammatory nature, a tendency towards sepsis will be likewise generated, both in the stagnant blood and in the lymph derived from it.

Many facts support the opinion that cell action and proliferation are not impeded by the establishment of the tendency to fermentation of which we are speaking, in colloidal matter; there are many which seem to show that in fluids so disposed, even a remarkable activity of cell genesis is displayed. (Bernard's views of animal germination, development of torula and mycoderma; infusoria; bacteria, &c.) The liver itself, which is conspicuously the seat of important and active fermentations, is the source of countless cellular elements poured out through the hepatic veins.

Fever cannot arise from mere nervous commotion; as fever is a unit, always the same mechanism, though varying greatly in the degrees of its special characteristics, since these are affected by the different systemic states upon which it is engrafted, so is the cause of fever always the same, viz: plastic matter affected with a tendency to septo-crystallosis, (putrefactive-fermentation) engendered within the organism, or introduced into it, dried or fluid, through the tegumentary respiratory, or mucous tracts.

As the stagnation of blood necessarily results in the development of a septo-crystallotic tendency in the blood and lymph of a part, so must all inflammation qualified by *stasis* be characterized by this state of its stagnant fluids. Where the circulation (hæmal and lymphatic) is not materially impaired (incised wounds, union by first intention) the oxygenation of the part being consequently maintained, no such tendency, or very little of it will be generated. Union by first intention is not accompanied by fever.

The absorption of the products of purulent inflammation gives rise to one of the gravest forms of fever.

There is abundant reason to believe that *true inflammation* (purulent) does not occur unless a septo-crystallotic disposition be imparted to the lymph of the part by internal or external mechanisms.

When the blood is affected with this tendency (fever) if local congestion amounting to stasis, or nearly so, occur, a propagation of such tendency from the blood and lymph to the solids of the part is affected—stasis runs into inflammation, an exceedingly common complication of fever of grave forms, where hypo-oxygenation is most pronounced, and the septic disposition likewise. (Typhus, malignant-scarlatinà, yellow-fever.)

The liquor-puris generates fever, when introduced into the system; fever due to local inflammatory action, will induce similar inflammatory action in a congested part elsewhere, (metastasis.) A febrile condition kindled by local inflammation, will react upon that inflammation, inordinately exalting it; profoundly impressing the local action with a tendency to sepsis and formation of pus. Not pus alone, but any inflammatory exudate (peritoneal, e. g.,) will generate fever when injected or absorbed into the blood. (Orfila, Schiff, Burdon-Sanderson, Bouley, &c.) These plastic products may be possessed of varying degrees of ferment power. (Zymotic.) Indeed, this power seems, from certain late experiments to be capable of the most amazing exaltation.

Fever and inflammation (with tendency to form pus) *are similar, perhaps fundamentally the same states* of the fluids primarily or secondarily; thus, fever may arise from local inflammation, or may give rise to local inflammation; so, also, inflammation may generate fever, while itself due to some directly septic impression. (Absorbed putrid matter, action of putrescent matter due to crushing of parts with local necrosis.)

Grave inflammations are observed mostly in severe fevers. Mild fevers may ensue from almost any amount of local inflammation, provided some degree of stasis be present, according to the susceptibility of the blood, the degree of its oxygenation, and the integrity of the functions generally.

There are two forms of febrile hyposthenia—one which qualifies the febrile state and underlies it at all times, showing itself even through the excitement of reaction—the other is subsequent, and simply the result of previous waste. This waste implies loss of material under laws of the economy whereby all matter once touched with a tendency towards septic-crystallosis, is forthwith resolved into its crystalloids and suffered to escape by the excretory organs, in the mechanism we term "*fever*."

The primary and fundamental hyposthenia of fever is due to a constant appropriation of oxygen by *fluids and solids* excited to crystallosis by the contact of the *ferment matter of the blood*, in the absorption of oxygen which qualifies all colloid matter so affected; also, to the withdrawal of oxygen from the general store of the blood, by the results of the transformation (in the liver, etc.,) of such excited colloid matter, these products being carbonous and nitrogenous crystalloids demanding oxidation. So much oxygen is thus taken from the blood, and with so much power, in virtue of the general exaltation of affinity for oxygen which qualifies all colloid matter to which a ferment has been applied, that the blood is maintained from first to last, during the febrile reaction, in a state of defective oxygenation, *quoad* the system at large; and the nervo-muscular apparatus is inadequately supplied with oxygen. Much of the general hyposthenia of fever, after a day or two, depends upon the small amount of force generating-material remaining subject to nervous mandates. As the amount of this material, and the general strength of the system at any time is represented by the difference of *rate* in the nutritive and destructive processes, so in fever, however active the formation of such material may be, as shown by the rapid exhaustion of the plastic elements of the blood—inasmuch as waste is quite as much enhanced, a very scanty residuum of material remains subservient to the commands of the nervous system. A low grade of all nervous and muscular action must consequently obtain, however conspicuous the phenomena of irritability may be. Although in fever with high-reaction, digestion and chylification are arrested, I am convinced that *cell-nutrition generally is very much augmented in rapidity,—like the tissue waste.* As no new pabulum enters the system from without, the blood is sooner or later exhausted of its plastic elements, according to the grade of heat and duration of the morbid state.

It will be perceived that the views set forth are fundamentally Liebigian, except as regards the origin of force from oxidation. This particular hypothesis has been formally repudiated within the year by the late German master of this domain. Nothing I have said contemplates the origin of fever in the action of any "poison" or toxic matter directed to the nervous system primarily, unless plastic matter endowed with ferment power be loosely spoken of as "*toxic.*" Poisons and medicamentous substances, properly so called, are all crystalloid, resinous, or oilly; they never seem to be colloidal. A virus, accepting Chauveau's definition, is always colloidal; but is moreover a well defined anatomical element, capable of imparting the peculiarities of its own mode of nutrition to other anatomical elements of the body. (Virus of syphilis, vaccine, variola, glanders, etc.) Burdon-Sanderson has shown that the septicœmic poison is a colloid, incapable of passing through membranes. Its wonderfully enhanced activity, after successive reproduction in animal bodies, seems to be quite analogous to that notable enhancement of the powers of yeast which is known to take place by a successive yeasting of portions of similar material prepared from malted grain. Two or three successive yeastings very remarkably exalt the fermentative power of the final yeast. The method is systematically practised by distillers.

According to these views of the exclusive origin of febrile phenomena in fermentative dispositions and actions of the economy, the prevention and cure of fever must depend upon the proper application of antiseptic remedies, if fortunately, such can be directly introduced into the system (cure of intermittent fever by subcutaneous injection of aqueous solution of carbolic acid), in combination with measures designed to maintain strength, prevent waste and conserve force. There is already a marked bias among practical men in this direction.

Although fever is thus essentially produced and maintained by what we may term fermentative infection, and although, consequently, the direct influence of any form of virus, or of crystalloid matter, in producing this state cannot be admitted, it is not at all impossible that truly poisonous crystalloids may arise within the system during fever, by abnormal fermentative agencies. Uric acid, whence by oxidation urea is derived, is now known to be generated in the liver, either exclusively or almost so. (Cyon Meissner, &c.) The liver is the seat of most active and constant fermentative operations, both in health and disease. In fever, fermentation prevails in all the fluids, and if any urea be formed, it must be fermented into carbonate of ammonia, well known to be hostile to the nervous system. If, in consequence of the prevalent deficiency of oxygen in fever, uric acid be not changed into urea, there is good reason to believe that the substance may be modified by blood-fermentation. Uric acid is a cyanogen compound. By dry distillation it is resolved into carbonate of ammonia, hydrocyanic acid, urea, and cyanurenic acid. The dangerous action of hydrocyanic acid and the cyanides upon the blood and nervous matter scarcely requires mention. It is quite possible, therefore, that the blood and nervous system may become gravely affected through such a mechanism, or *others similar to it*, in the progress of fever. The intense and irretrievable prostration of the second stage of yellow fever may be attributable to some such agency in part, as well as to the paralysis of blood corpuscles by various influences, and their dissolution in the presence of superabundant biliary acids. All this, however, is really subordinate to the proper pyrexial phenomena.

I have stated my convictions that fever, in all its grades and modifications, is kindled by an admixture with the circulating fluid of closely allied forms of plastic matter impressed with a fermentative disposition in varying degrees; the proposition being thus extended to include fevers dependent upon the external application of septic matter, as well as the entrance of similar matter into the circulation by a channel which I have not as yet specified. I wish now to advance a step, in declaring that this channel is, in nearly every case, the lymphatic or lacteal vessels, and that the lymph itself, endowed by peculiar abnormal influence with a tendency towards septic fermentation of very varying grades of potency, is the true ferment of fever.

The views of Hunter and Hewson, revived by Majendie, respecting the nature of the lymph, may be regarded as now re-established, in part, though strongly opposed by Carpenter, and Moultrie, of South Carolina, and, of course, by all physiologists laboring under what I conceive to be mistaken hypotheses respecting the nutritive value and destination of this fluid, and impressed by the similarity of the fibrine which is elaborated in it and seems to be its most important constituent, to the "syntonin," so called, of muscular tissue. The fact that fibrinous exudates never become highly organized, that the cells generated in such exudates soon deliquesce, while the exudate itself is especially prone to softening, to partial absorption, and to cretifaction, long since sufficed to cast grave doubt upon the nutritive value of the material to the economy. While its fibrillation seemed to be the first stage of organization, its easy putrescibility by no means favored the hypothesis of its pabulous nature, so far as the main tissues are concerned. In 1854 Lehmann determined, that while a third of the albumen entering the liver by the vena portæ disappears from the blood in that organ, not a particle of fibrine passes into the hepatic veins. Fibrine disappears in the liver, while at the same time that organ becomes charged with glycogenous matter, and pours a steady stream of saccharine blood into the general circulation. To account for the loss of fibrine, the liver now contains glycogen and glucose, its derivative; uric acid and urea; fat and the biliary acids. The albumen lost is represented by a mass of cellular elements found in the blood of the hepatic veins, and so abundant as to give rise to an appearance of coagulation in the fluid, while not a particle of stringy fibrine, according to Bernard, can be whipped out of it.

Fibrine (with some albumen) represents the lymph; if, therefore, fibrine be converted into matters plainly destined to excretion, by hepatic action, lymph must evidently be regarded as a waste product of the economy, as far as its most characteristic element is concerned. Fibrine seems to have other uses in the body, however, which it subserves while on its way to final disruption. Its presence in the blood seems to prevent migration of red blood corpuscles (hæmorrhage follows both morbid and experimental defibrination of the blood); it forms a ready plug to divided vessels, and a glaze under which normal action first begins on wounded surfaces. In the interstices of its fibrillary mass, development of repair-cells becomes first apparent; and I think it is by no means unlikely that some of the most important fluids of the body, the special ferments of the buccal and digestive cavities, are formed from fibrine, while it constantly acts, I shall endeavor to show, as a ferment in certain normal fermentative movements of the circulating fluid. As fibrine is evidently, therefore, a waste product, subserving useful though incidental purposes previous to final disruption, the fluid in which it first appears, and normally undergoes important changes, must partake of the same general character. We are, however, practically limited to a consideration of the "*fibrine*" of the lymph, for nothing whatever is known respecting the albuminous element of that fluid.

While, now, it is readily conceivable that the lymph of a part may become so affected by inflammatory action as to assume the character, in varying intensities, of a fever-ferment, inasmuch as it is directly drawn from the tissue-spaces, and when disseminated through the blood may propagate its fermentative disposition, so that the origin of a vast number of *phlegmasial pyrexiae*, of very different tendencies and intensities, may thus be roughly accounted for, it is by no means, at first sight, easy to comprehend how the lymph acquires a septic disposition adequate to impress the blood and tissues similarly, in the case of fevers which make their appearance without precedent inflammatory action or local stasis, as happens, indeed, in some of the gravest forms of fever. I shall, therefore, offer a few considerations tending to prove that the idiopathic fevers, with one or two exceptions, perhaps, occur under two antecedent and persistent conditions really correlated (though by what mechanism need not be dwelt upon at present), viz., so-called "*gastric embarrassment*," and *general hypo-oxygenation of the blood.* Neither time nor space will permit me to do more than sketch very briefly, in this paper, the relation I conceive to exist between the above conditions and the origin of the idiopathic fevers, though highly sensible of the great extent and importance of the questions involved. I must even forego the citation of many important facts bearing upon the subject, especially upon the nature of the lymph, already touched on; its general disposition to become the vehicle of infection; its easy putrescibility, most conspicuous in its fibrinous element, and its higher susceptibility to putrescence when derived from the blood of meat-fed animals than from that of animals kept upon a vegetable diet. It is barely requisite to state that the chyle and lymph, during fasting, are doubtless the same fluid, being at least in no way distinguishable; while, during digestion, the two fluids, fundamentally and physiologically the same, really differ very notably in what may be regarded as secondary characteristics. The lymph of digestion (chyle) may be regarded as ordinary lymph with all its natural proclivities, to which fat, in a molecular form, the elements of the bile, perhaps, and possibly some of the partially or wholly spent gastro-intestinal ferments, have been added.

The *exceptions* alluded to above, with regard to the origin of idiopathic fevers in the two conditions specified, were intended to include the three contagious exanthems and "mumps." This latter affection we must regard as contagious; the local manifestations precede the development of the fever in the great majority of cases. Rilliet and Barthez, justly, I think, define the malady "as a sanguineous flux terminating in acute œdema, *or* by inflammation, occupying principally the cellular tissue of the salivary glands, and sometimes these glands themselves." At the same time, whether primitively or secondarily it is difficult to say, the lymphatic glands surrounding and imbedded in the parotid, those lying under the angle of the jaw, as well as the tonsils, are engorged. Whatever the essential nature of the disease, therefore, the lymphatics are, sooner or later, according to some authorities, primitively affected, and the local symptoms vary with the intensity of the consequent febrile action.

In measles, the irritation and congestion of certain mucous tracts is well known to precede the outburst of the fever. I do not wish to imply that such primary congestions are in any way inductive of the disease, which appears to be indisputably due to a special morbific matter, but I must, at the same time, remark, that the fever of measles is by no means the basic movement of the malady, upon which it is simply engrafted. The "*materies morbi*" is the true cause of the primary irritation of the conjunctivonasal, the pharyngeal and laryngo-tracheal mucous membranes, as well as of all the further specific phenomena of the disease, while the cause *of the fever* may, I think, be recognized in lymph absorbed from such irritated surfaces or organs, which, in the progress of the affection, comprise the whole cutaneous surface, much of the mucous surface, and some of the great parenchymatous organs.

To scarlatina, altogether similar remarks apply, and likewise to small pox. The characteristic and individual eruptive "*travail*" going on in the fluids and solids, perhaps, from the moment of infection, brings about in certain organs and on certain surfaces special modes of inflammatory action, or at least primarily of congestion. The lymph absorbed from such irritated or inflamed parts is, from first to last, the cause of the fever, even of the secondary fever of small pox, or of anginose scarlatina: local irritation more or less disseminated is followed by congestion and inflammation (erythematous, papular, vesicular, pustular, parenchymatous, etc). Fever is quickly established, being maintained by the wide-spread local action, varying with it, and partaking of its special qualities, at the same time reacting upon the local phenomena, precipitating and aggravating them. The fever, therefore, is altogether an epiphenomenon, dependent upon the eruptive "*travail*," but not necessary to its accomplishment, as every practical man knows.

In measles, the opthalmia, coryza, angina and bronchitis (*rougeole sans catarrhe*) do, sometimes, not appear; there is, consequently, little or *no fever;* "the whole disease then consists in the eruption alone (Grisolle, T. 1, p. 79). While veratrum may be employed, so as to maintain the heart's action and temperature, in measles, at their normal grade; and the pulse at even less than its natural rate, with great benefit to the patient in many respects (I frequently do this); the eruption nevertheless makes its appearance at the usual time and with the customary intensity.

The fact does not seem to have been observed, of the occurrence of the *scarlatinal* exanthem without fever; but small-pox-inoculation, often conducted formerly without supervention of any febrile phenomena, conclusively establishes the independence of the processes involved in the *eruption*, from those of the fever, usually produced, though not necessarily, by it. In such non-febrile inoculation the "systemic" sympathy, or perturbation, was nevertheless betrayed by the usual sign of gastric embarrassment. The progress of vaccinia is almost invariably non-febrile; the occurrence of fever, indeed, leads to doubt respecting the genuineness of the impression, as well as to fear lest a genuine impression be thus vitiated.

Though it is not possible to designate the proximate causes of gastric-embarrassment, the condition is familiar enough. We find the mucous membrane of the mouth, stomach and intestines congested, while glandular action is repressed and modified. The peristaltic actions of the digestive tract and its appendages seem diminished or arrested. Bile distends the liver but fails to pass into the intestine; the saliva is scanty and nauseous; digestion is imperfectly performed, and appetite is perverted and lost. When food is taken in this condition, as the naturally antiseptic action of the gastric juice and bile is deficient or absent, in consequence both of the perversion and failure of these secretions, indigestions resulting in fermentations and putrefactions of the ingesta, commonly occur. The secretions of the gastro-intestinal tract, notably those of the duodenum and pancreas, whose "*succus*" is at once the most active of ferments, and most *putrescent fluid* of the body, when mingled with such improperly digested matter, acquire its septic tendency, if, indeed, they had not been affected previously by an inceptive sepsis due to absence of the prime antiseptic fluid, viz., the gastric juice. Chyle formed under these circumstances must become similarly disposed, and eventually propagate its septic disposition to the blood. Meanwhile, the septically disposed peptones are absorbed by the veins and borne into the liver, notably perturbing hepatic action, or adding a new disturbing element to previous morbid movements The danger of eating "high" game, or stale fish, is known to be doubly great during an "embarras gastrique." In virtue of the failure of the necessary gastric antisepsis, the result is commonly colics and diarrhœa, nearly always qualified by more or less fever. Such fever must be attributed to the absorption of septically disposed chyle. An "embarras gastrique" invariably precedes an access of intermittent fever, even in the spring, and constantly persists between the paroxysms. When the tongue cleans, the fever fails to reappear. These facts I state, unfortunately, from long individual experience. The access usually takes place on the *day after* decided lassitude is felt, but on the *same day* on which loss of appetite occurs.

Bilious, yellow, and typhoid fever, are preceded by marked derangement of the digestive functions—Grisolle maintains, on the other hand, that gastric embarrassment, when neglected, may run on into *typhoid fever* (a statement I am not quite disposed to accept,) and also, that gastric embarrassment is often accompanied by fever in the evening.

It must not be forgotten that during a saburral state of the stomach and intestines, as neither bile nor gastric juice are secreted in normal quantity or quality, the *mucous* of the digestive tract itself may become septic—and especially must this obtain for the pancreatic juice, well known to be exceedingly prone to decomposition. Nor do I think it unwarrantable to suppose, that as the mucous surfaces and great glands are evidently congested, the lymph formed in them may become septically disposed, especially that of the mucous membranes, sooner or later mingled by absorption with ferment fluids naturally present in the digestive tract.

I conclude therefore, that the idiopathic fevers do not arise by any mechanism constituting a real exception to the common mode by which the blood is affected with a febrile disposition. In their case, as elsewhere, it is by septically disposed lymph; the channels of introduction of the morbific matter being the lymphatics and lacteals, and very probably also the system of the vena-portæ.

I think it proper to notice two other conditions in which fever appears suddenly: viz., after exposure to cold or wet, and in consequence of nervous shock or excitement. During a gastric embarrassment, which may or may not result in fever, and especially when the oxidative balance of the blood is maintained with difficulty, the above influences will precipitate an access of fever, of the epidemic or endemic form, frequently within a few hours. This is a matter of familiar observation, even to the non-professional public. Close observation directed for many years to this point, with regard to yellow and intermittent fever, authorizes me, I think, to express the opinion, that neither of these influences is operative without previous and concurrent gastric embarrassment. The rigor and horripilation due to a draught of cold or damp air, or to a wetting, consist essentially in a spasm of small arteries by which the blood is driven into the veins. The associated spasm of the *muscular elements* of the skin and mucous tracts, and of the great glands probably, forces the lymph of the system at large into the circulation, with abnormal rapidity. If this fluid be already prone to fermentation, not improbably the case during gastric embarrassment, the blood is quickly affected with a similar disposition. The mechanism by which fever is precipitated in consequence of strong emotion, or close and long continued mental labor, is I think very much the same.

The influence of muscular exertion, of heat, fatigue, or alcoholic excess in establishing fever is attributable to the deoxidation of the blood by nervo-muscular demands, and the concurrent pouring of badly elaborated lymph into the circulation. These causes, like the ones above enumerated, are only operative when the system is already disposed to fever, through a low grade of blood oxygenation.

If fever does not essentially consist, as Virchow puts it, in "elevation of temperature" merely, "which must arise from increased consumption of tissue, appearing to have its *immediate causes in alterations* (abnormal tension-conditions) *of the nervous system*," but in a more or less fermentative disposition of the blood, in accordance with the views of many co-temporary thinkers, I see no difficulty in accepting the hypothesis that the lymphatic vessels are almost invariably the channels through which the blood-inficient material naturally reaches the circulation. The only exception would seem to be, where septically disposed peptones are absorbed by the radicles of the vena portæ. In the vast majority of cases, however, I am sure, that the lymph, septically disposed and derived from hypo-oxygenated blood, is the true "*materies morbi*." Shiff expresses himself strongly inclined to believe, that any of the plastic exudates of inflammation as well as the lymph of inflamed parts, will kindle fever. Burdon Sanderson has shown that the exudate of peritoneal inflammation will cause fever; and that the same exudate of pyaemic fever, injected into the peritoneal cavity of another animal will destroy it within *fifteen minutes*, in the *profoundest collapse.*

And now, with regard to the condition of the lymph in its vessels, I wish to direct special attention to what seems to me the mechanism by which that fluid takes on a septic disposition.

An immense mass of facts substantiate the proposition, that continued low oxygenative power of the blood, *hypo-oxygenation*, leads to septic fermentation of all intensities, with induction of the mildest as well as the most fatal fevers. I shall endeavor to explain this, as follows:

The transformation of nitrogenous colloids (derived as food from the vegetable kingdom) into crystalloids (*crystallosis*) in the animal body, is a primary law of animal life, since this crystallosis is the source of all heat and polarity.

The resolution of a colloid into crystalloids, is dependent in every case upon heat, moisture and oxygen, but takes place quite differently, as oxygen is *fully* or *inadequately* supplied.

Since some form of crystallosis, therefore, sooner or later, inevitably overtakes colloid matter, both within the body and out of it, if oxygen be adequately supplied, oxidation takes place *before the act of crystallasis occurs*, or, as I have said, concurrently with it, so that the substance splits up into easily eliminable products—the familiar excreta of the system.

But whenevér oxygen is *inadequate*, both out of the body, as in common putrefaction, or within the organism—inasmuch as disruption *must occur* in the presence of even a little oxygen, under the powerful agency of heat—the crystallotic metamorphosis takes the form of sepsis. The colloid breaks up, but is resolved into very different compounds *hostile to the economy*, *poisonous* to the anatomical elements of the body, and necessarily characterized, whether solid, gaseous, or fluid, by deficiency of oxygen, and consequent high affinity for that substance. It is to this peculiarity that much of their noxious influence is attributable.

In any long continued hypo-oxygenation of the blood, therefore, *from whatever cause*, sepsis of greater or less intensity must result; and I desire especially to point out, that the lymph is affected in this way more readily and earlier than any other fluid of the economy, whenever such hypo-oxygenation prevails.

During health, lymph is never admitted into the blood without previous oxidation. A very rapidly coagulating fibrine makes its appearance, developed from the plasmatic fluid of the tissues, by the action of the lymphatic glands. The arrangement of the capillaries, in the lymphatic glands, closely resembling that of the Peyerian patches, is so remarkable, that its object cannot be mistaken. "The numerous blood-vessels," says Kölliker, "are not merely distributed in the septa of connective tissue, as has been hitherto asserted, but *enter the pulp filling the alveoli* (*sic*) where they run freely among the elements, and form a very fine, capillary plexus, bearing the closest resemblance to that of the Peyerian follicles, except that, in general, it is rather wider, and frequently also varicose."

The lymph is merely the residuum of the plasma poured out by the capillary vessels into the "lymphatic spaces" for the nutrition of the anatomical elements of the body; it is the drainage of the tissues. The substance called "fibrine" cannot be detected in it previously to its passage through the lymphatic glands. In these glands certain changes take place in this "waste" fluid, the most obvious of which consists in the development of an apparently spontaneous coagulability, the substance so coagulating being known as *fibrine*, admitted now on all hands to contain a greater amount of oxygen than the crude tissue—lymph, or albumen. The oxidation of crude plasma into fibrine evidently takes place in the glands. The very remarkable manner in which, by the arrangement of the gland-capillaries, arterial blood is brought into contact with the flowing lymph, which Mr. Draper compares to the placental interchange, compels us to infer with this ingenious author, that one of the principal functions of the lymphatic glands is the conversion of the albumen of the "waste" fluids into "*fibrine*." (Physiology, p. 101.) It is possible that further oxidation of fibrine is accomplished in the lung-capillaries; this, however, is not certain; at any rate the coagulability of the fibrine of the thoracic duct is at least equal to that of the blood. In health, therefore, by the oxidative action of the lymphatic glands, a portion of the waste plasma of the body is raised to a high term of oxidation, though not to its highest term, as it may still absorb oxygen. (Mulder's tritoxide of protein.) According to views stated heretofore, (based upon Lehman's analysis of hepatic blood,) this fibrine, representing the waste of the body, is destined to disruption in the liver. But, inasmuch as it is raised to a high grade of oxygenation, the variety of crystallotic decomposition which it suffers in the organ appropriated to that operation, will be of the *normal kind*, giving rise to products (uric acid and urea, glycogen, and the biliary acids) altogether dissimilar from those which would have arisen, had oxidation not been accomplished by the action of the lymphatic glands. Sepsis is thus anticipated by the realization of the physiological mode of metamorphosis. The case must be quite different, where systemic hypo-oxygenation obtains. For, as the oxidative power of the blood is universally defective, so likewise must the *lymphatic-gland-oxidation of tissue plasma fail*, along with the *general failure* of oxidation. An inevitable tendency to some form of crystallotic disruption, existing in the tissue plasma, under the natural conditions of heat and moisture, *when such oxidation is deficient in the glands*, the lymph must shortly become impressed with that variety of crystallotic disposition which is always generated in colloid matter *unless adequately* supplied with oxygen, viz., the septic. In this way, general hypo-oxygenation of the blood *must give rise to a septo-crystallotic tendency of the lymph*; such lymph, on admixture with the blood-mass will impart its own proclivities to it, and will thus constitute a fever-ferment.

These conclusions are well maintained by pathological considerations. One of the most formidable zymotics known, the plague, arises when hot winds, blowing over drying areas lately inundated by the Nile, become laden with putrid emanations of animal and vegetable origin; their agency, in conjunction with that of local overcrowding and most unimaginable filth (in Cairo, where *dogs* are the only scavengers), must effect in all susceptible individuals a general sub-oxygenation of the system. The plague is essentially founded in lymphatic sepsis. The influence of free ventilation, in obviating a tendency to grave forms of disease, such as hospital-gangrene, erysipelas, puerperal diffused-peritonitis, is attributable to free supplies of pure and ozonized air. So, also, measures which tend to improve the tone of the system, especially those directed to the enhancement of oxidative power, (iron, tonics, pure and cool air, &c.,) diminish its proclivity to any form of septic impression and likewise to fever. The use of iron, begun in the cold months, is effective in preventing the development of intermittent fever in the spring. With this view, the iron may be taken in the usual way, or may be introduced into the body by using well water in which an iron pipe (for a pump) has been placed; provided the water naturally contains carbonic acid enough to dissolve the carbonate of iron formed by oxidation. Natural chalybeate waters are in high request for the same purposes.

I must conclude, therefore, that the ferment giving rise to fever is the *lymph*, when by defective elaboration (*oxidation*) a tendency towards the septic mode of disruption has been developed in it, while septicæmic and pyæmic fevers originate in the absorption of lymphoid fluids in which this septic quality has become still more strongly marked. No doubt can exist, that lymph or other colloid matter may be more or less effective as a fever-ferment, within very wide ranges; and that according to its potency, *ceteris paribus*, its effect in kindling and maintaining that fermentative action which constitutes the essential feature of all forms of fever, will be greater or less. Where this septic tendency is most powerfully developed, as in septicæmia, yellow fever, cholera, malignant febrile affections, erysipelas, &c., both pathological observation and direct experiment warrant the belief that the fluids, especially the blood of an animal so affected, if introduced into the circulation of a second individual, may give rise to similar morbid states. Nor is it by any means beyond the range of rational pathology, that minute particles of the excreta, or even the moisture of the breath, may be the vehicle of transmission through the integument or lungs. The albuminoid matter of the expired air, blood, cutaneous exfoliations, once impressed with the septicæmic disposition lose nothing, at least for a long time, of their potency, by dessication, and are quite adequate when again reduced to a fluid condition by the liquids of an animal into which they have entered, to establish a state of action similar to that in which they originated; especially, if not solely, however, when the general powers of the constitution are depressed. Hence I am prepared to accept the doctrine, that while the gravest forms of fever may arise *de novo*, as they have unquestionably arisen in the first instance, inasmuch as a septicæmic quality characterizes all these grave febrile forms, very minute portions of fluid or dessicated colloid matter derived from individuals so affected may precipitate a similar morbid state in other individuals, at certain seasons of the year, or in varying conditions of time, place, diet, &c., competent to induce a proper receptivity. Without apparent difficulty, facts which it is *impossible* to contradict harmonize with all we know at present rationally, or by direct experiment, concerning the transmissibility of febrile diseases. It is only in such fevers as commonly, or generally, take on a septicæmic form, that transmissibility, according to the present views, is apt to occur, or has been accepted as a fact by practical advocates of contagion. As these fevers, moreover, typhus, bilious, typhoid, yellow, &c, (the contagious exanthemata not being here considered), may exist in various grades of intensity, originally appearing in a mild form, or being prevented by the resources of medicine from assuming that lethal character denominated *septicæmic;* it is plain, that septicæmia is only the most intense development of that condition of the blood which underlies all fevers which, by their nature, *may become* malignant; hence, the difference between septicæmic fermentation of the blood and the fermentation originally present *in these cases* is purely one *of degree and potency.* Almost any fever, under unfavorable circumstances, may become malignant; the potency of the ferment giving rise to benign or mild forms of pyrexia being always capable of aggravation into malignancy. This disposition to malignancy is most marked in fevers accompanied with depravation of the blood, and least so in those (catarrhal fevers; pneumonic, pleuritic, croupous, rheumatic, &c.) "*which bear bleeding well;*" where, consequently, the oxygenation of the blood is good, and *nearly always* adequate during the reaction to overbear any undue tendency to sepsis, and to prepare the septo-crystallotically affected material for resolution (in the liver).

While, therefore, fevers of the gravest forms (*septicæmic*) may doubtless be communicable, the *same forms of fever* in mild cases will *not be communicable*, though possibly, by a direct transference of *fluid* from one organism to another, propagation may be effected. I base this remark, not merely upon rational grounds, but upon an extended and close observation of malignant fevers during twenty years at the South. Experiment has shown (Raimbert, Coze and Feltz, Klein, &c.), that while the injection of fevered blood into the veins of an animal will not generally produce fever, blood derived from an animal fevered by pus-injection will commonly do so, while septicæmic blood will effect this result in all cases, with a rapidity and intensity apparently dependent upon the potency of the septicæmic ferment, which seems to become exalted by repeated transmission through successive individuals, until at length capable of effecting almost instantaneous impressions. Davaine asserts that the septicæmic "virus" loses its power by putrefaction This is doubtless the case, for a true *virus* (variola, vaccine, hydrophobia), but the proposition, I think, can be accepted for the septicæmic "*ferment*," for such I hold the nature of the matter to be, only with some modification. If putrefaction be measurable by the intensity of the odors evolved, or by the chemical nature of the matter generated, there is evidently reason for concluding that the ferment power is very highly developed, perhaps most so before any sign of putrescence is manifest, while it cannot be admitted that this power is soon diminished or early abolished in the progress of putrefaction. According to the Liebigian doctrines on this subject, which scarcely seem to me susceptible of modification, all fermentation, whether of nitrogenous or carbonous colloids, is really a putrefaction (*sepsis*). Putrefaction (*septic-fermentation*) of nitrogenous colloids *pre-supposes* deficiency of oxygen. I have endeavored to show that it is only in animal bodies, where oxidation is efficiently provided for in every part (except in the functional circulation of the liver) by the universal dissemination of oxygenated blood and plasma, that the specifically physiological form of crystallosis, viz., that which occurs under complete preliminary or concurrent oxidation, *is possible.* Oxidation is preliminary and complete in the force-generating material of the nerves and muscles, in order that the crystallosis of these substances may be complete and sudden under nervous behests, &c., and may thus allow of the instantaneous extrication of all the heat and polarity the satisfaction of the inter-elemental affinities of the colloid is capable of producing. On the other hand, the crystallosis of calorifacient matter (fibrine and its products, ferments, &c.) is gradual, and its oxidation is concurrent. This oxidation does not seem to depend merely upon the force of combination of the oxygen of the circulating fluid, but essentially upon the affinity for oxygen *natural* to all nitrogenous colloids. Nevertheless a colloid (albumen in the blood) may, I think, circulate for a considerable period within the organism, without manifesting this *natural* and constitutional propensity for oxygen. Plasmatic fluid, however, after being submitted to the action of the anatomical elements of the body, becomes what is termed *tissue-lymph*, and shows an evident increase of affinity for oxygen, which is then supplied to it by the capillary circulation of the lymphatic glands. This oxidation seems to be pushed only to a certain point, so that the products of the (hepatic) crystallosis of such "*fibrine*" are mostly oxidised, but not altogether; the process is completed in the lungs and arterial blood. Fibrine is *thus continually absorbing oxygen, in its circuitous and prolonged transit from the lymphatic spaces,* VIA *the lymphatic glands, and general circulation, to and through the liver.* When it arrives in the blood, by the thoracic duct, &c., its affinity for oxygen is perhaps most highly expressed, and it then indisputably constitutes a powerful ferment, active in promoting various fermentations, and particularly one, concerning which I have elsewhere expressed my views, viz., the fermentation of hepatic glucose.

The direct subsequent of the molecular commotion produced in colloid matter, by the contact of a ferment, is an exaltation—at once of the primary chemical affinities of the component elements of the substance among themselves, and of the general affinity of special groups of these, or of the whole mass, for oxygen. When such a "*catalytic*" disposition is accepted, absorption of oxygen begins at once; it is taken from the air, from carbonous colloids, from carbhydrates, or even from binary and ternary saline combinations. When this absorption of oxygen is established, the fermentative power of the substance to induce the same state in other colloids, and to cause the disruption of carbonous colloids and the carbhydrates, seems to be at its height. It exists however as long as oxygen is absorbed, a process which continues for many days after sulphuretted hydrogen and ammonia make their appearance. In the most declared sepsis, gluten, albumen and fibrine are able to excite fermentations of different kinds in carbonous colloids, and to cause "*sepsis*" in the nitrogenous. Varying grades of decomposition seem to be simultaneously conducted, in putrefying masses, while some kind of ferment power is retained even in advanced stages of putrescence, though not so distinctly specialized as at first.

In blood left to itself, glucose normally present, is converted by the alcoholic fermentation, long before any fetid smell is perceptible; and, early in its sepsis, liver tissue causes the conversion of the glucose it contains by the alcoholic fermentation, but later, by the lactic and acetic as well. Bernard observed long since the strong acidity of putrescent liver tissue. I have observed it to effervesce almost violently with bicarbonate of soda. Putrescent animal matter is usually of an alkaline reaction. Dissolved gluten (of wort, grape-juice &c.,) in the first stage of its fermentation, which might with propriety be styled the "eremacaustic," absorbs oxygen with irrepressible avidity from the air, and in close vessels, from the glucose of the liquid, being at length thrown down in an insoluble form. Its affinity for oxygen is by no means satisfied when it thus becomes insoluble; for it continues to appropriate this substance, even deoxidizing glucose. While its potency remains undiminished, its activity as a ferment is much impaired by the fact of insolubility. To this form of ferment is due that tranquil fermentation succeeding the primary outburst. The absorption of oxygen marks this substance as putrescent, its "*sepsis*" is already begun. Such "precipated" yeast, introduced into the blood, gives rise to the gravest troubles. According to Bernard, a decomposition of the blood, which becomes black and viscid, mucous congestion and extravasation, sanguiolent diarrhœa, and death amid typhoid symptoms follow such a procedure, in dogs. Reproducing these experiments, I have seen the blood of the jugular vein so instantaneously coagulated by the contact of the yeast of beer suspended in water, as effectually to prevent its access into the circulation. The vein becomes obliterated without systemic derangement; Bernard notes similar facts. Dissolved pus, decomposing cerebral tissue, &c., cause almost instantaneous coagulation of the blood out of the body. The effects of injection of putrid blood, pus, or any animal fluid into the circulation, are too familiar to require comment; the most intense prostration, after some rigors, culminating in collapse and death, with very transient reaction, if any, of a typhoid character, quickly follow the introduction of putrid matter into the economy.

It is impossible therefore to admit, that the mere progress of sepsis, *abolishes* ferment power once excited in a colloid; nor is the power of a ferment, in early stages of its fermentation, to excite the fermentative disposition in other matter, more pronounced than later. Pathologically we are constantly concerned, with the ferment influence of really putrid ferments. Death occurs, nearly always, before any intra systemic fermentation proceeds far enough, in the vessels, to generate *ammonia* or the sulphides by a true septic process, but this is continually taking place in *the intestinal canal during* the *progress of the graver fevers.* The introduction of putrid matter into the system, during a fever, derived from wounds, ulcers, or the intestinal canal, fearfully aggravates the existing movements, and imparts a typhoid, and even septicæmic quality to more or less benign febrile phenomena. There is reason to believe, that the peculiar and worst symptoms of typhoid fever, which *like the plague*, shows marked affections of the lymphatic system from the first (enlarged mesenteric, bronchial, glands, &c.,) being probably a nearly allied disease, are produced and maintained by continual absorption from the intestines, of the putrescent matter characteristically present in the lower portion of the ileum and the large intestine. By evacuating these matters, the progress of the malady is much influenced; great amelioration of the symptoms accompanies this treatment, and I think I have seen in one case, an arrest of the fever, follow a series of mild aperients given early, associated with heavy doses of quinine. Quinine, according to Binz, is an antiseptic "par excellence;" administered as above, it very quickly abolishes the *fœtor of the stools.* This I state from experience; and by a rule of practice endeavor to effect and maintain such a condition throughout the duration of the fever.

I have long been impressed with the belief that the typhoid reactions consequent upon yellow-fever, in some cases, are mainly due to the decomposition of hæmorhagic and other extravasations into the small intestines. In repeated instances, I have seen long coils of impissated blood, thrown off per-anum, characterize speedy emergence from a typhoid state. In this disease typhoid symptoms are usually associated with prolonged hæmorhages, from almost every opening, natural as well as artificial. As, however, a profound paresis of oxidative power, consequent upon the dycrasia of the blood and secondary exhaustion, necessarily concurs, the maintenance of febrile symptoms is probably largely dependent upon constant new accessions of imperfectly elaborated (septically disposed) lymph into the circulation. And no doubt, a similar state of things underlies the maintenance of the reactionary symptoms, both of typhoid fever, the plague, and of cholera.

On the other hand, the recurrence and maintenance of hectic, qualifying advanced phthisis, psoas abscess, prolonged suppuration, &c., must be attributed to continual supplies of ferment-lymph derived through the absorbents, from the seat of local action. As the ferment-power of such lymph is not usually high, the grade of fever resulting is not very intense, and is not marked by anything like a septicæmic quality. The *blood crasis, moreover*, is usually one in which the oxidative powers of the system are not extraordinarily depressed; indeed, we cannot doubt that the lesions primitively occurring, very often arise (phthisis, scrofula, &c.) in a crasis qualified even by hyperoxygenation; but this crasis becomes modified and more or less merged in the progress of the local affection, and of the complicating systemic derangements.

The foregoing remarks may be resumed in a synoptical way, as follows:

Fibrine is normally prepared from tissue plasma, by oxidation of crude plastic matter, in the lymphatic glands.

The oxidation of "*fibrine*" and of its resultants, is completely within the economy; "*fibrine*" undergoes partial crystallosis only, in the cells of the liver; the terminal stages of this crystallosis and the oxidation of some of its resultants, occur in the blood.

Such a progressive oxidation emphatically distinguishes fibrine as a substance *destined for disintegration.* It is the first act of "*retrograde metamorphosis.*"

Fibrine never administers to *cell-genesis*, nor to the generation of force-creating material in the nervous or muscular tissues.

It is not at all improbable that the "transforming ferments" of the body, pepsine, ptyalin, pancreatin, "liver-ferment," &c., are generated from fibrine, and not from albumen. The ready septicity of these bodies seems to denote their origin from some plastic matter already crystallotically disposed.

The fibrine of the blood is a natural blood-ferment, of the "eremacaustic" type, strictly analogous to the "eremecaustic" ferment of fermenting grape juice, or wort, and is, like this, perfectly competent to induce crystallotic disruption (fermentation) in glucose or other carbhydrates, circulating along with it, in the blood.

When the oxygenation of the blood is adequate, and hepatic action duly efficient, all the fibrine daily prepared, resulting from the daily tissue-waste, is *pari passû* worked off by the metamorphotic action of the liver. A certain activity of hæmal fermentation obtains, therefore, normally, at all times.

Fibrine is thus naturally disintegrated, in the *initial stages of its metamorphosis*, by glandular and hæmal action, according to the formula of *physiological* crystallosis, so that the septic form of this process is prætermitted or anticipated, and the blood, though constantly on the verge of receiving a septic impression, of greater or less potency, is normally shielded from it.

Whenever the tissue plasma, out of which fibrine is normally developed, stagnates in the tissues, or in the primary lymphatics, through redundancy, by pressure of exudates, by paralysis of the natural peristaltic action of the lymphatic vessels, &c., the inherent tendency of such tissue plasma or crude lymph towards crystallosis, becomes manifest in the establishment of some grade of septic tendency within it; it becomes a fever-ferment. Whenever, also, in consequence of a general depression of oxidative power, the oxidizing activity ot the lymphatic glands is concurrently impaired, the lymph becomes in like manner impressed with a septic disposition, which it communicates to the blood mass and solids upon dissemination through the economy. The natural termination of this proclivity of the system is *true sepsis; all fever* would end *in sepsis*, were not the activity of oxygenation enhanced, with greater or less effect, by the mechanism of the "*febrile reaction*." Without this reaction, death in an early stage of sepsis is inevitable.

Reaction is more or less efficient, to restore the balance of oxidation, according to the primary crasis, upon which it is engrafted; and is maintained as long as new supplies of fever-ferment are added to the blood.

These supplies may be derived, not from the lymphatic tissue-spaces alone, but from any of the mucous tracts, cavities of the body, natural or the result of disease, or from superficial or deep-seated ulcerative, suppurative or gangrenous action. The septic or fermentative potency of some of these fluids is far higher than that which usually qualifies the lymph of fever.

"Excited" *fever-fibrine* must be worked off in the liver as fibrine is normally; and in virtue of its enhanced ferment power, a greater potency is conferred upon the natural fermentative actions of the liver, so that a far greater quantity of fibrinous matter is transformed in a given time, with proportionate exaltation of temperature in the organ (due to the hyperactive crystallosis), and with a largely increased outpouring of substances demanding oxidization (glucose and its products, uric acid, &c.) into the blood; such exalted hepato-fermentative action is throughout characteristic of febrile *reaction*, and constitutes the principal phenomenon of its first stage. In consequence of the constant and exaggerated outpouring of these substances—results of the crystallotic transformation of fibrine—into the blood, as well as of the unduly active appropriation of oxygen from the blood by the septically-disposed plastic elements of that fluid, the blood oxygenation is so reduced, that the fundamental hyposthenia, characteristic of fever, is established and maintained; the nervous and muscular apparatus languish, in consequence of a deficiency of available oxygen in the circulatory fluid.

Whatever be the grade of this hypo-oxygenation, however, at the outset of fever, or during the "cold" stage, it is speedily rectified in the gradual evolution of the febrile mechanism. This is accomplished under certain stimulating agencies proper to the reaction, and may be maintained during a prolonged period, at great cost, however, to every solid and fluid of the economy.

Fever, therefore, in all its forms, is essentially a state of exaggerated fermentative action (*zymosis*), and to the reduction of this, directly, and as regards its results, our principal therapeutic measures must be addressed.

I have strongly insisted upon the fact, that hypo-oxygenation of the blood and lymph, general as well as local, is the basis of fever, being the prime condition establishing every grade of intra-systemic fermentative or septic action, that the essential aim and object (to speak teleologically) of the reactionary struggle, is to abolish all such action, by causing the blood to assume an unwonted and exalted degree of oxidative power, however much oppressed that fluid may be by the unusually large quantities of oxidizable matter poured into it in consequence of the simultaneous enhancement of tissue metamorphosis.

In a future paper I shall endeavor to trace the special mechanisms, according to which the systemic nisus is nearly always successful, while its occasional failure signifies inevitable dissolution.

New Orleans, June 8th, 1873.

Article II.—*Clinical Observations on Certain Forms of Malarial Fever.* By S. M. Bemiss, M.D.

The purpose of this paper is to put on record a few observations of malarial affections, both in hospital and private practice, since I have been a resident of this city. My object in writing the paper is not so much to attempt to edify, or benefit others by advancing novel views, or modes of treatment supposed to be more than usually practical, as to beget a spirit of investigation among those who are interested, which shall result in ultimate good to those who are to follow us in elucidating these subjects.

The study of the habitual toxic effects of, and remedies for swamp poison is the life-long task of the physician practising in the Southern or Western States of the Union. No other morbific cause is so omnipresent, so constantly operative, either singly or combining itself with other blood poisons, or cropping out in the form of mischievous complications in various attacks of structural inflammations.

The early settlers upon the fertile plains of the South find a full realization of Humboldt's accounts of the fierce resistance which the luxuriant vegetation of semi-tropical regions opposes to man's encroachments. But when, after protracted toil, the almost impenetrable forest and thicket have been removed, there springs from the uncovered soil an enemy which, though silent and unseen, disputes in a more formidable manner the supremacy of the human invaders, by instilling into their systems a virulent poison. The universality of the presence of this poison, especially in alluvial regions, is a well known fact. I very rarely prescribe for a case of acute disease in the "Charity Hospital" in which I feel that its presence may not be premised as a more or less important pathological factor. After any very considerable experience in such service, one is tempted to apply to denote its omnipresence, the poet's phrase "*hic et ubique*"—here and everywhere. The question may quite appropriately be asked, whether the very commonness, or constancy, of the presence of a malarial element in all the diseases of this section may not cause us to overlook or underestimate its importance? For example: the unfailing presence of a malarial element in cases of pneumonia, or of other acute inflammations, begets a philosophy which is prone to regard it as a necessary constituent of the inflammatory disorder. The practitioner becomes so habituated to witnessing the copartnership between the malarial poison and the inflammation, that he forgets that there is present a combination of different pathological factors, instead of an uncomplicated inflammation. There is another fact which may sometimes cause us to pay too little regard to the influence of malaria in the production or aggravation of disease. This is that peculiar feature in the human mind which leads it to underestimate and cheapen in importance the diseases with which it is most familiar.

The medical profession is not so exempt from this trait that its members may not too frequently overlook the presence and power to do harm of diseases endemic to their own populations, while they eagerly study accounts of distant epidemics.

We are surely wise when we endeavor to acquaint ourselves with the nature, symptomatology and treatment of Yellow Fever, for no Southern physician can foretell how short the time may be before he is brought in actual conflict with it. But let us never lose sight of the fact, that in the Mississippi Valley, and in the whole "cotton belt," the "swamp poison" is by far man's most destructive foe; forever busy, adding to the population of our cemeteries and deteriorating the constitutions of those whom it does not immediately kill. The expression "forever busy" is strictly correct; for, although the period of generation of the malarial poison is limited, in most localities at least, to a portion of the year only, yet its cachexy, or constitutional diathesis, is perennial.

In this article, however, it is my purpose to call attention more particularly to several forms of malarial diseases whose unusual phenomena and great gravity entitle them to a marked notice. The cases chosen to illustrate these different forms of malarial disease are all recorded in my note book as "Pernicious Fever." The term pernicious, which is employed to designate these cases, is often objected to by physicians. While we must admit that it is not entirely free from objections, it seems to me to express so clearly the leading characteristic of cases such as I am about to describe, namely, the infliction of serious injury, that I believe it more appropriate than any other term we can employ.

The term "malignant" applied to disease conveys an idea of open violence of manifestation which is absent in a large proportion of very grave malarial cases. Another objection to its use is that referred to by Dr. Wood: the appropriation of the word to define states of various diseases marked by great depravation of the blood.

The objections to the term "congestive" are that it expresses a pathological state which often cannot be shown to exist. I shall not attempt to deny that congestions, meaning thereby, those physical alterations in the blood currents which result in abnormal accumulations in certain parts of the vascular system, do not occur in some degree, during the cold stage of every paroxysm of malarial fever. But in a large number of very grave cases, the perniciousness is due to causes bearing no ascertainable relation to congestion. Therefore, having to choose between the three terms, pernicious, malarial and congestive, I have preferred the first as being the most comprehensive and sigificant, and at the same time the least objectionable.

My service in the Charity Hospital has extended through a period of seven years, but has been limited to the six months following October 1st, of each year. During this period of observation, I have preserved a more or less full record of 458 cases of the Malarial Fevers. This record excludes all cases of other forms of disease complicated by the malarial poison; all cases also of masked malarial disease; in a word, all instances of disease in which the symptoms of malarial intoxication were not only unmistakable, but so principally important, as to govern the classification. Of this number thirty-two cases are classed under the heading "pernicious," divided as follows: "congestive" 12; 4 died—8 recovered: "comatose" 10; 6 died—4 recovered: hemorrhagic 10; 2 died—8 recovered.

Let me now illustrate as well as I can what symptoms characterized those cases termed "congestive."

The following were the objective symptoms. A patient would be brought into the hospital in a state of great nervous depression, with cold extremities and surface; the skin sometimes bathed in perspiration, and in severe cases, pinched and cyanosed like the collapsed stage of cholera. So far as perversions of functions were concerned, there would be a variability of symptoms according as the viscera of the one or another of the shut cavities were principally involved in the congestive process. If the congestion was in the cranial cavity, somnolency, stupor, incoherency, stertorous breathing and perhaps convulsions, would denote the existence and localization of the congestion. If it affected the thoracic viscera, oppressed breathing, irregular and weak cardiac action, increased bronchial secretion, and perhaps, capillary bronchitis, would be present. If the abdominal cavity was the seat of congestion, more or less excessive vomiting; diarrhœa or dysentery; disorders of renal secretion; disorders of hepatic functions, or hemorrhages from various surfaces of abdominal or pelvic viscera would characterize the cases. That these symptoms did actually depend upon congestion for their production would be clearly manifested by the fact of their limitation to the cold stage of the paroxysm in the cases which were mild or of short duration. In other words, if reaction was brought about in *good* time, and completely brought about, the symptoms ceased with the restoration of normal blood movements.

Efforts to explain the pathology of congestion are attended with difficulties, which in our present state of knowledge are not wholly surmountable. Nevertheless, the word ought to convey to our minds some form of picture, otherwise it is meaningless, and should be expunged from medical usage.

I think the best definition of "congestion," as applied to disease, is, that it is a condition of physical change in the circulation, implying an unusual accumulation of blood in one part and a corresponding diminution in some other part or parts. This definition necessarily carries with it a supposition of obstruction and delay in the passage of the blood currents through the congested structures. Congestion, therefore, as a physical condition in malarial attacks, is, almost without exception, a phenomenon connected with the cold stage. The worst cases of congestive malarial fever are exaggerations of the cold stage, and are properly said to belong to the "algid" form of Pernicious Fever.

The explanation of the causes which determine the occurrence of these physical changes is altogether beyond present human attainments. A writer has felicitously observed that the "physics of fever are still more dark and unintelligible than its chemistry." Anterior to the occurrence of congestion there must be alterations in nerve currents, or nerve force, which not only produce the congested state, but determine its localization. We cannot, with any kind of philosophy, look upon the abnormal accumulations of blood taking place in certain parts of the vascular system, during the cold fits of malarial paroxysms, as the result of a merely passive drift, without any exciting or governing power. It is evidently not a matter of weakened heart's action, or mere chance, whether congestion occurs at all or where it occurs.

Whatever may be the uncertainty which surrounds the causes and actual mode of production of the congestive state, we are practically made plainly and painfully aware of its mischievous effects and its difficult therapeutics. Constant movement through its appointed channels is absolutely essential to the preservation of the normal constituency of the blood. Every surgeon knows how quickly the arrest of the passage of the blood through a vessel is followed by changes which totally deprive it of all adaptation to the purposes of a circulating fluid. This is true in the most healthy states of the blood. While I would not attempt to argue that it is a rule that fever-producing causes increase the liabilty to coagulation in the living currents, there can scarcely be a doubt that all forms of blood deterioration aggravate the effects of stoppage of circulation upon its chemistry. Observation and theory both teach that toxaemic states of the system bear perturbing accidents or interruptions of function worse than healthy conditions.

In typical examples of the worst form of congestive fevers, reaction does not occur, and the patients die collapsed and cyanosed.

In a class of cases not so violent, partial reaction occurs, and the patients die generally in a comatose state, or with symptoms indicating lesions of innervation, death being probably due to molecular innutrition because of vitiated blood. In yet other cases, coagula or sanguineous extravasations are causes of death after reaction has occurred. But every experienced practitioner will join me in the opinion, that the effect of congestion most prolific as a cause of its fatality is impeded function from visceral obstruction. All attempts at either medication or nutrition are rendered abortive by vomiting, or diarrhœa, or often it may be, by a reversal, or arrest of those currents upon whose integrity absorption and assimilation depend. There is nothing more disheartening to the practitioner than to witness the utter impotency of the remedies he employs in treating violent congestive fever when either of these functional disturbances is present. These "visceral obstructions," as we term them, are very frequently not limited to the cold stage, but complicate the cases through their entire duration. It was this fact which seems to have given the Pernicious fever of Mauritius its intense fatality; for the testimony of all who treated it agreed in declaring its amenability to cure by quinine, whenever states of the system preventing its assimilation did not exist.

The following case illustrates the fact that the therapeutic effects of quinine may be interrupted in instances where neither diarrhœa nor vomiting exists.

E. D., a young German, was brought into Charity Hospital on the night of December 21st, 1870. The patient when admitted was in a stupid, insensible condition, and with cold extremities and surface, struggling pulse and marked cyanosis. The case was diagnosed "congestive" malarial fever. A rectal injection was immediately administered containing ℈ij of quinine and 40 drops of tinct. opium—the solution of the quinine effected by sulphuric acid. As soon as the patient was able to swallow, (at 7 o'clock the morning of the 22d) one scruple of quinine in solution was given by mouth. During the whole day of the 22d, the patient was rational, took sufficient food and drink, and seemed to be in a satisfactory state of convalescence. During the night of the 22d another paroxysm occurred, attended with insensibility, and followed by suppression of urine and death on the 24th. If I can properly accuse myself of errors of treatment in this case, they consist in the fact that decided eliminant treatment was not resorted to after the patient emerged from the stupor of his congestive state. His appearances of convalescence were so satisfactory, that I trusted the cure solely to the quinine. On the 23d calomel and colocynth were administered and the quinine continued, but without any favorable impression resulting. It is well to say here, that in the treatment of this case, as in all cases of congestive fever, whether reaction has occurred or not, I endeavored to accomplish everything in my power towards the requisite nourishment and stimulation of the patient, by enemata of beef essence and brandy, after he had become for the second time insensible.

As it respects the measures of treatment proper to be applied to the congestive state, I shall first make mention ot those which have, in my employment, proved most serviceable. First, however, it is not improper to enter a caveat against efforts to bring about reaction by filling the patient's stomach with hot infusions, for example, of capsicum, or hot alcoholic drinks. I am sure that in one case reaction seemed to have been produced, by the administration of a full draught of warm infusion of the Eupatorium perfoliatum. But the instances must be rare in which this remedy can be made available, simply because its active principle is not readily susceptible of concentration. I should add, also, that it is quite likely that the beneficial effects in the above mentioned instance were ascribable to the emesis induced. The most effectual reme dies in my experience have been opium and chloroform. From twenty to thirty drops of tinct. opium and a similar quantity of chloroform may be given by mouth or rectum, and repeated in half an hour if no effects are discernible. I have in several instances practised hypodermic injections of morphia gr. 1-6 and atropia gr. 1-40 to 1-30, with very good effect. In truth, I may say that the opinion is pretty well fixed in my mind, that the conjoined effects of opium and atropia are powerfully antagonistic to the cold stage of malarial fever. I have given chloral hydrate in some two or three cases, but if its administration was attended by beneficial results, they were too indefinite to justify positive recommendation.

If choral hydrate should be found to be efficacious in abridging the duration of chills, it possesses a great recommendation in the facility with which it can be administered by rectal or subcutaneous injection.

In some cases I have given the opiate in combinaton with sulph. ether, Hoffman's anodyne or spts. nitric. ether. In respect to all these combinations, I may safely say that the results have been highly satisfactory. It will be perceived that all this medication is directed against the *nervous* element of the congestive state. Both hypothesis and bed-side experience concur in teaching its appropriateness. Some further remarks are important, before abandoning the consideration of the best mode of treating the congestive stage of malarial fevers. But before making them it is proper for me to say in regard to this entire paper, that the references to my own experience include not only those violent cases of pernicious fever of the algid form in which congestion is the source of danger, but the treatment also of the cold stage of the more simple forms of malarial fever. The difference in the pathology of these two classes of cases is one of degree purely, at least in so far as our principles of treatment are concerned.

No suggestion more naturally occurs to the non-professional observer of a congestive chill, than that alcoholic drinks should be administered. Experience, however, sooner or later teaches observing physicians, that they are seldom useful and sometimes hurtful. In one case convulsions followed so soon after the ingestion of half a tumbler of whiskey that I was disposed impute its occurrence to this cause. It is reasonable to suppose that all ingesta which are liable to disturb any function whatsoever, or which impose the performance of a function upon an organ incapable of its performance because of interrupted circulation, ought to be withheld, or administered with great care and watchfulness during the congestive state. This, I presume, is the reason why so many physicians unite in condemning a formerly common habit of drenching the patient with hot and stimulating infusions during the cold stage of fevers. They irritate the stomach, and give rise to the same character, and, it may be, degree of perturbation which attend the cold stage of a malarial attack when it overtakes the patient shortly after a full meal, or after having eaten some indigestible food. In extreme cases, however, we should resort to alcoholic stimulants. An enema of from ℥ij to ℥iv of hot brandy or whiskey has in one or more cases appeared to me strongly promotive of reaction. It may be given in conjunction with infusion of coffee, or of tea, or with chicken broth or beef essence. If given with either of the latter nutriments, the liquor should be diluted before the admixture.

The dominant indication in the treatment of all grave forms of malarial disease, is to induce cinchonism at the earliest possible moment. The experience of some observers teaches that the administration of quinine during the cold fit is sometimes followed by troublesome perturbations. Surely the fear of such a result should not deter us from its exhibition at the earliest moment of our professional care of the patient. Indeed, I think that a close inquiry into the facts connected with those instances in which its exhibition has given rise to unusual symptoms, may result in showing that they were due not so much to the specific properties of the drug, as to its effects as an irritant to the digestive organs. These may be avoided by administering it per-rectum, being careful to effect its solution previously, or by giving it hypodermically. The following are the two formulæ which I have generally used for subcutaneous injection: ℞ sulph. quinine ℥iv: distilled water ʒiv: effect a solution with citric or acetic acid, and by aid of gentle heat. Filter carefully, and inject thirty minims in two places; fifteen in each. ℞ sulphate quinine ʒj; distilled water ℥j dilute sulphuric acid gt.xl: filter the solution and inject ʒss. at each of two points. It has so happened that I have never had an abcess to follow subcutaneous use of quinine. One cause, and no doubt the principal one, of this exemption from these frequent and troublesome sequelae has been the extreme gravity of the cases in which this form of medication was resorted to, and their rapidly fatal results, thus intercepting the occurrence of abscess. I have never tried frictioning the surface with ice, or the cold douche. It is not impossible that these modes of inducing reaction have not had the attention and trial they merit.

Another measure of treatment, which I have for a long time determined to put in practice, has only awaited a suitable case. I refer to bleeding. I feel satisfied that in those examples of congestion in which the thoracic viscera seem to be its point of localization, bleeding holds out the surest and speediest hope of relief. The resort to it should be early; before the accumulation and stasis of the blood in the cardiac chambers has resulted in formation of clots, or before the pulmonary congestion has brought about capillary bronchitis, its most frequent and fatal ending.

If, under any mode of treatment which we have adopted, reaction should take place, a point of prime importance is to avert, as far as we are capable, all interruptions of functions. The difference between the pathology of the collapsed stage of cholera and the pathology of the congestive state of malarial fever, is sufficiently manifest to indicate that the treatment proper for one state is not altogether the treatment proper for the other. But yet there is a sufficient resemblance of symptoms, and a sufficient pathologic analogy, to afford us some useful hints in regard to treatment. If in the collapse of cholera the patient's chances of recovery are liable to be damaged by deluging the stomach with hot, or stimulating drinks, this is likewise true of the congestive stage of malarial fever. If narcotic doses of opium are improper in the former case, so are they in the latter. If belladonna is found to be antagonistic to the collapse of cholera, it must be yet more so to the cold stage of malarial fever, since all experience teaches that the inspissation of the blood in cholera, by loss of its watery constituents, more powerfully disqualifies it as a circulating fluid than do the changes ordinarily wrought upon its composition by the malarial poison. Finally, if the blood changes occurring in cholera collapse require great watchfulness on the part of the physician during the restitution of this fluid to its normal state, it is equally true that in congestive fever the blood undergoes some form of deperdition due solely to the arrest of circulation, and in both cases the chances of recovery bear a direct ratio to the shortness of duration of the collapse, or congestion. The unexpected interruption of some important function, and consequent death of the patient, has more than once fully impressed me with the propriety of endeavoring to anticipate such an event, by the administration of some medicine whose effect upon the system is so general that it is likely to remove the hidden causes of functional obstruction. For this purpose there is no drug equal to mercury. From five to twenty grains of calomel in combination with five of bicarbonate of soda may be administered as soon as evidences of reaction become manifest. A very favorite prescription is to dissolve bitartrate of potash in the water given the patient to drink in such quantity that not less than ℥j shall be taken in the course of twenty-four hours. It certainly promotes processes of elimination. and thus tends to prevent or cure secondary blood-poisoning. Its free use is especially beneficial in those cases in which a jaundiced or "bilious" appearance of the surface indicates eliminant treatment.

"Malarial coma," or the comatose form of malarial disease, bases its claims to a distinctive designation upon two prominent symptoms. First, the stupor; next, the state of the surface as it regards circulation and temperature. The objective symptoms under my observation were as follows: A patient would in mild cases be able to walk into the hospital with symptoms very strongly resembling those of alcoholic intoxication. In more severe attacks the patient would require to be carried into the hospital, and would be found in states of more or less complete unconsciousness. In some cases substances placed upon the tongue would be swallowed; in others deglutition could not be excited. The bowels were generally inactive, but except in the gravest cases, moved under the influence of purgative medicine. The urine was scanty and highly colored. The patients usually passed their secretions in bed. Not infrequently there was either retention or suppression of the urine. The color of the skin was quite characteristic. It was of a muddy yellow hue; the face was sometimes puffy in appearance, and the eyes injected. Old ulcers or recent contusions took on an ill-conditioned state and sometimes sloughed. The temperature was invariably above the normal standard. The highest temperature recorded was 105° 6' some six hours previous to death. Oscillations of temperature, periodic in character, marked most cases, but in no instance did the lowest fall reach the standard of health until convalescence was established. The rhythmical paroxysmal tendency common to all malarious affections, could be demonstrated by careful observations of temperature.

The elevation of temperature; the absence of coldness of the surface and of cyanosis; the dull yellow coloration of the skin, were the diagnostic points between the coma of congestion and the insensibility of malarial coma.

The occurrence of such cases of malarial coma as I have described, must be due to the toxic effects of secondary blood-poisons. No other explanation of its pathology accords so well with its phenomena and the conditions of the system which attend its production.

The point most difficult for the physician to master in regard to the influence of malaria upon the human system, is the diversity of its effects and of its symptoms. An English writer, to whom the bedside observation of malarial affections seems to have been a new field of study, gives the following description of his impressions in regard to the capricious action of the swamp poison: "The manner of seizure and its effects vary infinitely—a single type case of ague, with a cold stage, hot stage, and sweat, may be all the inconvenience one may feel during an epidemic; while another, apparently under the same exposure and conditions, may, by repeated attacks, be so rendered anemic and ill that to a casual observer he would appear in the last stages of phthisis."

There cannot be condensed into so brief a compass a better explanation of the diversity of symptomatic phenomena attending malarial diseases than is to be found in the following sentences, translated from Greisinger: "Malarious maladies all depend upon the toxic action of one essential and specific cause, however much their symptomatic phenomena may differ. The great variety of symptoms is ascribable, in part, to that divergence in morbid states of the system common to blood-poisons. In the study of the mode of action of these poisons, all and singular, it is necessary to be remembered that secondary vitiations of the blood arise from disturbances in the processes of change ordinary to the system. There may be said, therefore, to be a primary and a secondary poisoning, which, though bearing the relation of cause and effect, differ widely in their symptomatic phenomena. Further, it may be said that the symptoms of secondary vitiations of the blood are far more lacking in uniformity than the symptoms proper to the primary poison."

While these teachings show why such a grave symptom as coma may attend or follow certain malarial attacks, they do not point out the precise morbid processes by which it is brought about. These processes may, in truth, be different in different cases; that is, it is quite reasonable to suppose that blood vitiations very different as to their nature may overwhelm neurotic function by interrupting proper nerve nutrition. The coloration of the skin indicates that undue diffusion of bile constituents is an occurrence very common to this form of disease. The probabilities are that this arises from "lack of consumption" rather than from increased biliary secretion. In some cases, evidences of uremic poisoning appear to be well founded. They rest, however, more upon the fact of suspension of urinary secretion than upon the actual symptoms of uremic poisoning. The proper interpretation of malarial coma, according to these views, would be to ascribe it to secondary blood vitiations, occurring in consequence of derangements of the chemistry of the system from the primary influence of malarial poison, the particular nature of the blood impurity being in each case determined by a variety of circumstances, each calculated to give the errors some different shape and character. For example, the state of the blood at the moment of attack; the state of functions during the attack; the nutrition, medication, and hygienic surroundings of the patient.

It is not to be denied that comatose conditions may sometimes continue for a considerable period after a chill in which congestion of the brain had occurred, just as we find those conditions following even light attacks of epilepsy. In these instances the presence of secondary blood poisons cannot be alleged as the cause, so much as the direct effect of the blood stasis upon brain nutrition. In private practice the history of the recent occurrence of the chill would aid in making the diagnosis. Practically, however, it is of little or no importance whether the distinction be established or not.

There is no doubt that diagnosis is sometimes made difficult by symptoms indicating structural changes in some part of the brain.

A steamboat hand, aged about fifty years, was brought into Charity Hospital in a comatose condition, with crossed paralysis, the facial paralysis being upon the left side. The insensibility was complete. The temperature in the axilla was 104°. The patient died on the day after admission, and his friends refused to allow an autopsy. There was in this case a history of repeated recurrence of malarial paroxysms, one of which, about a month preceding, was said to have been accompanied by temporary insensibility. The appearance of the patient indicated malarial cachexia. The diagnosis which I made in this case was cerebral hemorrhage, occurring during chronic malarial toxaemia and perhaps during the cold fit of a paroxysm. I have never seen paralysis produced by malarial coma; consequently, when it complicates malarial cases, I conclude that some one of those causes which usually give rise to it is present as a complication.

Comatose states may also be produced by pigmentary deposit in the brain, and if the physician should not be able to obtain a history of the case, diagnosis may prove impossible. The following clinical notes refer to a case of this description.

F. R., aged 21, entered Charity Hospital on the 15th of August, suffering from intermittent fever of the tertian type. The order of paroxysms having been broken with quinine, the patient was discharged convalescent on the 21st. Admitted again on the 21st of September, in an extremely anemic and debilitated state; complained of persistent pain in the head, not limited to any particular part; pupils dilated. For several days he answered rationally, but his memory seemed at fault. He knew nothing of the circumstances connected with his entrance to the hospital, and wondered how he came to be there. At night he wandered about the ward, awakening the patients and accusing them of being in his bed; countenance vacant in expression, and eyeballs protruberant.

On the 25th of September he fell into a stupor from which he was with difficulty aroused, and when aroused, would speedily relapse into the same state; took nourishment and medicines with great reluctance; quinine in solution and concentrated food were forced upon him. On the 26th he improved, so far as recovery from the stupor could be considered an improvement, but remained in a condition decidedly worse than that described upon his readmission, until the 11th of November. At this date his replies became altogether incoherent. The patient was still able to walk, but staggered and seemed unable to co-ordinate his movements. On the night of the 13th of November he sank into a profound stupor, and died during the night of the 14th.

On the 15th autopsy was made by Prof. Chaillé, and the grey matter of the brain found bronzed with pigmentary deposit. No other lesions present.

The treatment of malarial coma differs in many particulars from that of the congestive form of malarial cases. In both cinchonism is an early desideratum; but in malarial coma it is a matter of very great importance to endeavor by eliminative treatment to rid the system of the *materies morbi.* We rightly form conclusions as to the nature of the perverted chemistry, and endeavor to shape our therapeutics so that they may properly apply to the conjectured state of blood impurity; but after all, there are certain general principles of treatment which are to be kept in view during all efforts to rid the economy of peccant material, by processes looking to its dislodgement and ejection. These are to excite functional activity, and especially activity of the excretory functions.

These are means of cure in all forms of disease characterized by blood inquination as a prominent feature, sanctioned by the wisest human philosophy, from the earliest eras of medicine to the present time. I think there is an error common in the medical profession, and especially apt to befal young practitioners, which leads them to fix their attention too much upon securing the activity of some particular emunctory, to the neglect of functional integrity elsewhere. To use a vulgar comparison, it is as if the driver of a heavily loaded wagon should endeavor to compel one horse into the task of drawing the whole burden, while the others remain idle. But it is even worse than this, for in the supposititious case no injury is done to the idle horses, while in the real case the whole system suffers, since undue activity of any one function, either in health or disease, deranges that counterpoise between all the various functions which is absolutely essential to the proper chemical and vital changes of the human economy.

Purgatives are important measures of treatment, and in those cases where suppressed or very scanty urine awakens fears of uremic poisoning, hydragogues may prove most serviceable. Calomel has, in my hands, answered a more valuable purpose as an eliminant than any other remedy. It has another important advantage—that it may be administered by being placed upon the tongue and washed into the stomach with the saliva, in states of insensibility in which the patients cannot be made to swallow other medicines. It may be given either in decided doses of from five grains to one scruple, or by placing upon the tongue from one to two grains, every two hours until sufficient effect has been obtained. If the patient can be induced to swallow, large draughts of a solution of bitartrate potash, ℥j to Oj of water, or of lemonade, or the bitartrate potash dissolved in lemonade, should be given until free catharsis is produced. Where the febrile movement is very marked, I have found benefit from the use of the following mixture: ℞ neutral mixture ℥iij, spts. nitr. dulc.; tinct. hyoscyam; syrup ipecac; tinct. digitalis; aa ʒij—mix: table-spoonful every two hours.

No indications for other forms of medications should for a moment distract our attention from a resort to the "*anceps remedium*"—quinine. It may be given hypodermically in the manner already described, or by rectal injection, being careful in the latter instance to effect its solution before introducing the drug into the bowel. One of the greatest difficulties of treatment which confronts the physician in hospital practice is the bad states of nutrition in which patients are generally found when first brought under treatment. Sailors, or common laborers, for several days sick, with no attentions except the rude offers of help from their fellow workmen, arrive in the hospital in such conditions of malnutrition, that the physician is in doubt as to the propriety of decided purgation, although the indication may otherwise clearly favor such practice.

One of the most interesting forms of pernicious malarial fever is that marked by a tendency to hemorrhages. The tendency to hemorrhage is sometimes general to the system, but in a great majority of instances it is limited to some particular surface. One of the strangest facts with regard to hemorrhages in malarial diseases is, that in certain epidemics the bleedings occur almost or quite exclusively from the same selection of surfaces. In that form of hemorrhagic malarial fever which is called malarial hæmaturia, this statement is strikingly sustained. On this account those physicians are quite pardonable, who have fallen into the error of supposing it to be a new disease, since many of them practise in localities where bloody urine was formerly a very rare complication of malarial attacks, but where it is now extremely common. The ten cases classed as hemorrhagic in the early part of this paper were all characterized by bloody urine. In no one of these cases did bleeding take place from any other part of the system while under my treatment. One of the patients died very suddenly, some month or more after dismissal from treatment, with symptoms of cerebral hemorrhage.

I have referred to this case in support of an opinion which I think is well founded, that hemorrhages, as a rule, do not occur in malarial affections except in such cachectic states of the system that the existence of a general hemorrhagic tendency may be inferred. I believe, in regard to "malarial hæmaturia," that chronic malarial poisoning—that is, a more or less protracted vitiation of the fluids, and consequent innutrition of the solids of the whole system—so universally ante-dates the escape of blood by the urinary passages, that it may be regarded as a condition for its occurrence. The proposition depends in part, for its correctness, upon the proper answer to an inquiry which seeks to ascertain whether acute malarial attacks, occurring in the persons of those who are for the first time exposed to the marsh poison, do or do not entail upon such subjects the hemorrhagic diathesis.

If we understood the nature of those changes which give rise to non-traumatic hemorrhage, we might institute a comparison between them and the changes known to be brought about by malarial influences. This method of rationalization cannot be utilized in our present state of knowledge, since both of these points of pathology are of difficult elucidation. We may say, that with respect to the hemorrhagic diathesis, three morbid conditions may concur for its production, and that the existence of at least one of these conditions is necessary for its production. These are, first, altered blood—perhaps, necessarily hydræmic alterations of this fluid: second, alterations of vascular structures; this must imply defective nutrition to such a degree that liability to rupture is increased, or that the osmotic properties of the vascular walls are unduly exaggerated by textural change: third, alterations of intravascular pressure, either due to vaso-motor-nerve-influence, or to passive congestion induced by other causes, as weakened circulatory force, impression of cold upon peripheral nerves, or any circumstance which tends to produce unusual accumulations of blood in sectional parts of the vascular tree. Altered intravascular pressure enters into the pathology of all malarial attacks. A cold stage involves essentially a diminution of the normal quantity of blood in certain parts of the vascular system, and, of course, its accumulation in certain other parts. If the other two elements of hemorrhagic crases were as invariably present in malarial diseases, it would be exceptional when hemorrhages did not attend them.

But here is precisely the point of difficulty. We know, clinically, that hemorrhages are so far from being the rule in the periodic fevers, that we consider them to be complications, as grave as they are unusual. It would seem, then, that clinical investigations, looking to the elucidation of the causes which explain the occurrence of hemorrhage in malarial fevers, should be directed more especially to those pathological factors which either produce dissolution of the blood so as to exaggerate its osmotic qualities, or bring about vascular fragility by acute, or chronic structural degenerations. If yellow fever be taken as a type of hemorrhagic disease, it appears probable that the last mentioned conditions concur in the production of the hemorrhage. At least we feel warranted in stating, that destruction of blood consistency is an early clinical event, and that depraved nutritions of solids must and certainly do very soon ensue. The consequences are, that in grave attacks of yellow fever the dispoposition to hemorrhage is so universal to the system that, to borrow a strong expression, which I have heard used to define the hemorrhage, the "blood slops out" wherever the capillaries are not supported by dense tissues. It must be extremely rare that a hemorrhagic crasis as general as this obtains in uncomplicated malarial fevers. Nevertheless localized hemorrhages, or hemorrhage restricted to particular surfaces or tracts, do attend certain malarial attacks, and, as has been said, what is remarkably strange, they are phenomena signalizing special epidemics to a wonderful degree, while other epidemic visitations, scarcely less fatal in results, may be entirely exempt from them. Surgeon B. F. Gibbs, U. S. A., writing of the "calentura," or congestive fever of Nicaragua, states that "black vomit, the almost pathognomonic symptom of yellow fever, never occurred; there was, however, in the collapse, the development of hemorrhage from the lungs and stomach, as well as the fissures in the tongue."

Alvine hemorrhages, "colliquative bloody stools," are often referred to as having characterized certain epidemics, and bloody urine is spoken of by many authors, old and recent, as a grave clinical event.

Wunderlich says: "Hemorrhages 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 hemorrhages and other sanguineous extravasations present themselves."

It would seem from these observations, that malarial maladies may be attended by hemorrhages under two somewhat different conditions. First, although very rarely, the hemorrhages are due to morbid processes set up by the fever producing cause, and in that event may occur in acute primary attacks of malarial fever. The morbid processes in this class of cases, must relate principally to alterations of the blood and those commotions of circulation so characteristic of these fevers. Second, and most frequently hemorrhages take place after protracted vitiations of the blood, and of course, its inevitable consequence, innutrition and decay of the solids. In the latter form, structural change and rottenness are regarded as principally responsible for the hemorrhage. My own observations, however, have taught me to believe that even in the worst conditions of structural degeneration compatible with life, that we witness in malarial cachexia, a paroxysm is necessary to give rise to serious hemorrhage.

All the cases of malarial disease complicated by hemorrhage that have occurred under my observation have been exemplifications of the latter crasis. I can further state that all of them have commenced during a chill, or have been rendered manifest in so short a time after a chill that I felt sure that the congestion of the cold fit was the point of departure of the hemorrhage The only exceptions to this statement are several instances in which numerous points of subcutaneous extravasation dotted the legs principally, of patients suffering from chronic malarial toxæmia. Epistaxis is so common an event, both in health and in all forms of febrile disease, that I do not look upon its occurrence as ground upon which it is proper to found a conclusion as to the presence of the hemorrhagic diathesis.

In making a diagnosis between these two hemorrhagic states of the constitution, we have in the former case the fever and its attendant symptoms to aid us; in the latter, the indications and history of cachexia or failing health.

In the present state of our knowledge it is not at all possible to explain why it is that different epidemics of malarial disease should give rise to such a diversity of phenomena, that one epidemic will be characterized by a peculiar train of symptoms, which shall be absent in another epidemic, but replaced by other symptoms equally as characteristic of the second, as the former were characteristic of the first. To endeavor to explain these facts by referring them to "epidemic constitution" or "type" is a mere confession of ignorance. "Epidemic constitution," "livery," "type" or "influence" must, after all, rest upon a "some what" which is capable of acting as a force upon the human system, and that agent which puts this force into exercise, and gives it some peculiar direction, must possess at least a convential essentiality. It is not logical to think of it otherwise. The "cold plague" so fatal in the Mississippi valley in the early part of this century, was undoubtedly an influenza, and seems to have destroyed life by inducing pulmonary congestion. Its victims were for the most part those laboring under malarial toxæmia, so that this epidemic afforded the medical profession a sad lesson in regard to the modification of the usual phenomena of malarial disease, due to the coincidence of a second morbific cause. Malaria is an exceedingly miscible poison: frequently complicating other zymotic affections, as, for example, cholera or yellow fever. We should bear in mind, however, that its eccentric phenomena, even when they become so uniform as to appear to be the mode, rather than the exception, by no means prove that a second primary poison is added to it. There may be certain annual, or at least epochal, differentiations of the human system, as it respects states which lessen or increase receptivity to the malarial poison; or even which lessen or increase the liability of particular structures to be affected by the passage of malarial poison through the system, due to seasonal influences, either as it regards food or climatic effects. Or there may be that differentiation of form and quality in the malarial poison itself, which microscopists admit to occur in certain fungi when grown in different soils, or during different seasons, and this may account for irregularity in its toxic action.

But these hypotheses are not established, and have nothing to recommend them to notice beyond the probability that they may awaken investigation. For several years, however, I have been satisfied that prolonged jaundiced states of the system predispose to hemorrhage; and where these states occur in connection with malarial cachexia, it has seemed to involve the liability to hæmaturia. In the early part of the past winter, a youth aged sixteen years came under my treatment for a tertian intermittent. The case was very typical of the symptoms of chronic malarial toxaemia associated with jaundice, which latter condition had also persisted for more than a month. The patient was brought into the presence of the class for the purpose of illustrating a pathological state, which in my opinion favored the occurrence of hæmaturia. The arguments advanced in the lecture delivered at the time, held that it was true that the prolonged diffusion of bile constituents in excessive amount through the blood, occasioned both deteriorations of this fluid and textural weakening in the solids favorable to hemorrhage. That, for reasons not yet understood, but probably because the kidneys assumed the office of ridding the system of these substances, decay and liability to capillary rupture were greater in the renal blood-vessels than elsewhere. That in the instance of this patient and those in similar conditions, more than usual care should be exercised to avoid the danger of hemorrhage, which the cold stage of a malarial paroxysm would be sure to entail. The following are the clinical notes of this case:

H. K., aged 16 years, was admitted Sept. 15, 1872, suffering with intermittent fever and chronic malarial poisoning. At time of admission, he was considerably jaundiced, with anasarca of the lower extremities. Under the use of quinine and chalybeates, he was greatly improved, although his jaundiced appearance persisted and he continued to have occasional chills. On the 19th of December he was seized with a violent chill, which lasted for several hours, and was succeeded by intense fever. Shortly after the chill he passed some very bloody urine. Incessant vomiting occurred with the ejection of a dark green fluid; the pulse was very quick and the patient in constant jactitation. A solution of quinine containing 12 grs. was given hypodermically, and grain doses of calomel in combination with bicarb. soda were placed upon the tongue. On the 20th, suppression of urinary secretion occurred with death at 11 P. M.

Autopsy was made by Prof. Chaillè showing intense congestion and hemorrhage in both kidneys, with complete obstruction of the cystic duct, apparently from adhesion of its internal surfaces. If this observation shall be corroborated by others, in such numbers that we may feel authorized to establish it as a rule, it will prove a most important advance in our effort to diminish the mortality from malarial hæmaturia by being able to select those cases of chronic malarial poisoning in which its occurrence is presaged, and to direct our treatment to its prevention.

The following clinical notes refer to a case of malarial hæmaturia which ended in recovery:

Charles E., an Englishman, aged 26 years, a man of large frame and formerly of robust health, was admitted to Charity Hospital Nov. 18, 1872. For nearly a year he had been working in an intensely malarious district, and had for several months suffered with chills and general symptoms of chronic malarial poisoning. On the day prior to admission he had a severe chill. At date of admission his temperature was 103°; pulse 120; respirations 29. He was deeply jaundiced, which he says occurred suddenly. The urine was loaded with albumen and contained blood corpuscles in great abundance. The legs were anasarcous and pitted upon pressure. There were physical signs of effusion in both pleural cavities and of œdema of the right lung. There was also considerable effusion in the abdominal cavity. The patient was ordered at once five grains of calomel and an equal quantity of bicarbonate of soda; with solution of bitartrate of potash as a drink. He was also ordered ten grains of sulphate quinine in solution to be repeated every second hour. To be fed at short intervals with concentrated food. On the day after admission his temperature rose to 104°, but the calomel had operated and the secretion of urine was sufficiently abundant, and the amount of blood lessened; same treatment pursued. On the 21st of November the patient's temperature was 99°; his bowels soluble and skin moist; secretion of urine free; appearances of blood still lessened, but yet present in unmistakable amount. One hundred and eight grains of quinine had been taken and retained by the stomach. He was ordered a table-spoonful twice daily of the following mixture: ℞ mur. tinct. iron; simple syrup, aa ℥iv; sulph. quinine, ʒss; chlorate potash, ℈ij; water,—℥iij; mix: take in water after eating.

On the 23d blood and albumen had altogether disappeared in the urine. On the 27th signs of pleural or abdominal effusion were no longer present, and the patient was discharged convalescent on the 30th.

Some very intelligent practitioners who have had experience with this form of disease, entertain the opinion that quinine tends to increase the renal congestion, and that consequently it should not be given. Theoretically, this opinion derives some support from the known fact that quinine is in part eliminated from the system through these emunctories. I can, however, confidently state that in so far as it regards my clinical observations, no corroboration of this opinion has occurred. I therefore strongly recommend that every effort be made to secure cinchonism at the earliest attainable moment. In connection with these remarks it is proper to allude to the question of administering diuretics, or other remedies intended to exert some effect local to the kidneys. Stimulating diuretics are certainly improper; for it is unreasonable to attempt to lash crippled organs into the performance of function. But we must have respect to the testimony of a number of good physicians, who have found some of this class of remedies serviceable. Some excellent practitioners have found turpentine of great service in the cure of malarial hæmaturia. Is this benefit due to its diuretic effects or its hæmostatic properties? I think we may unhesitatingly conclude that it is due to the hæmostatic action of the drug. But even admitting this, it is not easy to explain how a hæmostatic proves curative, in this affection. The amount of blood lost is never sufficient to involve danger. It would then seem that if hæmostatics really possess curative powers, they must be ascribed to their effect upon the minute blood-vessels in preventing engorgement and rupture into the renal structure, rather than the same effect over capillaries breaking upon free surfaces. These remarks apply not only to turpentine, but to tannin, gallic acid, buchu and ergot.

A still greater number of observers speak in terms of commendation of the good effects of bitartrate of potash and of lemon acid.

These are remedies which I give with very great satisfaction in all forms of malarial fevers. Their action is probably as complex as it is beneficial. We know that they are exceedingly facile of absorption, and on account of this quality, their great mobility may be expected to set up currents which tend to remove visceral obstruction and to hasten processes of elimination. But their good effects are often so quickly produced as to suggest a catalytic action.

When arrest of renal function takes place, there is nothing left us to do but to attempt to replace the missing function by urging the bowels with hydragogues, and by encouraging sweating. Elaterium, or comp. jalap powder may be given. Cups, either dry or with incisions, may be placed over the loins, and warm hip baths or warm moist fomentations resorted to.

The cases reported attest to my appreciation of calomel. At the same time I believe it to be more erroneous to trust to mercurials exclusively, in the treatment of malarial diseases of any form, than to omit their use, and trust wholly to antidotal measures. The benefits of calomel are limited to removing visceral obstruction and renewing weakened functional activity, and to its effects as a powerful and sure eliminant.

Our knowledge of the pathology of hemorrhagic malarial disease can be utilized to a valuable purpose in practising measures for its prophylaxis. We know that chronic malarial poisoning in a great majority of cases antedates its occurrence; let us then endeavor to prevent the occurrence of hemorrhage by addressing proper treatment to the preceding cachexia. We know also another fact: that however complete the condition of cachexia, a paroxysm is generally necessary to the occurrence of hemorrhage. The cold fit is invariably the period of initiation of the hemorrhage, and therefore remedies which intercept, or even which abridge the cold stage, may be profitably employed in preventing hemorrhage.

The subjects considered in this paper are of great importance, but I fear that I have committed an error in endeavoring to reduce their discussion to the limits of a single magazine article.

ARTICLE III. *Stricture of the Urethra.* By T. G. RICHARDSON, M.D., Professor of Surgery in the Medical Department of the University of Louisiana.

So much has been written and said about strictures of the urethra within the last few years by surgeons of ability and acknowledged authority, that I cannot reasonably expect to add much, if anything, to the present stock of knowledge on this subject; but having been engaged in its study and treatment for more than a quarter of a century, I feel that I commit no impertinence in presenting my views to the profession in a systematic form. Being obliged, however, to compress what I have to say within the limits of a "journal" article, I shall attempt nothing more at present than to call attention to the morbid anatomy and treatment of the simple organic species of this serious malady.

Definition. By the term stricture of the urethra is meant a permanent narrowing of the urethra produced by pathological changes in or beneath the mucous membrane lining the canal. By this definition, all obstructions resulting exclusively from spasmodic contraction, enlarged prostate gland, acute inflammation and tumefaction of the mucous membrane, perineal abscess, etc, are entirely excluded. Simple spasm of the urethral muscular fibres may be sufficient to interrupt temporarily the flow of urine and prove an obstacle to the introduction of the catheter, but no more deserves the name of stricture than cramp of the gastrocnemius and soleus muscles that of varus. Moreover, spasm is a very important element in the production of retention of urine in cases of stricture, but is rarely possible of itself to give rise to this condition.

Morbid Anatomy. Two distinct forms of stricture produced by distinct causes, and differing essentially in their anatomy, are usually recognized: one, being caused by wounds, is called *traumatic* stricture; the other, the result of chronic inflammation, is known as *organic* stricture, although, strictly speaking, they are both organic.

Simple organic stricture consists either in local thickening or hypertrophy of the mucous membrane, or, what is far more common, in an inflammatory deposit of lymph in the sub-mucous areolar tissue. The existence of bands of lymph stretched transversely across the canal described by some authors as "bridle stricture" must be exceedingly rare. In traumatic stricture, on the other hand, there has been a solution of continuity, and the narrowing is due to the continual shrinking of the resultant cicatrix. This distinction is of great practical importance and should be clearly borne in mind, but I am convinced that in a vast number of cases of organic strictures met with in cities there has been more or less loss of mucous membrane, principally from injury induced by the ignorant or careless use of instruments, and that they partake, consequently, of the characteristics of both species.

Varieties. The anatomical varieties of simple organic stricture recognized by surgeons are based mainly upon the extent and consistence of the morbid deposit. Hence the terms "close stricture," "long stricture," "tortuous stricture," "elastic stricture," "cartilaginous stricture," etc. In like manner we may with perfect propriety speak of "soft stricture" in which the inflammatory product has not yet undergone complete transformation into analogous tissue. The "pack thread" variety belongs properly to the traumatic species, being produced, I conceive, by a transverse rupture of the mucous membrane by chordee, which so frequently occurs in the acute stage of gonorrhœa. "Impermeable stricture" (*atresia urethræ*), which is very rare, is also generally traumatic in its origin, and cannot exist, as a matter of course, except where there is a fistulous communication with the urethra behind the contracted point.

Number and Locality. In much the larger number of cases there is but one stricture, but two or more are not uncommon. Where more than three, however, are said to exist there may be, in reality, but one, presenting different degrees of narrowing at different points.

The exact locality of stricture has been proved by the late careful measurements of Sir Henry Thompson to be most commonly the posterior part of the spongy urethra, in what is usually called the sinus of the bulb, just in front of the anterior extremity of the membranous division. The next most frequent spot is about an inch farther forward; next, the middle of the spongy division, and then the external meatus and the membranous portion. Strictures never occur in the prostatic urethra. When more than one stricture is present one of them will be almost invariably found at the point first indicated.

Causes. The cause of simple organic stricture is chronic inflammation, most commonly of gonorrhœal origin. I am aware that Bryant in his recent excellent work on surgery, states that of 646 cases only 273 could be traced directly to gonorrhœa, but he acknowledges that in 330 cases he could discover by questioning his patients no definite cause whatever, a confession which renders his figures of no avail in an etiological point of view. Although I have kept no record of my own cases, I am quite sure that at least four-fifths of them originated in gonorrhœa, and assuming this to be strictly true, one of the first questions I ask a patient supposed to have stricture is, "When did you have the clap?"

According to my observation chancre is seldom a cause of stricture, and for the very simple reason that chancrous sores in in the course of the urethra are very uncommon in this country. I do not consider the contraction of the external meatus which results from cicatrization of chancre or chancroid in this situation as coming strictly under the head of stricture of the urethra.

Wounds, whether the result of accidental causes, such as gunshot, falls upon the perineum, catheterism or the like, are undoubtedly causes of stricture, oftentimes of the very worst kind; but these produce the traumatic species, which is dependant, as already stated, upon the presence of a cicatrix by which the solution of continuity is repaired. This is also true of the transverse rupture of the mucous membrane which is produced by chordee, giving rise to the "pack-thread" variety.

I have not been able to satisfy myself that injections used in the treatment of gonorrhœa have any connection with the subsequent development of stricture, unless it be in cases where strong solutions of nitrate of silver or other powerful irritants have been employed with the view to cut short the specific inflammation in its incipiency. Even in reference to such cases a dogmatic statement cannot be made, since the application of such remedies to the eye in gonorrhœal opthalmia has not been commonly observed to result in destruction of the conjunctiva and consequent cicatricial contraction of the eye-lids. I am equally doubtful as to the effects of morbid states of the urine, or of the gouty, syphilitic or strumous diatheses. These may produce spasmodic contractions, and may in this manner aggravate pre-existing organic obstruction, but can scarcely be considered exciting causes.

Symptoms. Considering the frequency and the importance of the act of micturition and the physical satisfaction, amounting almost to a pleasurable sensation, accompanying the passage of a full round stream of urine from the urethra, one would suppose, *a priori*, that any considerable change in the number of nature's calls, in the size of the stream, in the sensitiveness of the canal, or in the degree of force necessary to empty the bladder, would immediately attract attention and excite the solicitude of the individual. But such is not found to be the case, and in a very large proportion of the subjects of urinary obstructions the assistance of the surgeon is not sought until absolute retention of urine is threatened. The history of such cases, however, when carefully investigated, will generally be found as follows. In the first place, at some previous period, it may be only a few months, or not unfrequently one or more years, there was a clap which, with or without treatment, gradually subsided, but never entirely disappeared, leaving a slight gleety discharge, often scarcely more than sufficient to moisten the parts immediately around the external meatus. This chronic discharge, let it be here observed, is an *invariable* precursor of stricture. Indeed, reversing the proposition, I do not hesitate to affirm, as a maxim, that *all chronic urethral discharges of a gleety nature are sure indications of the presence of stricture.* There may be stricture without the individual being aware of any abnormal secretion, but the surgeon having satisfied himself of its existence, feels almost assured at once of the nature of the difficulty. Along with this symptom there is, of course, diminution and alteration in the form of the stream of water; the latter varying very greatly in different cases, being sometimes twisted, sometimes directed toward one side, and nearly always more or less scattered. An increased expulsive action is necessary in order to empty the bladder; the time required to effect this object is nevertheless increased, and nearly always there is dribbling at the close of the act.

Diagnosis. However well-marked and characteristic the symptoms of stricture may be, it is only by exploration of the urethra by means of the sound, bougie or catheter, that a positive diagnosis may be made. Before proceeding to employ this method, the operator should have a clear understanding of the points sought to be established. These points may be briefly stated as follows: First of all, he seeks to discover whether the symptoms are due to a permanent organic obstruction in the urethra or to spasmodic contraction: secondly, to determine the site of the obstruction: thirdly, to ascertain the degree of contraction; or, in other words, the size of the canal: fourthly, to determine as nearly as possible the consistence and sensibility of the parts: fifthly, to measure the linear extent of the narrowing; and, sixthly, to discover whether it is single or multiple. All of these questions, with the exception of the last, which is the least important, may be settled by the judicious use of the ordinary catheter or sound.

In making this exploration the surgeon is supposed to be thoroughly acquainted with the anatomy of the urethra in all its parts, and to possess more or less practical tact in the introduction of the catheter; otherwise he runs great risk of doing irreparable mischief to his patient. The instrument which I prefer above all others is a solid metallic bougie or sound, slightly conical at the point, and plated with nickel; although it is best to have at hand also an assortment of gum elastic bougies, to be substituted for the former in case they should be required. In the hands of an inexperienced surgeon, or the general practitioner, the gum elastic bougie should be employed. In the first examination a medium-sized instrument should always be used, and, having been warmed and thoroughly oiled, should be carried gently along the course of the urethra until it is arrested. Here there should be a pause for half a minute or more, until the parts have become somewhat accustomed to the presence of the instrument, when slight pressure may be made to insinuate the point of the latter into the contracted canal, great care being taken not to use sufficient force to rupture the mucous membrane, which, it must be borne in mind, is somewhat softened in consequence of disease. If this should fail, smaller instruments must be successively tried until one is found which can be made to penetrate the contraction for at least a little ways. This may be readily ascertained by the sensation of grasping which is felt upon making a slight retraction. If the instrument should pass entirely through the obstruction and on into the bladder, all the facts necessary to establish a diagnosis, with the one exception indicated, will have been ascertained.

In order to determine the linear extent of a stricture, a fact which is not at all essential to its skilful treatment, a bougie, either metallic or gum elastic, bearing an olive or acorn-shaped knob at the point (*bougie a boule*, as it is called by the French,) must be used, and should be passed entirely through the stricture. Upon withdrawing the instrument the exact point at which the knob comes in contact with the far extremity of the stricture is readily felt, and the distance of the proximal extremity from the external meatus having been already ascertained in the introduction, it is apparently very easy to estimate the distance between the two points. But I must confess that I am not an advocate for the use of this bougie, notwithstanding my predilections in its favor derived from the study of the classic writings of its inventor, M. Leroy d'Etoiles, more than twenty-five years ago. As just stated, it can be employed only in cases which will admit the passage of an ordinary bougie of medium size, and then is of but doubtful service. In the attempts so often made to force it through strictures of smaller diameter, and more especially in its withdrawal after having been passed, serious bruising and laceration of the mucous membrane are likely to result.

Treatment. The treatment of stricture is either palliative or radical. The palliative treatment, to which alone the larger proportion of strictures are amenable, consists in more or less forcibly opening the contracted canal, and maintaining it in the patulous state by the continued use of instruments throughout the remainder of the patient's life. The radical treatment, on the contrary, involves the removal by absorption of the organized lymph, and the restoration of the parts to their natural pliancy. An attempt will here be made to indicate the classes of strictures adapted to these two methods, and some of the proceedures employed by surgeons to effect one or the other result.

Radical Treatment. All simple organic strictures are susceptible of complete cure in their earlier stages, while the mucous membrane at the site of contraction continues intact, and the lymph deposit has not undergone the induration and permanent fibrous transformation to which it is liable in consequence of persistent or frequently recurring irritation. Unfortunately the number of such cases which fall to the lot of city surgeons, or are found in the wards of our large hospitals, is very few indeed, for the simple reason that they have generally passed through the hands of others and have not been properly treated. Of the large number of cases which originate in cities or come from the country, the great majority apply first to empirical advertisers who, although they may succeed in stretching the stricture so that the patient is able for the time being to pass a full stream of water, leave him, so far as a radical cure is concerned, in a much worse condition than he was before. With such cases, and only such cases to deal with, it is not surprising that many excellent surgeons have been led to doubt the complete curability of any stricture. The country practitioner, however, oftener sees the disease in its incipiency, while the mucous membrane is yet unbroken, and the sub-mucous deposit is comparatively soft and absorbable; and it is to him, therefore, that we must mainly look for practical evidence to the contrary.

The means by which absorption may be induced in these cases are local and constitutional.

The *local treatment*, which is of far greater importance specifically than the constitutional, consists in the use of pressure, unfortunately called "dilatation." The method by which this is applied is the introduction of bougies, sounds or catheters, which may be considered as intra-urethral bandages, since they act in precisely the same way as bandages applied to the limbs to promote the absorption of inflammatory products in these situations. This principle should be clearly recognized by the young surgeon, and he will then be restrained from the use of rudeness or undue force in his manipulations. If, on the contrary, he should accept the too prevalent doctrine that it is by mechanical stretching that all strictures are to be overcome, he will be almost sure to lacerate the mucous membrane or, at least, so to bruise it that it will be a loss of tissue by the morbid action subsequently set up. In the latter event, the integrity of the membrane having been destroyed, nature fills up the gap with a cicatrix, and thus converts a curable into an incurable stricture. Hence the great necessity for the utmost gentleness in the treatment of young strictures of the simple organic species which may be submitted for the first time to local treatment.

For the general practitioner, the safest instrument is undoubtedly the gum elastic bougie or catheter. Of these a large assortment should be provided—some with the ordinary rounded points, others conical to the extent of an inch or less, and others again with long, narrow, conical extremities terminating in rather fine points. The last mentioned is a most admirable improvement upon the old style, and when used with common care, is a great safeguard against injury to the mucous surface. In the hands of an experienced surgeon stiff metallic instruments, more or less conical but never acute at the point are probably more satisfactory on account of the greater ease and rapidity with which they may be introduced; but except in such hands they are likely to do a vast amount of injury. I am convinced that if the gum elastic bougie were more frequently employed that more strictures would be radically cured.

A stricture of the species now under consideration having been diagnosed, the operator should proceed to apply the needed pressure by selecting an instrument which may be made to pass through the stricture without the use of much force—precisely how much cannot be expressed in language, but, in general terms, not more than is represented by one or two pounds weight. In order to accomplish this a great deal of manipulation may be required, and the surgeon's patience severely tested, but haste is not demanded, and without gentleness the case may be rendered incurable. The instrument should not be allowed to remain in place longer than from two to five minutes. A No. 2 or No. 3 having been once passed there is generally but little difficulty afterwards, unless too much force has been used and the morbid action thereby increased. A second introduction should not be made in less than two or three days, when the same sized instrument should be employed, and if but slightly grasped immediately withdrawn and replaced by the next size. By cautiously proceeding in this manner, not resorting to the bougie oftener than every second or third day, and never attempting an increase of more than one size at a sitting, it is oftentimes wonderful how rapidly absorption will take place. When a No. 12 has been reached, which may require from four to eight weeks, the patient may be instructed in the use of the instrument himself and discharged. My usual instructions under such circumstances are, "introduce the bougie twice a week for a month, then once a week for two months, then once a fortnight for three months, and, lastly, once a month for six months. By this time, if the case be a favorable one, and no unforeseen accident occur, there is good reason to believe that the lymph deposit will have been so far removed that contraction will not again occur.

If a No. 2 or No. 3 cannot be made to traverse the entire narrowing at the first sitting without force, it is better to adjourn the proceedings until another day than to run the risk of wounding the mucous membrane by farther efforts with the same or a smaller instrument. If only an entrance has been made, this is a great gain, and it is probable that at the next sitting still greater success will result.

If the contraction is so great that even the point of the bougie cannot be insinuated, force is nevertheless inadmissible. Gentle pressure should be made with the instrument upon the extremity of the stricture from day to day until an entrance is effected.

It is seldom or never the case that these means fail in the class of strictures here referred to, but if they should, the practitioner has a further resort in the filiform bougie, of which he can avail himself if he has sufficient patience to work with it. An hour's careful manipulation, with the sweat standing in big drops upon the surgeon's forehead, not to mention the patient's weariness and exhaustion, is not an uncommon experience in such cases.

Constitutional Treatment. Beyond the employment of hygienic measures, such as quietude of body and mind, abstemious or liberal diet, according to the state of the general health, entire abstinence from everything capable of exciting the passions, and the free use of demulcent drinks to lessen the natural acridity of the urine, constitutional treatment of stricture is seldom resorted to by surgeons of the present day. And yet I submit whether it is not quite as rational to employ mercurials or the salts of potash to promote the absorption of organized lymph beneath the mucous membrane of the urethra, as when this substance is found in the epididymis, in the iris or in the parenchyma of the lungs after inflammation of these respective organs? I have had no experience in the use of these remedies myself, but the late Professor Stone always contended that they were eminently beneficial, in his hands in properly selected cases.

Palliative Treatment. As already stated, comparatively few strictures met with in hospitals and in city practice generally are susceptible of radical cure, owing to the fact that in the great majority of cases the original difficulty has been aggravated by injudicious treatment. When once the mucous membrane of the urethra has suffered loss, whether by the bungling use of instruments, by ulceration or by accidental injury, as in wounds, the resulting cicatrix will always prove a bar to a complete cure. The same is true of cases of very long standing in which the original lymph deposit has become transformed into a tough, elastic, fibrous tissue which it is impossible to get rid of.

The management of many of these cases does not differ materially from that already indicated; for, notwithstanding they may not be completely cured, in consequence of the presence of cicatricial tissue, yet nearly all the lymph which has not been thus transformed may be removed by absorption, and leave only a small amount of new stricture to be stretched from time to time by means of a catheter or bougie. It is advisable, therefore, in all cases which are not clearly beyond all hope of being benifited in this way, to institute the same systematic course of pressure by means of bougies.

This milder means having been already faithfully tried with only partial success, or such treatment being inapplicable, as, for instance, in cases of traumatic origin, mechanical dilatation, rupture, internal incision or external incision, should be resorted to. The object of each and every one of these operations, however, is only to open the canal so that a large-sized bougie or catheter may be subsequently employed. In all of them there is a breach made in the walls of the urethra at the seat of stricture. The gap thus created must be closed by cicatricial tissue, which can be prevented from contracting only by the constant use of instruments during the remainder of the patient's natural life.

ARTICLE IV. *Prognosis of Cancer.* By SAMUEL LOGAN, M.D., Professor of Anatomy and Clinical Surgery in the University of Louisiana.

In cases of cancer the prognosis is only less important than the diagnosis. I do not propose to enter into an exhaustive consideration of this subject; but in connection with the report of a case of unusual interest, to invite the attention of the reader to what I conceive to be that element in the natural history of the disease which throws most light on its prognosis, either with or without any operative procedures.

The question of prognosis has a practical bearing in two directions. On the one hand the patient and the friends, naturally enough, desire to know the probable chances of the former, while the surgeon, on the other hand, is more or less influenced in deciding upon the advisability of operative interference by his views of the prognosis. The prognosis, it is true, may also be markedly affected by the operative measures the surgeon may adopt. Paget's estimate is that in cases which have been subjected to operation the average duration of life is about 28 months, while those left alone live about 24 months. But in those cases presenting the worst features the surgeon is most apt to refrain from the use of the knife, while those of a milder type are chosen for operation, so that such statistics, viewed by themselves, are comparatively worthless as aids to even the post-operative prognosis. Indeed, such general statistics are of little value, so far as prognosis is concerned, in any disease of so variable a type as carcinoma. The individual cases differ too much in many important details to be advantageously grouped together in a general statistical table.

To attain even an approximately accurate principle, or law by which we may be guided in forming our prognosis, it behooves us to study especially the peculiarities of those cases which on the one hand hurry the patient to the grave, and those, again, which are exceptionally slow, or which seem to be permanently removed by a successful operation. By a careful contrast and comparison of these opposing classes, we are more apt to be enabled to discover some general principle by which our prognosis may be facilitated in any given case. These classes of cases have always, therefore, attracted my special attention; and it seems to me that one prominent law may be discerned, one cardinal principle may be observed to obtain, by which we may be usually guided towards as accurate a prognosis as the nature of the case will admit. The law I would insist on is, that the prognosis must vary in a direct ratio to the degree of local activity the disease has presented. Other circumstances may have more or less modifying influences, *i. e.*, age, locality, special pathological form of the neoplasm, &c.; but far above all these, we notice the inherent degree of activity peculiar to the clinical history of each growth as the most important feature from which our prognosis should be mainly derived.

I make no claim to being the first to recognize this law: any one at all conversant with the writings of our surgical authorities will remember that some of them allude to it. I do not think, however, that any of them attach sufficient importance to it as the main principle by which we should be guided in our prognosis, either before or after operation. The f llowing remarkable case I would report as bearing directly on this point.

Case. July 1st, 1868. R. H———, native of Georgia; resident of Jefferson, Texas, aged 36; strong and muscular, weight, 170 pounds; height, 5 feet 10 inches. Had hemorrhage from the lungs at intervals during the late war, and had to abandon active service, on account of failing health, suffering from emaciation, debility, cough, etc., etc. Several members of his family have died of consumption As soon, however, as he left the field and procured good food—and an abundance of it, with the comforts of home, his health began to improve, and he apparently entirely recovered from his lung symptoms. He has since enjoyed very good general health, with the exception of a slight attack of paralysis about three years ago, which affected the left side, and confined him to his room for some months, during which time he suffered great pain along the back, whenever he was lifted, and in the extremities at other times. The attack came on suddenly, but was at no time accompanied by the least loss of consciousness.

He is still liable to occasional cough, but has been for some years steadily gaining flesh. Within the last month, he has gained 17 pounds. He is a hard drinker, and suffers occasionally with sick headache and deranged digestion from this cause.

Three years and a half ago he first noticed that his lett testicle began slowly and painlessly to enlarge; and it has continued to do so to the present date. About two years ago it was punctured by a physician, with the expectation of finding serum; nothing but a drop of blood exuded, though the trocar and canula were inserted to their whole length, and a probe was pushed some inches further through the latter. The puncture soon healed up. The tumor has never given him any pain worth mentioning, except, after walking, when a weary, dragging sensation is experienced in the back. It is so heavy, that he is obliged to carry it suspended in a sling, which is passed round his neck. So carried, it does not prevent him from going wherever he pleases, although it has now acquired about the dimensions of a medium size adult head. It is almost a perfect oval; has a weighty feeling; is of the same consistency throughout; is remarkably resilient, almost fluctuating under manipulation, and there is a tight feeling about it as if contained in—and thoroughly distending—a dense membranous sac. The cord is somewhat enlarged—apparently from venous dilatation, but of natural consistence.

The penis, while evidently not incorporated in the tumor, is so enveloped in the skin which has been elevated around it, as to present only about 1½ inches projecting independently. The pressure on the urethra interferes somewhat with urination. The right testicle is healthy, but is pressed up and towards the right groin.

The skin moves freely all over the immense tumor; its veins being somewhat enlarged. No involvement of the neighboring glands can be detected, either by external or rectal examination.

Diagnosis. Either a soft fibro-plastic, a cystic, or an encephaloid. The great size and comparatively slow growth, the painlessness and the absence of marked vascularity, rather favored the idea of its being a fibro-plastic growth, while its feeling of almost fluidity, seemed to contradict such diagnosis. The negative result of the former explanation, threw great doubt on the supposition of either a cystic tumor, or a hydrocele. A positive diagnosis was therefore deferred till the patient was under chloroform.

Operation. July 1st, 1868. Present, Drs. B. H. Moss, L. G. Capers, W. S. Mitchell, and some ten or twelve other physicians of this city.

As soon as the patient was brought under the influence of chloroform, a large trocar and canula were plunged into the tumor. No fluid escaped, except a few drops of blood. The mass was then removed by a kind of oval amputation. The cord, which was apparently quite healthy, was slowly divided with an ecraseur about two inches above the point at which it entered the tumor. Four ligatures were nevertheless required, as quite a cross-fire of arterial jets shot out as soon as the ecraseur had performed its work. Three other ligatures had already been applied to secure some vessels which had been severed in dividing the posterior relations of the mass. The usual dressings were applied, and the parts were covered with lint saturated with carbolic oil.

Upon placing the tumor in a wash hand basin, and laying it open, it presented all the characteristic features of encephaloid; indeed, the section presented almost precisely the same appearance in *size*, color, consistence, etc., of a slightly softened brain; and the microscope revealed the usual multinucleated, large cells of encephaloid cancer, in immense numbers.

The tumor was enclosed in a dense membrane, which I presume, was the tunica vaginalis hypertrophied. It *weighed* 9½ *pounds*, independently of the blood which had drained from it. The wound healed shortly by granulations, and the patient was discharged August 10th, 1868

Prognosis. August 10th, 1868. The patient being a highly intelligent and educated gentleman, was fully alive to the serious nature of the case, and correspondingly solicitous in regard to the prognosis, especially when the nature of the tumor was made apparent to all after its removal. He was fully informed as to the usually fatal termination in such cases; but I was glad to have it in my power to express to him the opinion that, as the growth in his case had exhibited an almost unparalleled torpidity before I removed it, there were grounds to hope that its development now might be correspondingly delayed. I was not at that time as confident in my prognosis as I would now be, in a similar case.

Result. June 1st, 1873. In a letter received from the patient, bearing date May 16th, 1873, he informs me that there are no evidences of any return of the disease. He has been somewhat reduced in weight from a laryngitis contracted last fall, from which, however, he expresses himself as having recovered.

REMARKS.

It may have seemed reasonable to suppose from the immense proportions which this cancer had attained, and from the fact that encephaloid of the testicle usually destroys the patient in a few months, even after early castration, that this case too, would have pursued the usual course. But such cases usually terminate rapidly after castration, *because they generally present features of marked activity from the first.*

This view of the subject of cancerous growths will explain the anomalous position assumed by Leroy d'Etiolles, and a few of his followers, who advised delay in resorting to the removal of the disease till the activity of the growth had subsided. This surgeon, it may be presumed, found, as had been observed by others, that a better success attended those cases whose previous growth was slow. But the *inference* he drew from this correct clinical generalization is itself totally incorrect. He has found but very few practical surgeons to endorse him—I may say, almost none to follow his dangerous advice. It may, indeed, be considered an axiom in surgery, that if we operate at all in malignant disease the sooner we do so the better. The delay he practised only enabled him to, as it were, select his cases, and those who take the trouble to "look behind the scenes," in matters of surgical statistics, will readily understand how much apparent success in other surgical procedures also can be made out on paper and with figures, by means of a system of judicious culling of cases for operation. Before forming an opinion of a surgeon's success by the number of cases on which he operates, we ought to have a faithful record of all the cases he "dodges"—if I may be permitted to use such an exprsssion. We are all often tempted most sorely to "dodge" cases which our consciences force us to accept.

If in cases of malignant disease we wait for the activity of the morbid action to subside, as Leroy d'Etiolles advises, many of the most unfavorable type will be eliminated from our statistical tableaux by never falling into the desired stage of torpidity. It is very rarely, if ever, the case that a carcinoma ot decidedly active character changes its clinical features in this respect. At least this is the result of my observation; and I would appeal to my surgical confreres to question their memories and their note books on this point. I venture to predict that they will agree with me, that so far from there being any tendency to a lessening there is almost invariably a tendency to an increased activity—often in a fearfully accellerating ratio—in the growth of these neoplasms. As a rule, which admits of but few exceptions, the longer we delay the more active becomes the growth. Each case, even in its earliest stages, presents, as a rule, its own typical grade of morbid activity; and I think it will be found that upon a correct estimate of that grade ot activity, in each case, will mainly depend the more or less correct character of the prognosis. The more rapid the growth and the greater the degree of local diffusion, the sooner will the disease return after the operation; the more tardy the growth and the less the local diffusion—for diffusion is a marked evidence of activity—the longer will be the interval before the disease reappears, and the better the chances for permanent relief.

ARTICLE V. *Contribution to the History of Ocular Syphilis.* By DR. V. GRIMA, Visiting Surgeon—Eye Wards—Charity Hospital, N. O.

A severe form of disease of the eye is to be observed in some cases of syphilis, more especially during that period of the disease between the secondary and tertiary stages. The trouble seems quite infrequent, and it may be interesting to state that the cases we have met with so far have been observed among the *colored* people exclusively.

The disease begins as an ordinary case of catarrhal conjunctivitis, the symptoms as follows: 1st, *photophobia*, more severe and more lasting than in common catarrh; this symptom will not subside during the whole course of the accompanying irido choroiditis: 2d, *lachrymation*, especially during the first stage of the disease: 3d, *catarrhal* discharge (muco-purulent); the lachrymation and secretion have always been moderate: 4th, redness and swelling of *tarsal* conjunctiva: the conjunctiva *of the lids* is red, very much thickened, the papillæ enlarged to such a degree as to appear in some instances as warty granulations: 5th, the conjunctiva of the lids appears dotted with *white opaque* spots resembling the tubercular granulations, but much *larger*, more *superficial* and prominent, more *opaque* and less numerous. In the beginning stage they look somewhat like vesicular growths, but seem to change rapidly into vesico-pustules. These pustules are the striking feature of the disease; they are located in the conjunctiva of the tarsal cartilage, the ocular conjunctiva not being involved, and very often not even injected (the other forms of pustular conjunctivitis are usually seen on the ocular conjunctiva). The presence of these pustules has in all our cases been the immediate warning of the second stage of the disease, i. e., iridocyelitis. The patient then complains of pain in the ball, the photophobia and lachrymation increasing at the same time, The inflammation of the vascular coating (iris, ciliary body and choroïd) proceeds immediately, with great intensity in some cases, the process being rapidly destructive. The irido-cyclitis has presented two different forms:

First Form—very much like all other forms of irido-choroidïtis when rapid atrophy is the result; the pupillary adhesions, and exudations in the pupillary space, are formed with great rapidity; the anterior chamber disappears entirely, and the softening and atrophy of the ball proceed rapidly. A large iridectomy may check the onward march of the disease, but it must not be expected to give as much satisfaction as in other forms of irido-choroïditis with less tendency to atrophy.

Second Form. It is characterized by the formation of condylomata in the iris, and especially in the ciliary portion of the eyeball. The syphilitic gummy tumors of the iris have not shown the same malignity as the same tumors in the ciliary region, the latter having in most cases been a sign of total and rapid destruction. The process of destruction, in most cases, has been the sloughing and perforation of the coatings of the eye, and subconjunctival hernia of the tumor, the final result being complete atrophy of the ball. The opening through the sclerotic coat is sometimes remarkably regular, as if a perfectly circular opening had been cut into a sound sclerotic coat.

The *diagnosis* of the disease is based mainly upon the incipient pustular conjunctivitis, and the final ciliary condylomata. The pustules may be mistaken for tubercular granulations, but they are less numerous, more superficial, larger, more opaque and white; all the other symptoms differ sufficiently. The condylomata can hardly be mistaken for malignant growths or strumous productions; the history of the case will furnish ample information, especially when a condyloma shows itself on the iris.

The *prognosis* is very bad in most cases, and the *treatment* very uncertain. The disease seems to show itself in very severe cases of syphilis. The medical treatment in our cases has been that of specific irido-choroïditis. The conjunctivitis requires mild treatment; nitrate of silver (gr. x to ℥j) has proved very useful; the local application to the lids is made by means of a camel's hair brush, after complete eversion of the lids, and washed off with clear water. Atropine is freely used from the very beginning of the trouble, the irido-choroïditis being always the threatening danger. Iridectomy has been very useful, and in some cases remarkably successful, as long as the gummy tumors had not shown themselves in the ciliary region. A very large condyloma in the iris, or a spontaneous hemorrhage in the anterior chamber will, as a rule, make the case unmanageable. Cutting or snipping off the protruding ciliary growths has not been sufficiently tested; my impression so far is that the operation often promotes a phlegmon of the eyeball.

Further investigation is required, especially as concerns treatment and pathological anatomy. My object, for the present, is merely to call the attention of investigators to the coincidence of a pustular conjunctivitis with a severe form of irido-cyclitis, in syphilitic patients. The suppurative inflammation, in the conjunctiva, seems to originate in the meibomian follicles; puriform matter may be easily squeezed through the opening of the follicles; the pustules, which are in some cases very sensitive to touch, and protruding, appear as abscesses of the meibomian follicles; they are always accompanied with redness and thickening of the conjunctiva, and swelling of the papillæ. The healing process is very slow. Our cases were furnished by the *colored* patients exclusively, and have always proved very severe, and in some instances unmanageable. I will venture to say that, as far as my experience is concerned, diseases of the eye are, as a rule, more severe, less liable to yield to treatment, among the colored people than the same diseases among the white people.

ARTICLE VI. *Spasm of the Urethra.* By EDMOND SOUCHON, M.D., Demonstrator of Anatomy and chief of Surgical Clinic to the Professor of Surgery, University of Louisiana. Visiting Surgeon to the Charity Hospital of New Orleans.

In the month of April, 1870, I met in consultation with Dr. Borde, of this city, a case of this most interesting affection. Wishing to report the case, we made researches in books and periodicals within our reach, but we were much astonished and disappointed to find no description of this strange and grave affection. What Paget has written on Stammering of the Bladder (see the January number, 1869, of the New Orleans Journal of Medicine) and the case reported by Professor T. G. Richardson, (in the July number of the same journal,) may represent a form of spasm of the urethra, but certainly do not represent the whole of the history of spasm of the urethra or idiopathic spasmodic stricture of the urethra.

We were at a loss for full and correct information, when it was our good fortune to fall on the thorough history of the disease written out by Dr. Dolbeau. (Leçons de Clinique Chirurgicales professées à l'Hotel-Dieu de Paris, par J. Dolbeau, suppleant de Mr. Jobert de Lamball, et recueillies par le Dr. J. Besnier—Paris, Masson. 1867). The deficiency of our literature on this subject has suggested to us to give a resumé of Dr. Dolbeau's description

The disease, he says, is an idiopathic spasm of the muscular portion of the urethra and of the neck of the bladder. It comes on without any appreciable cause; but has been more frequently observed in subjects of a lymphatic and sanguine temperament or of a gouty family.

The disease presents three periods in its evolution.

The first period is the period of spasm. Micturition is frequent, hasty and involuntary: sometimes the patient has to urinate several times in an hour and even as often as every ten or five minutes. There is generally an acute pain during micturition but especially at the end; there is also at that moment some blood mixed with the urine. Upon exploring the canal with a No. 10 or 11 bougie, specially an olive-shaped bougie, it is stopped at the membranous portion, but if it be kept in place some time with gentle pressure, the obstacle gives way and the bougie is easily introduced into the bladder. It is also very easily taken out after a little resistance at the muscular portion.

The second period is the period of contraction. Micturition is more frequent, the pain more acute, and the blood is more abundant; there is also more or less pus in the urine. The bougie overcomes the obstacle with more difficulty and is not so easily taken out. The general health of the patient begins to break down.

The third period is the period in which the bladder and the kidneys become affected, consecutively, or secondarily. All the preceding symptoms increase; the blood and pus are abundant, there are intense pains in the loins and irregular attacks of fever.

which indicate that the kidneys are being affected. The general health gets gradually worse and the patient finally succumbs.

The duration of the disease is from 3 to 7 years.

As regards the course of the disease, it results from the description of the symptoms, that the disease begins by transient painful contraction of the muscles of the urethra, which becomes more and more frequent: after a time the contraction, from being brusque and transient becomes permanent; the spasm of the urethra is converted into a contraction, and from that moment the bladder and the kidneys become diseased on account of the retention of urine which follows the contracture. This can be overcome still, but it requires more straining, and yet the bladder cannot be completely emptied, there is retention of the urine and there results an hypertrophy of the bladder, followed by dilatation, and a congestion of the mucous membrane which ends in an inflamed condition, with blood and pus. At a later period the kidneys become affected, and, at that time, more particularly the system at large becomes impaired and the patient dies.

This disease might be confounded with several other affections, as neuralgia of the bladder, cystitis, organic strictures, and vesical calculus; but by studying the case carefully and comparing it with those diseases, errors will be readily avoided. I shall call here special attention to calculus in the bladder, which bears the closest resemblance with the disease we describe. Many patients have been operated upon for stone in the bladder where no stone was found; and nevertheless they were cured of their trouble. As regards the treatment, opiates, belladonna, and bromide of potassium are the remedies which succeed best in procuring relief, but nothing short of an operation will give a permanent cure. This operation is the division of the muscular fibres of the membranous portion of the urethra and of the neck of the bladder. The external or perineal section is far better, safer and easier to perform than internal urethrotomy. It is very important to operate before the bladder, but especially the kidneys, become diseased. If the operation is performed after that time, the patient is relieved of the spasm, but sinks under the suppuration of the kidneys.

The disease exists with the same peculiarities in the female.

In their case, forced dilatation might be better than the section.

ARTICLE VII. *Dieulafoy's Sub-Cutaneous Pneumatic Aspirator—of its use in the Reduction of Strangulated Hernia, combined with Dr. Lannelongue's method.* By Y. R. LEMONNIER, M. D. New Orleans.

The great difficulty experienced in the reduction of strangulated hernia, has been, at all times, caused by the bulk of that portion of the tumor on the outward part of the inguinal ring, or seat of constriction; and our inability in reducing said bulk, has heretofore in all cases where adhesions had not occurred, caused the use of the knife.

A hernia may not only be large, a priori, but may, in the course of a few hours after its strangulation, become larger by the formation of gases in situ, or the transudation of an odorless liquid, which very much resembles liquor sanguinis.

It would, therefore, prove a great advance in surgery, if the means of diminishing the size of a hernia, previous to its reduction, could be discovered. This, I am of opinion, has been done, as more fully appears by the subjoined observation from a case in which my assistance was requested, by my worthy and esteemed confrere, Dr. F. R. Alpuente, who was anxious to test the above instrument in the reduction of hernia.

Observation. George Grant, a negro, aged 35 years for some time past, used a truss for a right indirect inguinal hernia. The hernia was never strangulated. On the 21st of February, 1873, at about 3 p. m., while at work rolling a bale of cotton, having neglected to wear his truss, he was seized by a most acute pain in the right groin, and there noticed a tumor. He spent the night in wretched agonies, but it was not until the next morning at 8 a. m., that a physician was sent for.

Dr. Alpuente and myself reached the patient's house at 9:30 a. m., and found him, a stout and able-bodied man, suffering intensely from a pain in the right groin, where existed a *strangulated right indirect inguinal hernia* of the size of a *fœtus' head.* He informed us that the accident had happened suddenly while making an effort, and that since, his sufferings had been excruciating. No evacuations from the bowels. No vomitings; slight nausea. This was 18 hours after the accident.

Though chloroform was used freely, we never succeeded in bringing the man completely under its effects. In the meantime, Dr. A. and I, alternately attempted, but in vain, to reduce the tumor. The taxis proving fruitless, as a last chance, previous to an operation (10:30 a. m.) we punctured the tumor, 8 or 10 times, first, twice with needle* No. 1 of Dieulafoy's aspirator, and this progressing too slowly, we used needle No. 2, and a large quantity of gases, and about 2 drachms of a yellowish liquid of a *fecal* smell were aspired. This done, the tumor was reduced to half of its size.

Chloroform having again been given, the taxis was resumed by Dr. A. and myself, and after a prolonged trial of an hour and 45 minutes, the hernia was reduced.—(12 m.)

Here again we failed to obtain a complete result with the anæsthetic.

The operation over, a flaxseed poultice was applied to the abdomen. During the night a looseness of the bowels occurred, which, however, created no fears, for it happened long after the operation (a diarrhœa happening immediately, or very soon after the operation, being a bad omen†) a few drops of laudanum were given the patient, and the diarrhœa was readily checked. The night following the operation all pains had ceased, and 24 hours after, the patient had entirely recovered, when a severe ear-ache, which resulted in suppurative otitis set in, and confined him to the house 5 or 6 days.

To-day, June 9th, 1873, the patient has not since the reduction suffered from his hernia. A word about the modus operandi of the taxis. After alternately trying a gentle pressure, and all possible means to reduce the tumor, without bruising the bowel too much, and finding our trials fruitless, on account of the narrowness of the inguinal opening and its great constriction, we resolved to try Dr. Lannelongue's method of reducing hernia, which consists in "a continued pressure on the abdominal parieties immediately above the pedicle of the hernia, aided by taxis."‡ Pressing with our closed fists, first the one then the other, above the pedicle of the hernia, while one practiced the taxis, we finally

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*Needle No. 1 is $\frac{2}{3}$ of a millimetre, and No. 2, $1\frac{1}{3}$ m. m. in circumference. The circumferences represent the sizes of the punctures made in the bowel. 1 m. m. is 1-25 part of an inch.

† Vidal (de Cassis) says: "What is a bad prognosis, is when the bowels resume their function immediately after the operation. I have seen all patients die who had voided their bowels immediately after the reduction" Vide Vidal (de Cassis) edit. de 1861. Traite de Path. Externe vol. IV., page 190, Lignes 3 a 6.)

‡ Vide "Bulletin de la Societe de Chirurgie, (Paris,) January 19th, and February 2d, 1870," and "Gazette Hebdomadaire de Medecine et de Chirurgie, (Paris,) 1870, page 156 et 203."

succeeded, centimetre by centimetre, in reducing the hernia. There was no reduction en masse. This part of the operation was, by far, the most painful for the patient, and the most fatiguing to us, being compelled to use all our strength in compressing the pedicle. Whenever we ceased the pressure, to relieve the patient from the pain which this occasioned him, we were unable to reduce the bowel. It was only when we acted together—the pressure in drawing in the bowel, while the taxis pushed it in, that we succeeded. Mr. Lannelongue uses a bag of shots (5 or 10 lbs.) which he places over and above the pedicle of the tumor, while he practices the taxis. This of course, is preferable to the first, as it is a steady and regular weight, and by far less painful to the patient. But having no similar weight at hand, and the case being urgent, we used our closed fists as substitutes, and success crowned our efforts. We should always give preference to the bag of shots, as it is less painful to the patient, and less fatiguing to the operator.

Reflections. Two points of particular interest are here brought out; 1st. The great advantage of the aspirator in diminishing the size of the hernia, previous to its reduction, and the innocence of these punctures (*a.*) By its use we may save the patient from an operation which is variously estimated from different statistics as giving as much as 50 per cent. of deaths, whereas an author, Pott, reports that but 1 out of 50 dies; but this, I think with other authors, to be exaggerated. I admit that it is very difficult to judge of the results of the operation, as it depends on the promptness or delay in operating. Statistics of operations in Paris, show a per centum of deaths of over 50. Be the per centum what it may, it is great, and we should always exhaust all means at our disposal, previous to using the knife. This success, by the use of the aspirator, is not the first on record, it is the fifth, and many more have been recorded, (*b.*) The innocuous effects of pricking the bowels with this instrument, the supposed danger of which has been for many a great objection. Travers has already proven that in wounds of the bowels, the mucous membrane makes a hernia in these wounds, and thereby obliterates them. And if my memory serves me right, it was Velpeau who, in penetrating wounds of the abdomen, when there were small punctures or cuts of the bowels, replaced these in the cavity of the abdomen, and took no notice of the wounds which would cure by themselves.

Again, we see most commonly farmers in cases of tympanitis, among their animals, take their pocket-knives and prick the bowels to permit the exit of the accumulated gases, and yet these animals do not die.[1]

In fact, in cases of over-distension of the bowels, from an accumulation of gases, when these viscera are pricked to allow the gases to escape, we do not, as a rule, lay open the muscular coat; but the instrument penetrates between the muscular fibres, which are over-distended, and when these contract from the vacuum which results, their coaptation obliterates the opening, and if a few muscular fibres have been cut, the mucous membrane, as stated by Travers, makes a hernia between them, and the opening is obliterated.

Such are the two principal advantages of the aspirator in the reduction of strangulated hernia.

Dr. Lannelongue's method of compressing the abdominal parieties to facilitate the reduction of hernia, has been long known, but this modus operandi methodically and scientifically used, and upheld by well authenticated successes, is destined to be of great use. Several cases of success due to this method, are already on record, and some without the use of chloroform. The author thinks that "the abdominal compression is susceptible of fatiguing the muscular coats of the abdomen to the extent of weakening their contractile energy, and thereby neutralizing the tendency which they might have to keep the hernial contents in the sac.

P. S.—Since writing the above, I find in one of my journals that, I am not the first who substituted the closed fist for the bag of shots, in compressing the pedicle of the hernia. This was done by Mr. Verneuil,* Prof. of Surgery in the Paris school of medicine, in March or April, 1871, from whom we have the following :

* * * The patient still being under the influence of chloroform, and obtaining no results from the taxis, one of my assistants made a pressure on the pedicle of the tumor, one inch and a half above the crural arch, *not with the bag of shots, but with his closed fist.* A minute after the tumor went in; taxis was kept up during the pressure.

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*Vide "Gaz. Heb. de Med. et de Chir. No. 14. 5 Mai 1871, page 235—6.

CLINICAL REPORTS.

Atresia Vaginæ with Vicarious Menstruation. Reported by T. G. RICHARDSON, M. D., Professor of Surgery, Medical Department of the University of Louisiana.

Mary B. æt. 38, a woman of loose habits, was admitted to the Charity Hospital for ulcer of the leg, May, 1871. She came under my observation November, 1872, when upon investigation, I found complete closure of the vagina near its vulvar termination, no perceptible accumulation of menstrual fluid in the uterus, and periodical hemorrhage from a large ulcer upon one of her legs. Her general health was bad, and she was addicted to the use of opium. She informed me that she had been delivered of a child by instruments about two years previously, and that upon her first admission to the hospital, the surgeon of the ward discovered the stricture of the vagina, and succeeded in passing a small probe. I could not ascertain the precise date when the ulcer began to bleed periodically, or whether she had menstruated at all by the vagina since her delivery.

As no accumulation could be detected in the uterus, I made no attempt to open the vagina, but directed treatment to her general condition, and to the gradual abbreviation of the ulcer, intending to puncture the vaginal cicatrix at some future time, in case there should appear an effort on the part of the uterus to resume its natural function. In January, she was taken with acute pleuritis and died.

The *post-mortem* examination was made by my Chief of Clinic, E. Souchon, M. D., who brought me the genital organs. The closure of the vagina was complete to the extent of about half an inch. Above this point, the canal was slightly dilated, but of healthy appearance. The cavity of the uterus was about three times its normal capacity, and the walls of the organ of the usual thickness and density. About two ounces of thick grumous blood occupied the cavity of the uterus and the vagina.

NEW ORLEANS. June, 1873.

Editor New Orleans Medical and Surgical Journal :

The following case of early maternity, though not unprecedented, may be of some interest :

In the month of March last, I attended in labor a *child*, who became the mother of a healthy, well-developed infant, at the age of thirteen years and nine months. This young mother is a native of Texas, and began to menstruate about the time she reached the age of twelve years.

The labor terminated within eighteen hours of my arrival; the first stage being somewhat prolonged. After strong and effective expulsive efforts, there was again delay at the perineum, which required manual interference to extricate the head. Laceration of the perineum was fully apprehended, but did not occur. Assistance was again needed for the birth of the placenta. Its adhesion to the uterine walls was general, and required the introduction of the hand and a forcible separation. The mother made a rapid recovery. The secretion of milk was arrested by applying a belladonna ointment to the mammary glands for a few days.

The infant was nursed for a month by its grandmother, who had a child old enough to be weaned. Since that time it has thrived on condensed milk alone.

Very truly yours,

S. S. HERRICK, M. D.

Old ideas with regard to Common Salt as a remedy for the bite of the Rattlesnake.

The following essay is copied from the "*London Magazine or Gentlemen's Monthly Intelligencer*," published in London, in 1766. The information it contains will be sufficient reason for reprinting it. I copy it directly from the Magazine, the bound volume for the year being in my possession :

"Extract of a letter from Mr. Benjamin Gale, a physician in New England, to John Huxham, M. D., F. R. S., concerning the successful application of salt to wounds made by the biting of rattlesnakes; dated at Killingsworth in Connecticut, 20th August, 1764." (Read June 13th, 1765.)

I have been disappointed in procuring a rattlesnake, to make experiments in expelling the poison, particularly the efficacy of sea salt; but have now the satisfaction to acquaint you, that having desired Mr. Porter, an eminent surgeon, and a gentleman of worth and probity, to make enquiry, whether the efficacy of sea salt could be properly attested; he this day informs me that a person was wounded by that serpent, about the beginning of the month, just above his shoe. The tooth of this serpent, upon examination by the probe, he found to have entered near half an inch. The person bitten, immediately made a strong ligature above the wound, and in less than two hours came to Mr. Porter's. The leg and foot below the ligature were much swelled, and the patient grievously affected with nausea. Mr. Porter made immediately a deep scarification, rubbed it well with salt, applied a dossil of lint moistened over the salt and scarification, and dismissed his patient, who the next morning returned. The ligature was continued, nevertheless the tumefaction was greatly abated; the dressing before applied, was renewed, and the person recovered without any further application. This, perhaps, together with the former instance,* may serve to establish the truth of its efficacy."

G. of Georgia.

A Communication, with Editorial comment. It is proper to say that—except in this instance, and now only for the purpose of illustration—it is the intention of the editor never to criticise in the columns of this journal, any communication which is judged fit to appear on its pages. The utmost freedom consistent with the maintenance of professional truth, decorum and dignity will be allowed to all contributors.

> "There are more things in Heaven and Earth, Horatio,
> Than are dreamt of in your philosophy."

This text shall ever be before the editor's eyes, and when a contributor sends an observation, even if somewhat outre, it will be published without comment, if the character of the contributor is sufficient warrant for its correctness.

The following letter written for publication, is an illustration

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* "This was a person under the care of Mr. Strong, a surgeon in New England, who in the year 1761, was bitten by a rattlesnake in the left foot, between the great toe and the next. He immediately perceived a sickness at the stomach, which continued sometime. Scarifications were directly made, by cutting the skin pulled up by an awl, formed into a hook for that purpose. The first application was fine sea salt, which was plentifully sprinkled and rubbed in and about the wound and scarification. These were done in the space of about two minutes after wound was made. Then a poultice made of burdockroot pounded and mixed with a large portion of sea salt, was applied to the wound, and another of bloodroot was bound about his leg, a little below the knee. In the mean time, the patient took inwardly saffron and water, in which was steeped the bark of white ash, which caused him to vomit. The consequence of the wound was a tumefaction, which was greatest in the foot, but extended to the knee, where it ended. After these applications, nothing remarkable was observed in the wound. They were continued for two days, and the patient perfectly cured. Mr. Strong supposed the salt to be the principal ingredient which effected the cure."

of as liberal a disposition in this matter as I shall dare to indulge:

"I have never seen a report of a more remarkable *nævus maternus* than one that I saw in Gonzales county, Texas, in 1860. A white boy aged 12 or 13 years had on his back, between his shoulders a very distinct image of a rattlesnake coiled, with head and tail erect in the act of striking. In the spring of the year when those reptiles are most venomous, the colors of this image were much more distinct than at other seasons. There was no elevation of the surface occupied by the image above the surrounding surface, nor difference in the texture and appearance of the cuticle save in color, which was that of the snake, and arrayed in similar spots. The boy said that his mother during gestation, had been badly frightened by a large snake on which she came near treading. The image represented a snake about four feet long, and was in all its parts as broad as a snake of that size." * * *

Now here is a communication containing a statement of incidents almost sufficient in bearing and importance to revivify the dust of that ancient philosopher, in whose hands striped sticks proved such a valuable speculation. Or, if we may jump over so vast a lapse of time and come to our own contemporaries, this letter should gladden the heart of that modern philosopher, whose omniplastic genius has not only given us much that is instructive and beautiful in literature, but has been liberal enough to throw in "Elsie Venner."

That this case of nævus existed, I am well satisfied, that it resembled a snake—a rattlesnake, is no doubt true; that in the spring of the year, when heat and tropical lichen inflame the skin, its colors should deepen, is readily understood. That the mother got frightened by a snake during gestation, is not improbable; that this fright had anything to do with the occurrence of the nævus, each of my readers is left at full liberty to determine in accordance with his own personal observation or reading.

NOTICES OF NEW BOOKS.

Text Book of Physiology, General, Special and Practical. By John Hughes Bennett, M. D., F. R. S. E., etc., etc.; with twenty-one photo-lithographic plates. J. B. Lippincott & Co., 1873.

This work has been prepared by its author for the purpose of aiding his classes in their studies. It is therefore more especially designed for students. It is an admirably arranged and carefully matured work and worthy of high commendation either to the practitioner or student.

A Treatise on the Principles and Practice of Medicine; designed for the use of Practitioners and Students of Medicine. By Austin Flint, M. D., Professor of the Principles and Practice of Medicine and of Clinical Medicine in the Bellevue Hospital Medical College. Fourth edition, carefully revised. Henry C. Lea, 1873.

It is quite unnecessary to do more than to announce to our readers the publication of this new edition of "Flint's Practice." The author states in his preface that he "has sought to introduce the results of his continued clinical studies, together with the latest contributions to medical literature, both in this country and Europe."

It is gratifying to note that each new edition shows a growing disposition on the part of the author to prune down some of those rather painfully numerous allusions to the professional feats of "my colleague." It is natural enough for a medical writer, who also holds a position in a medical school, to quote from his colleagues more often than from others of equal, or even of superior merits, simply because their professional observations are generally proffered for his use. A writer, however, should very rigidly determine that, whenever all other things are equal, those authorities outside of his school interests should take precedence in his references. He thus avoids all imputations of cliqueism, and at the same time renders his book catholic in its scope. Prof. Flint's Practice of Medicine is an enduring monument to his genius and industry; but, after its publication, it becomes an object of property and pride to every honest and earnest member of the medical profession. Therefore, these allusions to blemishes, which otherwise might be considered insignificant, or not within the bounds of legitimate criticism. Whether the strictures are ill-founded, the reader may determine for himself by comparing the following quotations from the second, third and fourth editions, article "Laryngitis with Exudation."

Second Edition. "My colleague, Professor Sayre, has operated in eight cases, in five of which recovery has taken place. One patient was lost while everything was progressing satisfactorily, by a hemorrhage occurring in consequence of a defect in the construction of the tracheal tube; and in the other two fatal cases.

he thinks the patients might have been saved had the management in all respects been efficiently carried out. He attaches great importance after the operation, to an atmosphere heated to 90° and charged with steam."

Third Edition. "My colleague, Professor Sayre, has operated in eight cases, in five of which recovery has taken place. He attaches great importance, after the operation, to an atmosphere heated to 90° and charged with steam."

Fourth Edition. "My colleague, Professor Sayre, attaches great importance, after the operation, to an atmosphere heated to 90° and charged with steam."

In the "Fifth Edition" it may read: "My colleague, Professor Sayre, following the suggestions and practice of Jurine, William Budd, and many others, attaches great importance, etc."

EXCERPTA.

By F. Hawthorn, M.D., Professor of Materia Medica and Therapeutics, and Clinical Lecturer on Diseases of Women and Children, Medical Department, University of Louisiana.

Physiological Dyspepsia for Starchy Food in Infancy.

The animals of the class of Mammalia at birth find their proper aliment in the milk of the mother, and for a longer or shorter time they feed exclusively upon it. It is remarkable that among the same class of animals there are many which, at a later period, take exclusively aliments from the vegetable kingdom, that is, they are herbivorous. Why this difference of feeding between the first portion of life and the successive stages? No doubt all those animals, when new-born, whilst they find in the milk all the nutritive elements that are necessary for the growth and maintenance of their body, yet are not fitted to digest all the various aliments that offer convenient food to the adult animal. Indeed, if we deprive the new born animal of the milk, and try to feed it with the usual aliment of the adult, we see very soon that it suffers in its nutrition, and its life cannot be sustained. In the infant, vomiting and diarrhœa manifest themselves, and with convulsions the torch of life is extinguished.

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I think it very important to rigorously establish this condition of *physiological dyspepsia* in infants, which perhaps in the very young reaches absolutely the degree of *apepsia*, inasmuch as the tendency, not only of the public, but also among the generality of practitioners, is too favorable to feed infants with starchy matters. In fact, the preference given to starchy articles of food by mothers when they wish to add something else to the nutriment offered by the milk, or altogether to wean the infant, is notorious; and we find in many countries, at the present day as well as in the past, the common pap, or, what is still more dangerous, rice, arrowroot, or tapioca, which contain a larger quantity of starch than bread, united with the normal aliment of the sucking child; and, still worse, this is usually done more frequently, and with more persistence, when the infants do not thrive and when they are sick, *i. e.*, when the digestive power is probably more defective than in healthy infants.

It is very strange indeed that this tendency to feed infants with starchy matters should continue to subsist in our days, after so many writers on infant feeding (among whom several English, as West, Routh, and Eustace Smith, stand pre-eminent) have already hinted at its inconvenience, and long after an eminent physician had given a warning against it. Who is the medical man that has not read, indeed, Zimmerman's words on the danger that arises from the common use of pap in infancy? Zimmerman says, "I know very well that millions of infants are fed with pap, but I know also that it has killed many hundreds of thousands of them. And yet," he adds, "it would be more easy to shake the Alps from their basement than to make a *hare-brained woman* understand the danger that arises from the use of pap."

Yet, with deference to Zimmerman, it is fair to defend the same *hare-brained woman*, when, in giving the pap to her baby, she contrives by simple intuition to render that food less difficult to be digested. I allude to a custom which is very much extended among the countrywomen of Southern Europe. They mash well in their own mouth every bit of pap that is to be afforded to the baby, and thus offer it the aliment mixed with the very juices that contribute to its digestion juice which in the mouth of the infant is poured out in small quantity, and perhaps entirely deprived of any digestive action.

However contrary the custom may be to the rules of a refined politeness, we must regard it as a very efficacious manner of facilitating the digestion of starchy matters, and it is one that affords a rough idea of those recent trials of *artificial digestion* which will render great service to alimentation in many cases of dyspepsia, and particularly in infancy.—*The Practitioner.*

By far the most active of the causes of infant mortality are derangements of digestion and diseases consequent thereupon. There is no reason why young children should not prosper as do other young animals, provided they are kept under natural conditions. Pigs and calves are, with the utmost indifference, left to their mothers for food, while children have barely put in an appearance before, by officious meddlesomeness in feeding, they are made sick. Things which their digestive apparatus can not dispose of are given, indigestion is a consequence; then come colic, screaming, and more food to stop the child's mouth. Finally, cholera infantum sets up; the doctor is sent for; grey powders, astringents, anodynes, altertives and what-not are given, but all to no effect. In the last extreme, may be the "fresh meat treatment" is resorted to, and the child is resurrected—cause why, it has been given something which it can digest, its bowels cease to be irritated, and the "inflammation" subsides. The practical inference from all this is, that in treating the summer complaints of young children much more thought should be expended on the kind and quantity of food allowed than on the medicines prescribed. For very young children, *starch* in every shape and form should be prohibited. They have no saliva, and probably have very little pancreatic and intestinal juices, while their natural food is such as is to be digested in the stomach. When this (milk) can not be obtained in sufficient quantity, or when its quality is defective, some albuminoid should be substituted—*e. g.*, eggs, meat-juice, chicken-essence, or finely pulverized raw beef. It is worth remembering, in this connection, that by a high, dry heat (400°), as in baking or toasting, starch is converted into a soluble substance named dextrine, identical in its properties and capabilities with the result of the digestion of starch by saliva. In the preparation of food for infants, then arrowroot, starch or flour may be baked until it has acquired a light brown color, then boiled, as in making pap, and sweetened with a little white sugar. When treated in this way, its digestion by saliva is obviated and the objection to it as farinaceous food removed.

Pomatum for the prevention and Cure of Baldness.

℞ Suet, 65 parts;
Castor Oil, 25 parts;
Gallic Acid, 2 parts;
Essence of Vanilla, q. s.

—*London Practitioner.*

In speaking of the "*usefulness of drugs in the treatment of organic growths*," Dr. Alfred Meadows (in the *London Practitioner*) says:

Now I make bold to say that neither in my own practice, nor in that of others of which I have heard or seen, have I ever met with a clear, unmistakeable instance of the removal of one of these growths, nor even of their diminution by so much as one hair's-breadth, which diminution I could honestly and truly believe was due to the remedies that had been given with an amount of patient perseverance which certainly was worthy of success, if it had been in the power of drugs to achieve it.

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What right, I ask, have we, orthodox practitioners as we self-complacently call ourselves, to ridicule the follies of homœopathy while we countenance and gravely recommend such an absurd practice? Of very small use is all our advance in physiological and pathological knowledge, if it does not teach us how foolish it is to expect that the rubbing in of iodine to the skin of the belly can remove one single fibre, one solitary cell, or one drop of fluid from a uterine or ovarian tumor. If we consider the subject in its anatomical or physiological relations, to say nothing of pathology, there is no explanation which can be offered, either in reason or in fact, why such a practice should ever have been introduced; and, lamentable as much of our treatment of disease is, I would match this one sample against any which can be brought for ignorance and folly.

Some may perhaps urge that the use of external applications is to secure more complete speedy and saturation of the system with the ingredient employed, so that on the occurrence of what are called constitutional symptoms more perfect local action may be secured! If this be so, the better plan would be to use the application where the absorbents are most plentiful, as in the groins, for instance; but my argument still applies, for I dispute the value of the practice altogether. Nor does my objection to it rest solely upon its inutility; on the contrary, I believe that in the case of ovarian growths it is by no means powerless for evil. A woman who is taught that the application in question is ordered with a view to promote the absorption and removal of a large ovarian tumor, will naturally imagine that the more she rubs it the quicker it will disappear, and she will cheerfully submit to any torture for the accomplishment of such a result. Poor creature! she will soon have to be undeceived, and to learn that the remedies used with the best intentions have had little else to recommend them; meanwhile her zealous perseverance has very probably resulted in removing the last chance of her cure; for, partly perhaps from the strong friction employed, and partly from the irritant action of the remedy, from both of which she has suffered sorely, chronic subacute peritonitis has been induced, and adhesions between the abdominal wall and the cyst have resulted.

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I have written thus strongly upon the folly of these external applications, because I can confess to having been myself a great sinner in this respect. I have very diligently practised what I now denounce, and I can truly say that I have never seen any good result; I believe I have seen harm come of it, and I am certain that no rational justification can be given for its continuance. It is not, however, in the case of ovarian tumors alone that I would repudiate this treatment. Probably it has found still more persistent advocacy in cases of fibrous tumors of the uterus. Here also my objections to it are equally strong; and for the same reasons, except that there is less fear of exciting adhesive peritonitis. At first sight there might appear grounds for a plausible expectation that, in the case of tumors with fluid contents, iodine or mercurial inunctions would help to promote absorption of the liquid; but whatever the expectations formed, I am sure I may reckon upon the concurrence of my readers in the opinion that no such results are or have been ever obtained: while, in regard to the hard solid fibrous tumors which we meet with in the uterus, not only is there never any such gratifying fulfilment of our wishes or hopes, but the more the matter is thought over and considered the less reason will there be for even the smallest expectation. If we bear in mind the histological elements of which these tumors are composed, and the anatomical relations of the tumor itself to the part where the inunction is applied, we must at once recognize the absurdity of the treatment, and wonder how it could ever have been proposed, though that is far less difficult to understand than that in our day it should still be practised as diligently as if success had been a uniform result. Here again, too, I must plead guilty to the charge of having blindly followed this practise in scores of cases, but I may add also with the result which, if I had exercised my reason, I might and ought to have anticipated. I have seen this treatment perseveringly adopted for many years, but I cannot say that I ever traced the smallest benefit to it. I am certain that I have never seen a tumor appreciably reduced by it, but I have seen very many go on steadily increasing in what I may call their normal rate of growth.—*The Practitioner.*

Conception at Eleven Years.

Dr. Dills, of Carlisle Ky., (*The Clinic*, March 29th, 1873), was called to attend a colored girl in labor, aged eleven years and nine months, and found a vertex presentation, first position; the pelvis was large and roomy, labor progressed rapidly, and a living child weighing nine and a half pounds was the result. The girl had never menstruated.

[Lobstein and Cannes (*Medico-Chirurgical Review*, October, 1833) each relates a case in which menstruation commenced in, and continued regularly after the second ye r of age; in one of these cases the girl conceived in her eighth year. B. S. T.]—*The Medical Record.*

Hydrate of Chloral in Incontinence of Urine.

Dr. Girolamo Leonardi has found chloral a most valuable remedy in nocturnal incontinence of urine. The dose for children is from five to ten grains taken in water before going to bed. For adults the dose is proportionately larger. The treatment has been successful in all of his recorded cases. The remedy must be repeated for several successive nights.—*Lo Sperimentale*, April. 1873.

Chloral for Toothache.

Dr. Page, in the *British Medical Journal*, recommends chloral hydrate as a local application in cases of toothache. A few grains of the solid hydrate introduced into the cavity of the tooth upon the point of a quill speedily dissolves there; and in the course of a few minutes, during which a not unpleasant warm sensation is experienced, the pain is either deadened, or more often effectually allayed. A second or third abplication may be resorted to, if necessary.—*The Druggist's Circular and Chemical Gazette.*

Various anodynes will answer the same purpose. Among others, iodoform in one grain doses is a very efficient remedy for dental and facial neuralgia.—*Medical Cosmos.*

Vaccination and Re-vaccination.

Dr. Oscar Eyselein, of Augsburg, furnishes a most exhaustive article on this subject, appearing in the *Medicinische Jahrbucher* (Jahrgang, 1872, iii. Heft). He gives a complete history of the introduction of vaccination into each of the European states, with a careful analysis of the bills of mortality before and after its general adoption. While the extreme length of this article forbids our attempting any abridgement of it, there are several branches of this subject which possess special interest at the present time, and some of his views on these topics are, therefore, transferred to these columns.

The writer considers it as an established fact that a proper vaccination in infancy gives, in general, immunity against the smallpox with certainty until the fifteenth year, in rare instances for a life-time. From the age of fifteen, the susceptibility to the disease is, as a rule, renewed, sooner or later, according to the peculiarities of the individual. It is, therefore, important that when this age is attained, an attempt at re-vaccination should be made, and this attempt, if unsatisfactory, should be repeated from time to time until successful. A successful re vaccination is generally regarded as giving partial or complete immunity against the contagion of smallpox, yet we are by no means justified in assuming that even this immunity lasts for a life-time. Inasmuch, therefore, as it has not yet been determined by actual observation just how long a period of protection is afforded by re-vaccination, it is wise, in persons who have attained the age of fifteen, to repeat the attempt at re-vaccination every fifth year, more especially as it is found that after the thirtieth year, the frequency and fatality of the disease increases in direct proportion to the number of years that have elapsed since the previous vaccination. When an individual who has not been re-vaccinated for a number of years is attacked with the smallpox (and this applies, in exceptional cases, to those with whom considerable time has elapsed since their primary vaccination), in times when no epidemic is prevailing, the disease assumes a modified form (varioloid). But in times of general smallpox epidemics, the susceptibility to the effects of the virus is found to be increased, especially where a considrable period has elapsed since vaccination or re-vaccination, so that the disease appears with all its unmodified and malignant symptoms.

Inasmuch as experience has shown that the single occurrence of *variola vera* does not give absolute immunity against a second attack (a second attack is apt to be even more dangerous and oftentimes fatal), it should not be regarded as surprising, especially during the prevalence of a general epidemic, if this malady is, in exceptional cases, contracted by individuals who have been, within a longer or shorter time, vaccinated or re-vaccinated. In case of the latter, however, the liability to the disease is very much smaller, and the type milder, than in case of those who have already once been affected with the genuine smallpox.

Dr. Eyselein shows that as early as the year 1818, the idea began to gain ground that the humanized virus then employed was losing its efficacy, and recounts the efforts made to improve the quality of the virus. This was first attempted by transferring the humanized lymph to the cow, and then employing for vaccination the lymph derived from the animal (retro-vaccination). Lymph from this source was employed in Wurtemburg from the year 1818 to 1825, when attention began to be attracted to cases of cow-pox occurring spontaneously, and liberal premiums were offered to all owners of cattle affected with this disease who should bring forward their animals. The lymph derived from this source was found to be especially protective, and has, therefore, been employed since that time by that government. In Bavaria, animal virus was introduced in 1838, and means have been adopted to forward a fresh supply from the central bureau to the public vaccinators, at least once each year.

The frequent failure to obtain any result after inoculations with the animal virus is accounted for by the fact that we possess no means of distinguishing the active lymph contained in the vesicles, which are formed upon the cow, from the serum which continue to flow after the contents of the vesicles has been evacuated. Hence it happens that the vaccinator is often furnished with points or quills which have been charged with simple serum, and these, when employed for the purpose of vaccination, naturally produce a negative result. It has been urged as another objection to the use of animal virus, that the constitutional symptoms induced are often too severe. The obvious reply to this allegation is that if the virus derived from this source gives evidence of greater activity, we are thereby assured of a thorough and satisfactory inoculation, of which fact we are by no means certain when degenerate or long humanized lymph has been employed. These trivial objections, however, so far from affording any valid argument against the use of the animal virus, are really entitled to no weight, inasmuch as they are not at all applicable to humanized lymph, one or more removes from the cow. As to the transmission of other diseases by means of vaccination, an objection always to be found in the mouths of the anti-vaccination agitators, this, in the case of *scrofula* and *tuberculosis*, is of very questionable occurrence, while, as regards *syphilis*, it has been reported in a very limited number of cases. There can be no possibility of the inoculation of any other disease, provided the simple precaution is taken of never employing lymph that is tinged in the slightest degree with blood.

It is only in the most exceptional cases that the constitutional symptons induced by vaccination assume a severe or dangerous form, and it is doubtful if there is a case on record where death can be justly ascribed to the direct result of vaccination. In Wurtemburg, during a period of five years, there were recorded 208,322 vaccinations of children, and of these the only one resulting fatally was complicated with erysipelas and gangrene. Dr. Eyselein agrees with other recent writers in strongly condemning the use of lymph taken from re-vaccinations. According to Muller (*Berlin Klin. Woch.*, No. 28, 1871), lymph derived from this source is not identical with that obtained from primary vaccinations, but, on the contrary, is found to deteriorate with each remove, until it becomes absolutely worthless, thus leading to imperfect or spurious vaccinations. — *The Boston Medical and Surgical Journal.*

On Post-partum Dietetic Treatment.

Dr. Thomas Cairns, in an article published in the "Transactions of the Edinburgh Obstetrical Society," lays down three rules of diet, viz.:

1. "The diet should be nutritious in point of quality.
2. "It should be small in quantity and frequently repeated.
3. "It should be varied in kind and form."

He says of the usual low-diet system, "Such treatment, I humbly maintain, is utterly inconsistent with the principles of obstetrical pathology. I wish I had time to inform the younger members of the Society the real meaning of the term *labor*, because I am certain, if they knew what it actually expresses, they would at once perceive the necessity, on purely pathological grounds, of *feeding* and not *starving* their puerperal patients.... Consider the waste of tissue to which the woman is subjected during her confinement, and you must see that unless that waste be supplied by proper and fresh materials, the patient's strength must necessarily be very much reduced below its normal condition; and should any untoward event happen to her in these circumstances, the prognosis must essentially be infinitely more unfavorable than if her system had been duly sustained by generous diet. On these grounds I have always been in the custom of liberally administering to my puerperal patients the most nourishing food which their circumstances enable them to procure, such as soft-boiled eggs, beef-tea, soups, chops, steaks, tripe, etc., with a glass of wine daily in addition, or, if the patients prefer it, a glass of ale or porter; and this treatment, I humbly aver, is based on sound pathological principles....Let the food be administered in small quantities at a time, and at such intervals as shall have insured the complete digestion of the previous diet.... Common sense seems to suggest that, with the view of stimulating the appetite and imparting to the patient a positive relish for food, every advantage should be taken of the culinary art in dressing the same article in different forms, and when these have been exhausted, that one article should be substituted for another during the whole period of convalescence."—*Philadelphia Medical Times.*

Prognostic Value of Successful Vaccination in Cases of Small-pox.

Dr. M'Cann, Resident Medical Officer of the Stockwell Fever and Small-pox Hospital, has just issued the second annual report of this asylum, which is valuable as an addition to the evidence of the prophylactic value of successful vaccination. From last July, 201 cases of fever only have been admitted, against upwards of 4000 for the previous year. None of the patients had contracted fever of another class during their stay in hospital, and not one of the staff of nurses had been laid up with any febrile complaint. Dr. M'Cann states that on February 1 last, only thirteen patients remained under treatment, as against 128 in the previous year. He divides the patients received, according to the degrees of vaccination, into those with "good marks," those with "moderately good," and those with "bad"; and, by elaborate tables, points out the results to the patients of previous vaccination. It is shown that there is a general immunity from a fatal termination enjoyed by those having "good marks," and that the mortality increased or diminished almost in proportion to the number of such marks. The deaths among the patients under 15 with "good marks" was 2·6 per cent.; of those above that age to 30 years 3 per cent., and of twelve between 30 and 60 one died, being a mortality of 8·3 per cent. The "moderately" marked died at the rate of 9·3 and 18·4 per cent., the bad or doubtful reached 30·7 per cent, and the deaths among the unvaccinated were 46 per cent. The severe type of the disease which prevailed throughout London in 1870 and 1871 had not abated during the year, as the death-rate was exactly the same on the whole number admitted. He refers to the prejudice which exists among some persons as to vaccination, and, as an example of the result of this prejudice, he mentions that within the last two months a family consisting of the mother and three children had been admitted. The mother, having been vaccinated, was saved, but the children, who, owing to the father's prejudice, were not vaccinated, died. London is now free from small-pox, and it is only by careful vaccination and re-vaccination that this can be lasting.—*Medical Times and Gazette.*

On a Rare Cause of Mistake in Testing Urine for Albumen, by the Ordinary Processes. By C. E. BROWN-SEQUARD, M. D.

For well-known reasons it is important that the urine tested by heat be, at least, slightly acid; but, as I will show by what occurred to me in three cases, we might conclude that there is no albumen in naturally acid urine that does, however, contain a notable quantity of it. If we first test by heat urine containing albumen (after having ascertained that it is naturally acid), we may not find the least precipitate; and if we add nitric acid to it after it has boiled and become somewhat cold, we may yet not find a precipitation of albumen. But if we boil a second time that now acidified urine, the solidification of albumen quickly takes place, and the precipitate soon appears. This is certainly what we see in almost all cases; but I have found that it is not always so. In three instances, in which the microscope showed tubular casts in the urina, the albumen contained by this fluid was so modified by heat that if the urine (which was naturally acid) was boiled first, the addition of nitric acid in small or in large quantity at a low temperature, or at the degree of boiling, produced no solidification of that protein substance. Had I been contented with that mode of testing urine I would have concluded that there was no albumen in those three specimens. But when I added either a small or a large quantity of nitric acid to the fresh (unboiled) urine, and then boiled it, the ordinary coagulation took place, and after some time of rest the ordinary precipitate appeared. It is evident, therefore, that there is, sometimes, in the urine a kind of albumen which loses its coagulability by boiling.—*Archives of Scientific and Practical Medicine.*

Picric Acid as Test for Albumen in Clinical Medicine. By MR. GALIPPE.

[Translated with a few abbreviations from the Gazette Medicale de Paris, 1873, p. 112.]

I have often asked myself how it was that the most sensitive, and also the easiest test for albumen, picric acid, is not made use of. The various means employed to detect the presence of that substance require so much care that inexperienced persons are exposed to great mistakes. The coagulating influence of heat on albumen is extremely precious, but one must not forget to render acid the fluid to be tested. And, if too much acid is added, albumen may lose its coagulability by heat. Nitric acid is lavishly used every day, but it may also lead to erroneous conclusions. If used cold it decomposes the urates and uric acid is precipitated, as it is only slightly soluble in an acid fluid, and it dissolves again only with the help of heat. Every one knows, besides, that at a high temperature nitric acid, with the greatest facility, converts albumen into xantho-proteic acid, which is easily dissolved if its quantity is small, or if the quantity of nitric acid is considerable.

With Boedeker's test, the cyanoferride of potassium, there are also great chances of mistake.

The use of the polarimeter does not seem to me to at all practical in a hospital ward, unless a person especially familiar with the use of this instrument be charged with the duty of searching for albumen. Besides, small quantities could be recognized only by very few people.

For the several years that I have used it picric acid has appeared to me more advantageous than the other tests commonly used. It does not require either heat or acidification, and its color admirably serves to detect even the most minute traces of albumen.

I generally employ an aqueous solution saturated at the ordinary temperature of the air. This fluid, which contains but little picric acid, is amply sufficient to detect albumen, however small may be its amount in the fluid tested. In normal urine this solution never causes precipitation. An excess of the reagent never dissolves the precipitate formed. The *modus operandi* is very simple. A few cubic centimetres of the picric solution is put in a test tube, and then one or several drops of the fluid to be tested are allowed to fall in the solution. If there is albumen it traces a characteristic white line through the testing solution.

This process deserves to be more extensively used. It suppresses many cases of mistake, which is a most important point. *Archives of Scientific and Practical Medicine.*

Zinc Alum in the Treatment of Chronic Catarrh of the Cervix Uteri.

[Under the care of Dr. Matthews Duncan.]

It is impossible to read the notes of the subjoined case without entertaining the suspicion that the stem pessary had somewhat to do with the production of the catarrh of the cervix. It would appear from the evidence of those who are not specially interested in their use, that pessaries are better avoided in the majority of cases. There are, no doubt, some instances in which they afford relief, and in which perhaps no other treatment is possible; but a long hospital experience is not necessary to convince one that their introduction is often the cause of much mental, moral, and even domestic suffering. Some of the more eminent continental gynæcologists teach, that in flexion of the uterus pessaries not only do no good, but are sometimes positively dangerous. It must, however, in justice be said that the so-called ring pessaries are by no means so hurtful as the intra-uterine ones; that they may, in fact, be worn for weeks or months without producing much discomfort.

J. G——, aged forty, married, admitted on November 15th, 1872, has eight children, the last born four years ago. She complains of pain in the lower part of the back and along the flanks.

The patient enjoyed good health until about two years ago, when she slipped and fell on the ice, and to this fall she attributes the pain in the back and down the flanks, from which she has since then suffered. A physician who saw her twelve months ago said the womb was displaced, and introduced an instrument into the vagina. The instrument, which she brought with her, and which is an intra-uterine stem pessary made of caoutchouc, did not relieve her. The monthly periods are regular, but the appetite is not very good; bowels costive; urine natural; pulse 92, temperature 99°.

On a vaginal examination being made no displacement of the uterus is to be detected, but the finger, on being withdrawn, is seen to be covered with a muco-purulent discharge. On introducing the speculum the os uteri is observed to be patulous, and a copious muco-purulent discharge flows from it. The mucous membrane of the cervix in the neighborhood of the os is redder than elsewhere, being evidently divested of its epithelium.

In this case there were no means of determining whether the catarrh of the cervix uteri—the only disease discoverable—was produced by the accident on the ice or by the intra-uterine pessary. For its treatment, a stick of zinc alum, of nearly an inch and a half in length, was introduced into the cavity of the cervix, and afterwards a plug of lint was placed in the upper part of the vagina to keep the zinc-alum in its place, and absorb it as it ran dissolved from the os uteri. Three hours after its introduction the lint plug was removed, and the vagina and the cervix washed with a copious stream of tepid water. The thin superficial epithelial slough caused by a caustic application was observed two days afterwards. This soon separated, and on examination a week after the caustic application, the interior of the cervix could be seen to be redder than natural, and a thin watery fluid containing pus to trickle from it. This discharge soon ceased, and subsequent examinations revealed a healthy condition, the os uteri having contracted, the discharge ceased, and the epithelial abrasion around the os having disappeared. On the 25th of December she was dismissed cured. The pain in the back was gone, but the patient still complains of some pain in the left flank, for which no cause can be discovered.—*The London Lancet.*

Diptheritic Paralysis.

No satisfactory explanation has ever been offered of the paralysis which occasionally follows an attack of diptheria. According to some authorities it is due to blood poisoning; but the fact that it not unfrequently supervenes in mild cases, and that it does not come on for two or three weeks after the disappearance of the throat symptoms, militates somewhat against this view. On the other hand, the usually complete subsidence of the paralysis in the course of time would appear to argue against the supposition of grave structural change as a cause. In many cases, if not in all, the amendment may be observed to preserve the same order as did the extension of the paralysis, commencing at the soft palate and finally reaching the lower extremities.—*The London Lancet.*

Phosphatic Deposits in Urine.

The death of the late Emperor Napoleon having attracted much attention to the subject of phasphatic calculus, it may not be altogether uninteresting to dwell upon a few points connected with this affection. Their consideration will not be without some practical advantage if it stimulates members of the medical profession to undertake further inquiries into the solvent treatment of urinary concretions, and practical surgeons into devising some method for giving it a wider application than it has at present.

To begin with, Dr. Prout's phosphatic diathesis is a misnomer, as Dr. Bence Jones long ago pointed out; for there is no special constitutional condition characterized by the deposition of phosphates. These salts, it is well known, exist in the urine as phosphates of alkalies and alkaline earths, and the former—of potash and soda—form two-thirds or more of the total amount, and are so soluble as not to form deposits; the remainder are composed of phosphates of lime and magnesia, which are precipitated in alkaline or feebly acid urine, the nature of the deposit varying as the alkalinity of that fluid is attributable to the presence of fixed or volatile alkali—ammonia. The amorphous phosphate of lime—deposited when the alkalinity of the urine is due to a fixed alkali, and often occurring, as Dr. Wm. Roberts pointed out, three or four hours after a meal, or where alkalies are administered medicinally,—and the crystallized form of phosphate of lime, to which Dr. Hassall called attention in 1860, need not now detain us, for we are chiefly concerned with that found in calculous diseases—the mixed, or secondary phosphates, as they are termed. This concretion is composed of the triple phosphate with that of the bone-earth phosphate. It commonly encrusts other species of calculi, some extraneous body, or some inequalities or other growths of the urinary organs. These calculi go on increasing for an indefinite period, and may attain a very large size; they are usually soft, friable, laminated, and studded with crystals of the triple phosphate on the surface; they break down under the lithotrite, and the "general irritation of the system," says Dr. W. Roberts, "and the frequent co-existence of grave anatomical lesions in the urinary passages or the kidneys, render them unfavorable subjects for operation." This author undertook a series of experiments and observations, the results of which he embodied in a paper read before the Medico-Chirurgical Society in 1865, on the solvent treatment of renal, and, under some circumstances, of vesical calculi; and he has opened out, as it appears to us, a line of investigation which deserves to be more perseveringly prosecuted. His experiments were conducted in reference to the solution of uric acid and other forms of calculi, but we are now concerned with the phosphatic. Whatever be the necleus of a stone, if the urine becomes purulent and ammoniacal we may be sure that phosphatic deposit is taking place, and we may conjecture its depth by the intensity of the alkaline reaction, the quantity of pus discharged, and the length of time during which these symptoms have persisted. Once the alkaline reaction of the urine is established in a case of stone, it rarely afterwards gives place to an acid reaction. We would carefully guard against being considered as implying that any solvent treatment would have been applicable in the case of the late Emperor. All we desire to inculcate is, that this method of treatment merits more attention than it has received. The late Sir Benjamin Brodie successfully employed a weak solution of nitric acid in the treatment of phosphatic calculus; and Dr. W. Roberts states that his colleague, Mr. Southam, has also tried the same method, and with the best results, in a case where fresh phosphatic concretions formed in the bladder as fast as the old ones were broken up by the lithotrite.

Traumatic Rupture of the Membranum Tympani, from a Medico-Legal point of view.

In one of the last numbers of the *Wiener Med. Wochensch*, there is an interesting article on the above by the celebrated Vienna aurist, Dr. Politzer. He describes the origin of the lesion (generally a blow with the open hand on the ear); the character of the lesion—an oval opening, with bloody lips, seated rather below and behind, at equal distance from the hammer and cartilaginous ring, the disorders of hearing—which are more intense when the blow has produced contusion of the labyrinth, and especially when the shock has been transmitted to the terminal nerves. When air is blown into the ear, it produces a dull noise, whereas the sound is acute and whistling in cases of pathological perforation. Cicatrisation generally takes place rapidly (in a few weeks), after which the lesion cannot be made out (even when there has been suppuration, which is rare); so that for a medico-legal inquiry the surgeon must be called in soon after the accident. *The London Lancet.*

Abortifacients in America.

Dr. Van de Warker, of Syracuse, U. S. A., continues his crusade against a system of criminal abortion which appears to have taken deep root in the model Republic. In a paper read some months ago before the New York Medico-Legal Society on the "Criminal Use of Proprietary or Advertised Nostrums," Dr. Van de Warker stated that the sale of fœticidal drugs is enormously on the increase, the principal agents employed being aloes, hellebore, savin, ergot, iron, and extracts and oils of tansy and rue, a ready medium for their sale being found in the advertisement sheets of the daily press. The author of the paper had collected twenty-one cases of death from criminal abortion; of this number, a great majority of the deaths had been caused by abortion from medication, which he considers is much more fatal in its results than instrumental interference. He had experimented upon himself with eleven varieties of the nostrums, the experiments extending over a period of six months, and occasionally making himself very ill. In concluding the paper, the author offered a draft of a legal enactment for restricing the sale of these nostrums, which, if rigidly enforced, he believes would be greatly beneficial to public morality.—*The London Lancet.*

Diplopia following the use of Chloral.

A case of this character, following the administration of this remedy, is reported by William R. Mandeville, M. D., A. A. Sug., Post Hospital, U. S. A, Aberdeen, Miss., in the October number of the *American Journal Medical Sciences.* A male, suffering from a curious dens sapientiæ, took ninety grains, in three doses of thirty grains each, within two grains. The next day the patient complained of seeing everything double, and of specks continually floating before his eye—muscæ volitantes. This condition of his eye lasted three days.—*The Medical Record.*

A Shocking Scene at the Chelmsford Assizes.

A scene was enacted in the Assize Court at Chelmsford on Monday last, which was probably unique in a court of justice; and certainly those who witnessed it are never likely to forget it. A young and, as the newspapers express it, "interesting-looking" married woman was arraigned for the wilful murder of her husband's first wife by poison The deceased had died on October 10th last, and the prisoner, who was married only in

December, was far advanced in pregnancy. The woman was in the dock, with a couple of brief intervals, for the space of seven hours, and bravely she bore the trying ordeal, conducting herself with as much ease and self-possession as any lady whilst dispensing the hospitalities of her own drawing-room. In the course of the afternoon, just after Sergeant Parry had cross-examined Dr. Stevenson relative to the presence of arsenic in the viscera of the deceased, and the Hon. G. Denman was commencing his re-examination, the prisoner, who had risen from her seat during the delivery of Dr. Stevenson's evidence, was led out of court, and the rumor spread that her confinement was imminent. Her speedy reappearance, accompanied with Drs. Gilson, Finch, and Carter, reassured the Court, and it was intimated to the judge that the trial had better proceed. It was evident, however, to skilled eyes that the poor creature suffered from either true or spurious labor pains. A couch was brought, and the examination of the expert was resumed. For the next hour or two the scene was ghastly in the extreme. Labor pains recurred at one time every three or five minutes, the prisoner alternately reclining, sitting, and standing; the evidence meantime proceeding as if nothing had happened. At one time two medical men were with her in the dock at the same time, and it was evident that their cheery counsel revived the poor creature. At 5.30 p. m., the evidence for the prosecution being finished, and no evidence being forthcoming for the defence, the question arose what was to be done. Baron Martin offered to go on with the case till midnight if necessary, but it was represented by counsel that the medical men were of opinion that the poor creature might be the better for a night's rest: so the trial was adjourned until next morning, and the excited spectators, among whom were a large number of unmarried females, dispersed. In the course of the evening the prisoner was delivered of a child; next morning the jury was discharged, and the trial postponed for three months. We suppose such a harrowing scene could scarcely have been avoided. What the consequences would have been had the trial proceeded, and either a verdict or guilty or of not guilty been pronounced whilst the woman was in the dire anguish of travail, we cannot say. Happily such another tragedy as this can rarely be enacted in all its details. Meanwhile the miserable woman is condemned to a further three months of suspense.—*Medical Times & Gazette.*

The Causation of Enteric Fever.

There has been long a well-grounded belief, amounting to tolerable certainty, that the poison of enteric fever is contained in the excreta from the intestinal canal of the fevered patient, and that the fever is commonly conveyed by an admixture of such excreta with drinking-water. It is, however, scarcely an unsettled question whether the gastro-intestinal tube is the only channel by which the poison of enteric fever may enter the system. On the whole the balance of evidence is strongly in support of its occasional introduction by the respiratory organs. But the question whether enteric fever originates from mere fæcal contamination, apart from the presence or introduction of its specific virus—of whether the fouling of water and air with excrementitious matters, from a population amongst whom enteric fever does not exist, may be sufficient to engender an outbreak—is, both from a sanitary and a medical point of view, of no less importance.

The theory which traced the cause of enteric fever to putrescible animal or vegetable matter, especially to intestinal excreta, but denied any necessity for the introduction or presence of a specific germ or ferment—which, in other words, allowed that typhoid might originate with filthy air and water *de novo*—obtained its expression in the terms filth-fever and pythogenic fever. The opposite theory is that enteric fever depends on a special organic poison, as much a poison *sui generis* as that of small-pox or syphilis, and that without the introduction of that poison the fever does not arise, although water, air and surroundings may be all contaminated with organic impurities, and may offer the most favorable conditions for its reception and spread.—*Medical Times and Gazette.*

Ethereal Solution of Quinia. By CHARLES RICE.

An ethereal solution of quinia has for several years been quite frequently prescribed by prominent physicians in this city and elsewhere, and I have been often requested, especially by physicians in the country, to furnish them a formula for its preparation. Although the different steps of the preparation are simple enough, yet I have repeatedly been informed of failures in the hands of others. In order to furnish to those who are not practical pharmaceutists or chemists, and also to those who have met with ill success, a formula for its preparation, I shall give below the full detail, which will enable any one to prepare it for himself.

The object of the solution is to administer the alkaloid subcutaneously, in which case a much smaller dose is required, and a more speedy action is obtained than when administered internally. The idea of the subcutaneous use of quinia naturally suggested itself to practitioners from the previous similar administration of other alkaloids, especially morphiæ sulphas; but the neutral sulphate of quinia not being soluble to any useful extent in water, and the use of an acid solution being accompanied by pain and often severe inflammation, it was necessary to employ the pure alkaloid; and of all the different solvents, ether seems to have found the most favor.

By the way, I would remark that the practice of some apothecaries, of using dilute sulphuric acid in their solution of morphiæ sulphas, especially Magendie's, is highly reprehensible and denounced by physicians, on account of the pain and inflammation following its hypodermic use, water being all that is necessary.

Most authorities state that 1 part of quinia requires 60 parts of ether for its solution. This statement is quite correct, as far as the solution of the *dry* alkaloid is concerned, and it is by no means easy to prepare a solution even of that strength. But we may readily dissolve the quinia in ether, either at the moment of its precipitation from one of its salts, or at all events while yet in a moist state. The ethereal solution thus obtained may be concentrated to such a strength that 2 minims of it will contain 1 grain (and even more) of quinia, although in this state the solution is too thick for use, and too liable to solidify. Hence quinia (recently precipitated, and yet moist) may be said to be soluble in ether in all proportions, as has been stated already by Bussy and Guibourt (*Journal de Pharmacie et Chimie*, vol. 22, 1852, pp. 413,414).

The strength of the ethereal solution, as employed by Dr. B. W. McReady and other practitioners, is such that 5 minims contain 1 grain of quinia.

Preparation.—Take 364 grains of sulphate of quinia, which has been (previously to weighing) deprived of its water by drying it at 212 F., mix it with 1 pint of water, and add to it just sufficient dilute sulphuric acid to dissolve it. Filter if necessary, and wash the filter carefully. Introduce the solution into a 4-pint bottle and add sufficient water to make it measure 32 oz. The next step is to precipitate the quinia, and in order to avoid too great an excess of aqua ammoniæ, it is best to make a preliminary trial of the dilute sulphuric acid and aq. ammoniæ to be employed in the process. Introduce into a graduate 1 fl. oz. of the dilute acid, add some strips of litmus paper, and, while stiring, drop in very gradually from another graduate (or burette) aqua ammoniæ, until the litmus paper turn blue. The amount of aq. ammoniæ used is the quantity necessary to saturate 1 fl. oz. of the acid. Now pour upon the solution in the 4-pint bottle a little more than *double* the amount of aqua ammoniæ, corresponding to the amount of dil. sulphuric acid used, in order to precipitate the quinia; for it is not only necessary to neutralize the amount of acid added, but also the other equivalent already contained in the original sulphate of quinia. Immerse the bottle in ice-cold water to absord the heat generated during precipitation. Have a sound and tightly-fitting cork ready, through which are passed two narrow glass-tubes, one of them nearly reaching to the bottom of the 4-pint bottle, the other just penetrating the cork, and both cut off at an even height on the upper side. When the bottle has been sufficiently cooled, pour into it 55 fl. oz. of stronger ether and shake; the quinia will be dissolved, and the contents of the bottle will arrange themselves in two transparent layers—the lower one, an aqueous solution of sulphate of ammonia (holding a little ether, and also a trace of quinia in solution), and the upper one, an ethereal solution of quinia. Introduce the cork into the mouth of the bottle, keeping the finger on the orifices of the glass tubes, and invert the bottle. Hold it for a short time in a somewhat inclined position, to allow the watery solution adhering to the sides and bottom to drain down into the lower layer; then remove the finger and allow the lower layer to flow off into a vessel placed below. As soon as the line of demarcation approaches the cork, allow the liquid to pass only very gradually, and as soon as all the aqueous solution has run off, receive the ethereal solution in a 16-oz. graduate. Rinse the bottle with ½ fl. oz. of ether and add to it the former. Allow the ethereal solution to evaporate in a warm place (110-120° F.) until reduced to 2½ fl. oz. Remove it, cover it well to prevent further evaporation, and cool it to the temperature of 60° F. Then measure off into a weight graduated tube (or minin graduate) 5 minims and evaporate to dryness; weigh this, and from the weight calculate the amount of quinia contained in the whole solution; then add sufficient ether to make it contain one grain in every five minims.

The original amount of sulphate of quinia (364 grs.) employed, contains 40 grs. of sulphuric acid, and 324 grs. of quinia; now if all the latter were to remain in solution, we should obtain (at the rate of 1 grain in 5 minims) 1,620 minims, or 3 oz. 180 min.; but during the evaporation a portion of the quinia has attached itself to the sides of the vessel; and this should not be scraped into the solution, since it will not only fail to redissolve, but will generally produce a further separation of quinia.

It will sometimes occur, that our pouring the ether upon the precipitated quinia in the bottle, the latter absolutely (or nearly so) refuses to dissolve. This is owing to the presence of undecomposed solution of bi-sulphate of quinia, which seems to prevent the solvent action of ether. By adding a little more ammonia and shaking, the solution will at once take place. But too much ammonia must be avoided, since this gives a tendency to the ethereal solution to deposit the quinia in a short time; at least such is my experience.

The quinia adhering to the sides of the evaporating vessel may be dissolved off by the aid of a little dil. sulphuric acid, and kept in solution for future use; its amount may be determined by drying and re-weighing it after its removal.

The ethereal solution, prepared according to the above directions, must be kept in well-stoppered bottles, and should not be long exposed to light. I have kept some samples unaltered for over one year.—*American Journal of Pharmacy.*

Phosphorus Pills.

Dr. Radcliffe suggests (*Pharmaceutical Journal*) the following formula:—Take of phosphorus, 6 grs.; suet, 600 grs.; melt the suet in a stop bottle, capable of holding twice the quantity indicated; put in the phosphorus, and when liquid, agitate the mixture until it becomes solid; roll into 3-grain pills, and cover with gelatine. Each pill will contain one thirty-third part of a grain of phosphorus.

To Remove Nitric Acid Stains from the Hands.

Wet the skin with sulphate of ammonia, to which has been added some potash lye. This changes the dead skin into a soapy mass, which can easily be removed with sand or fine pumice-stone.—*The Druggists' Circular and Chemical Gazette.*

How to Clean Bones.

Soda ash	℔.	1
Lime (burned)		½
Hot water	qrts.	3

Mix, and soak the bones for 24 hours in the liquid; wash them thoroughly and bleach them. — *The Druggists' Circular and Chemical Gazette.*

Good Place for Invalids.

Dr. Pratt, of Chico, Cal., says, in the *Boston Med. and Surgical Journal*, that in crossing our continent from ocean to ocean, on the various routes, I found that on the eastern side of the Sierra Nevada mountains, in the northern counties of California, the climate possesses the nearest equilibrium of temperature, both in winter and summer, with the least atmospheric moisture of any portion of the United States. Throughout this extensive and beautiful belt of country there are mineral waters of every variety and temperature, while the atmosphere is ever charged with the odor of the pine and balsam of fir. The scenery is grand, varied, and extensive beyond description. Wild game and mountain trout are exhaustless.

For the last fifteen years, when able, I have practiced in the upper Sacrmento Valley; but when overdone and exhausted by the debilitating climate, a visit to that favorite retreat has never failed to immediately revive and invigorate both mind and body. I have also, with unvarying success, sent my patients, when suffering from general debility, from whatever cause, in the same direction—varying the altitude according to the case.

With the evidence thus obtained, I feel justified in believing this the best natural location for convalescents, invalids, and consumptives, on our continent, if not the best in the civilized world; and when its advantages become generally known by the Profession, enterprise will not be slow in developing, and art in improving, the facilities for its enjoyment by valetudinarians.

If any professional brother, or his friend, to whom life has become a burden, wishes to test the virtue of such a climate, and will meet me at my rendezvous next summer, at the Big Meadows, in Plumas county, I will take pleasure in gratuitously directing his efforts in so laudable an undertaking.

The locality referred to is also a delightful field for the able-bodied who seek recreation and sport, as well as for the invalid.

Treatment of Diabetes Mellitus.

Professors Cantani and Primavera, of Naples, report the most extraordinary success in their treatment of this obstinate disease. Their statements are in brief as follows:—

1. Their patients have all, with rare exceptions, recovered.
2. Stout persons have lost but little weight during the treatment, while spare ones have sometimes gained as much as twenty-five pounds.
3. Though the urine has become rich in urea and uric acid, the patients have never shown symptoms of gout or urinary calculi.
4. The treatment was also successful in arresting some instances of albuminuria that accompanied the disease.
5. The cure consists in an exclusive meat diet, and by this term, fish is also included; further, at each meal is to be taken lactic acid ℈ij--iv in water ℥ vj. As a substitute for wine at dinner, alcohol ℥ ss. with water ℥ vj is given:

Alcohol and lactic acid are designed to replace the saccharine and starchy elements of the food. To obtain a permanent cure it is necessary to persist in the treatment for several months after sugar has ceased in the urine. Then the patient may gradually return to a mixed diet.—*Allgemein. Med. Central. Zeitung.*

Liquid Glue.

An excellent liquid glue can be made by dissolving glue in nitric ether. This ether only takes up a certain quantity of glue, so that there is no danger of the solution being too concentrated. The glue obtained in this way can be made to have the consistency of molasses, and its tenacity is said to be twice that dissolved in hot water. A few pieces of india-rubber of the size of a bullet put into the glue and well shaken will dissolve in a few days, and add to the adhesiveness of the preparation, as well as protect it from the action of moisture.—*The Druggists' Circular and Chemical Gazette.*

Civil Malpractice.

This question has been an opprobrium to physicians. Before the courts of law doctors generally cut but a poor figure, whether they appear there as defendants for damages in actions for malpractice or as witnesses when a third party is the contestant. The truth is, the medical profession is too much made up as a whole of odds-and-ends of all sorts of doctors—some well educated, some half-educated, and others with no education whatever, but who consider themselves simple products of nature, and born to the work of healing. Where there is such a "heterogeneous conglomeration of intellectual qualifications" it must be expected the community will often underestimate some and overestimate others; and as a consequence, when there is a failure to cure or when a broken leg is not made as "good as new," although the highest degree of skill was exercised, there may be murmurs and charges of incompetency, with a refusal to pay a well-earned fee; or, not only the insinuation of dereliction can be heard as it permeates the neighborhood, but even a suit may be instituted to punish where there ought to be a generous reward. The courts resound now with the cry of malpractice, and, unfortunately, medical men are to be found willing to lend their influence and professional character to make the accusation good. The opinions of blundering blockheads are liable to be taken by even well meaning juries, as good enough for the occasion.—*The Druggists' Circular and Chemical Gazette.*

Means of Preventing Pitting in Smallpox.

Dr. Revillod, of Geneva, has studied the various means hitherto applied for preventing the developement of variolic pustules in the face. He discards collodion, because it cracks the skin and causes too much pain; the sublimate, because it sometimes produces eschars; tincture of iodine, because it does not prevent pustulation. He recommends glycerine, which, through its exosmotic action, diminishes the intensity of the eruption, whereas he cautions as to the use of washes with water or any other liquid which increases the eruption His favorite formula is: soap, ten parts; glycerine, four parts; triturate, and add mercurial ointment, twenty parts. This ointdoes not prevent swelling of the face, causes no pain, and prevents pustulation, It must be applied before the pustules have been transformed into vesicles.—*London Lancet.*

Coffee and Quina.

M. Briquet considers the common practice of administering quinia in coffee open to much objection. He alleges that the tannin in the coffee coalesces with the quinia, forming a tasteless and insoluble and almost inert salt—the tannate of quinia, from which the stomach has as much difficulty in extracting quinia as from powdered bark. It is, he thinks, one of the worst preparations of quinia.—*Brit. Med. Journal.*

Freckles.

For the benefit of young persons afflicted with freckles, we would inform them that powdered nitre, moistened with water, applied to the face night and morning, will soon remove all traces of them.—*Druggist's Circular and Chemical Gazette.*

Wedgwood is so named after Josiah Wedgwood, an English manufacturer of pottery, who first made that kind of ware. He lived in the last century. Wedgwood is produced from a particular kind of clay that is found at Henley, in England.—*The Druggist's Circular and Chemical Gazette.*

To Destroy Bed Bugs.

There are several methods by which bed bugs may be "positively destroyed." Benzine will do it; or equal parts of kerosene and turpentine forced into the cracks and crevices where the vermin reside. But you will find this plan as effectual as any, and perhaps less trouble: Clean the room well, open the joints of the bedstead and expose the furniture; then burn from four to six ounces of sulphur in the room, according to its size, taking care to close windows, doors, and all crevices. Leave the room till next day, then ventilate and clean again.—*The Druggists' Circular and Chemical Gazette.*

Advice to Druggists.

To what extent may a druggist dilute the strength of a prescription, on account of the insolubility of some one or more ingredients? To no extent at all. Follow the directions, strictly, in all cases, unless there is absolutely danger to the patient. Let the physician be answerable for his own work. If he does not know his business, it is not the duty of the druggist to teach him. If the druggist begins to undertake to teach physicians how to prescribe, they will soon have nothing else to do. The ignorance of the doctors in that direction seems to be unlimited.—*The Druggists' Circular and Chemical Gazette.*

No solution of Citrate of Magnesia will "keep well." It should be prepared when wanted for use. The powder will keep, but it is not easy to make a clear solution from it.—*The Druggists' Circular and Chemical Gazette.*

Treatment of Hooping Cough.

Dr. Berry, of Lancaster, in a letter addressed to the *Medical Times and Gazette*, observes that in regard to all or most of the remedies employed in the treatment of hooping-cough, the words of Dr. Bateman can be endorsed by practitioners who have had only a moderate experience of this disease. He says: "Perhaps there is no disease for which so many specifies and infallible nostrums are promulgated with confidence, or so few actual remedies known."

Dr. Berry does not pretend to introduce any new remedy for this distressing affection, but desires to speak of one which is simple, safe, and, he thinks, apparently valuable in the treatment of uncomplicated hooping-cough. He has found dilute nitric acid, in doses of from five to fifteen minims, according to age, with simple syrup, given every three or four hours, to alleviate the cough and spasm, and apparently cut short the disease. During a recent epidemic he prescribed this frequently, and has every reason to be satisfied with it. Whether the result has been *propter hoc* or not, he is not prepared to answer, but the cures have certainly been *post hoc*, in the cases in which he employed it; neither does he offer any suggestion as to the *modus operandi* of the remedy, but he believes its action to be that of a tonic, sedative, and antiseptic. He thinks, however, its refrigerating properties should not be lost sight of.

In all the cases Dr. Berry has treated with dilute nitric acid, he has paid attention to the state of the digestive organs, and, in such cases as have required it, he has given an aperient combined with an alterative. There is one advantage in the use of a remedy like this for children: unlike hydrocyanic acid, it is safe, and no unpleasant results need be dreaded from its administration. At the same time it is inexpensive: a consideration in cases in which a large quantity of medicine is likely to be required.—*Medical Times and Gazette*, Feb. 8, 1873.

On the Action of Mercury.

Dr. Farquharson states that he is reminded, by the unfortunate idiosyncrasy of a case recorded by Dr. Cheadle, of one in which severe symptoms were produced by a very small dose of mercury. A relative of his own spent many years in the West Indies, and was treated there for fever, according to the fashion of the day, with almost incredible quantities of calomel. Ever since that period she has been so susceptible to the action of that drug as to find it necessary, when consulting any fresh medical man, to lay her peculiarities in this respect fully before him. On arriving in London, she was seized with what is popularly called a bilious attack; and unluckily forgetting to make her usual stipulation, the doctor in attendance naturally enough prescribed a couple of pills, containing three grains of calomel and five of colocynth. Furious salivation almost immediately set in, with marked gastric disturbance and general debility; and several months elapsed before either her gums or strength were restored to their normal condition. This lady's daughter exhibits an almost equal intolerance to mercury in any form; and Dr. Farquharson is thus led to infer that prolonged residence in a tropical climate may serve to encourage, if not actually produce, such a type of constitution. It is also known that debility has a decided tendency to cause excessive action of this therapeutic agent. Dr. Farquharson relates a typical instance of this which occurred in the Coldstream Guards' hospital. Some years ago, two privates having been salivated, one by three, and the other by two calomel vapor baths, each containing twenty grains, this naturally excited some surprise, as the men were robust, and as such an accident rarely happened; but all became clear when it was found that they had inadvertently been kept on very low diet during the four or five days following their admission. The rectification of this error speedily put them all right; but the circumstance impresses forcibly the necessity of combining tonic diet and regimen with anything like a mercurial course. If the patients feed well, have a moderate allowance of stimulant given them, with iron or quinine, they will fatten and do well; whereas the semi-starvation enjoined by the dogmas of former days proved its fallacy by the results. With syphilis as the whip, and mercury as the spur, patients went down hill with sad rapidity, and not a little of this must have been due to the debilitating influence of low diet.

Mr. Diday tells us ("L'Histoire Naturelle de la Syphilis") to beware of the action of mercury in persons with light or reddish hair.—*British Medical Journal*, Feb. 8, 1873.

Borax and the Nitrate of Potash in Loss of Voice.

Dr. Corson, of Orange, N. J., states that some years since, while in charge of the class of "diseases of the chest and throat" in connection with the New York Dispensary, he was led, at the suggestion of a non-professional friend engaged in teaching elocution, to test the efficacy of borax and nitrate of potash in many cases of sudden hoarseness from cold, and the following are the conclusions at which he arrived:—

1. That in sudden hoarseness or loss of voice in public speakers or singers, from "colds," relief for an hour or so, as by magic, may be often obtained by slowly dissolving and partially swallowing a lump of borax the size of a garden-pea, or about three or four grains, held in the mouth for ten minutes, before speaking or singing. This produces a profuse secretion of saliva, or "watering" of the mouth and throat. It probably restores the voice or *tone* to the dried vocal cords, just as "wetting" brings back the missing notes to a flute when it is too dry.

2. Such "colds" may be frequently "broken up" at the very commencement; and this restorative action of the borax to the voice may be materially aided by promptly taking, the evening previous to a public effort, dissolved in a glass of sweetened water, a piece of the nitrate of potass or "saltpetre," a little larger than a garden-pea, or about five grains, on going to bed, and covering with an extra blanket. The patient should keep warm next day. This both moistens the dry throat and further relieves the symptoms of "cold" and slight blood-poisoning from suppressed perspiration, by re-opening the millions of pores of the skin more or less closed by cold.

3. These remedies have the three recommendations of being easy to obtain, convenient to carry in travelling, and perfectly harmless.

4. They are nearly or quite useless in the actual cure of long-continued chronic diseases of the throat, or acute inflammation or "tonsillitis," both of which require other appropriate treatment.—*New York Medical Record*, Jan. 1, 1873.

Ovariotomy.

A long paper on this subject appears in the *New York Medical Journal* for December, from the pen of Dr. Marion Sims. Dr. Sims states that he was originally amongst those who condemned the operation, but that now he is not only in favor of it himself, but can find no one opposed to it. Yet he does not believe the method of operating as at present practised is perfect, nor that we are materially in advance of the earlier operators. Dr. Thomas gives a table of operations performed by twenty-five surgeons, beginning with Spencer Wells' 400 cases. These twenty-five have performed 1638 operations, and lost 504 cases, giving a mortality of about one in three and a quarter. One great principle has been pretty generally adopted, that of securing the pedicle externally. This renders the operation easier and quicker, but its advocates have no better success than those who follow a different method. The clamp may have its advantages, but it also has its disadvantages, which more than counterbalance the former. It is not of universal applicability, for in some cases the pedicle is too short and thick to allow of its use at all; in others it is obliged to be removed prematurely on account of traction and the consequent suffering. In some it has slipped a little, and allowed bleeding; in a few it has severed the pedicle too soon, and allowed it to drop into the peritoneal cavity before adhesions were formed to fix it to the abdominal walls; in other instances its traction and pressure have compelled its removal, and the short stumpy pedicle has dropped in with sloughy shreds attached to poison the peritonean membrane. For these and various other reasons Dr. Sims thinks that the clamp has seen its best days. For twenty years he has advocated the plan of tying the pedicle with silver wire. When the pedicle was narrow he transfixed it with a double wire and tightly twisted a wire round each half. When the pedicle was broad he introduced the requisite number of separate wires, in one case as many as six, and secured it in segments. Dr. Emmet's plan he considers still better, which consists in securing the pedicle by a figure of 8 loop of wire, and drawing the whole so firmly that when the wires were fastened (by twisting) and the pedicle cut off, the ends of the constricted arteries could often be seen projecting beyond the level of the cut stump. Torsion of the arteries of the pedicle is an important improvement. Dr. Sims considers septicæmia, and not peritonitis or hæmorrhage, to be the principal cause of death in ovariotomy. He approves of Dr. Peaslees' practise of making intra-peritoneal injections of water at 98° Fahr., with the addition of liq. sodæ chlorinatæ or cabolic acid, but proposes in addition to puncture the *cul de sac* of the vagina behind the cervix uteri, and to pass a tube of some sort into the peritoneal cavity to drain off any effusion. This should be done in every instance, whether there are adhesions or not. If in three or four days we see that there is no necessity for this precautionary step in the operation, we have nothing to do but to remove the tube, and in twenty-four hours the little puncture closes up spontaneously. It cannot possibly do the least harm, and it may be the means of saving life.—(*New York Medical Journal*, vol. XVI. No. 6)

Treatment of threatened Abortion by Hypodermic Injections of Morphia.

Dr. Isham, of Ohio, has preserved records of seven cases of menaced abortion, in all of which there existed forcible uterine contractions, hæmorrhage, and dilatation of the os. In every instance the uterine contractions and hæmorrhage were arrested, and the os contracted from the administration of morphia by the mouth and hypodermically, in full doses and at short intervals. In four cases the patients went on to full term, and gave birth to fully developed children. In the three unsuccessful cases, expulsion occurred in from three days to two weeks In two of these cases there was fœtor of the discharges on the first examination, so that they may be excluded from the series as almost hopeless. Most of the advocates of opium advise its administration by the rectum. This is likely, because the irritable stomach so common in cases of threatened miscarriage may not tolerate opium, but the small measure of success may perhaps be attributed to the mode of administration. It is well known that medicaments introduced into the rectum act in a very uncertain manner, and it will be readily seen how opium or its alkaloids given per orem to a patient vomiting and retching might fail to avert a miscarriage. Just when these means have failed and will fail again, Dr. Isham thinks the hypodermic injections would prove invaluable. In addition to calming uterine action, it fulfils other indications, its influence spreading over the brain and ensuring rest to the whole system.—*Hay's American Journal*, Jan. 1873.

Ice in the Rectum in the Treatment of Narcosis of Chloroform.

According to Dr. Baillée there is no more energetic means of overcoming the narcosis produced by chloroform than the introduction of a small portion of ice into the rectum. It can be pushed through the sphincter without the employment of much force. It immediately melts, producing a deep inspiration which is the precursor of natural respiration and the re-establishment of cardiac functions. M. Baillée recommends the same plan to be pursued in cases of apparent death in new-born infants.—*Bulletin Général de Thérapeutique*, April 15th, 1873.

Nitrate of Potash and Quinine as Febrifuges.

Dr. H. Macnaughten Jones states that for some years past he has frequently employed nitrate of potash and quinine in large doses in diseases where the temperature maintained a high range, and almost universally with success. He records several cases of simple pneumonia, of pneumonia complicated by typhoid symptoms, and of intermittent fever, where this plan was pursued with good results. The nitrate was given in doses of fifteen grains every six, or even three hours, whilst the quinine was ordered in ten-grain doses at corresponding intervals; sometimes a little ipecacuanha was added.—*British Medical Journal*, March 1, 1873.

Treatment of Cerebral Exhaustion.

In his Croonian Lectures lately delivered, Dr Radcliffe, after describing the principal symptoms of cerebral exhaustion, as failure of memory, depression of spirits, increased or diminished sleepiness, unusual irritability, a continued craving for food or for stimulating drinks, lessened locomotive power, lessened control over the bladder, diminished sexual activity, inequalities of circulation, an aged aspect, disposition to tears, yawning, occasional faintness, epileptiform symptoms, or transitory hemiplegia, or coma, proceeds to consider its prevention and treatment. In diet, he thinks that the present system of urging persons at all weakly, especially chileren, to eat as much as they can, may have not a little to do in causing the development of many nervous diseases. He is equally opposed to persistence in "training diet" and to Bantingism, believing that the nerve tissues as well as others may be effectually starved by excluding the hydro-carbons from the food. He further thinks that too much stress is ordinarily laid upon the importance of walking exercise; much walking, in fact, seeming to be no insignificant cause of the breakdown in the patient's health, and little or no progress is made until he begins to economise his strength in this direction. He is also disposed to maintain that rest from head-work may be too much insisted upon in cerebral exhaustion. He is satisfied he has often met with patients with jaded brains who have certainly let their minds lie fallow too long. Mere distraction is not enough. What is wanted generally, even at the beginning, is not that work should be given up altogether even for a short time, but that it should be moderated in amount or changed. He is of opinion that the wakefulness may be much better combated by attention to the position of the head in sleep than by narcotics. Sleep in bed is, as a rule, sounder with a low pillow than with a high one. On the contrary, if there be undue sleepiness the head should be kept high.—*British Medical Journal,* April 11, 1873.

Vaccinal Syphilis.

In the meantime it is generally agreed that the vaccine lymph even of a syphilitic child, if perfectly pure, cannot communicate syphilis from one individual to another. This may be true, or it may not; at all events, it is the current belief, and facts seem to uphold it. On the other hand, the impression is that if the blood corpuscles, red or white, or other formed material, enter into the fluid used for vaccination, there is a risk of syphilitic contagion. It has been said that the infected individuals have been the last to be vaccinated from the diseased child; and as it is the custom with some either to scrape or squeeze the vaccine vesicle with the lancet, so as to procure the greatest possible quantity of vaccinating fluid, it would seem as if the corpuscles procurable from the walls of the vesicles were a possible means of contamination. Whether this be so or not, it is plain that every possible means must be adopted for preventing the contamination of the vaccine liquid with solid particles other than those itself contains.—*Medical Times & Gazette.*

Death from the Inhalation of Nitrous Oxide Gas.

The first death—at least, in this country, England—from the inhalation of nitrous oxide gas occurred at Exeter on January 23. The unfortunate patient was a lady, Miss Ada Wyndham, said to be a relative of Baron Channell. The nitrous oxide gas was administered to produce insensibility during the extraction of a tooth, by Mr. J. T. Browne Mason, a dentist practising in Exeter. Miss Wyndham's medical attendant and brother-in-law, Dr. Pattinson, accompanied her to the house of Mr. Browne Mason, and remained with her until the fatal event. The nitrous oxide gas was administered at her own request. After a few inhalations it was noticed that the pulse was becoming weak, and the process stopped. Miss Wyndham, however, was not insensible, and an effectual attempt having been made to extract the tooth, the process of inhalation was resumed. The tooth was drawn, but the extreme lividity of the features indicated danger, and Dr. Drake was sent for. Attempts were made to restore consciousness, but in a few minutes the patient died. The age of the patient was 36. Six gallons of the gas are said to have been given. At the inquest Dr. Drake gave evidence that both the heart and lungs were healthy, and he attributed the death to paresis of the medulla oblongata. Dr. Pattinson said that up to the day of her death Miss Wyndham's health had been excellent, and there was nothing in her condition to render her an unfit subject for an anæsthetic. The jury rendered a verdict of "Homicide by misadventure," but fully exonerated the dentist from blame. Writing to the *Times* on the subject of the fatal administration of the gas in this case, Mr. A. T. Norton suggests that death might have been the result of bleeding from the first ineffectual attempt at extraction, the blood having found its way into the larynx, and suffocated the patient. He draws attention to the fact that there are on record 70,000 cases of safe administration in this country, and that there must have been at least twice that number of cases of which no record has been kept. Experiments on the lower animals prove that no animal *in extremis* from inhaling the gas will recover immediately on exposure to atmospheric air. It would be satisfactory to be assured of the purity of the gas used in this case, and there should most certainly have been a careful and complete post-mortem investigation—if, as Mr. Norton asserts, and as we are informed, such examination was not made. A case of death during inhalation of gas, but from a doubtful cause, is said to have occurred in America.—*Medical Times & Gazette.*

Chloral in Puerperal Eclampsia.

M. Dugardin (in the *Gaz. Med. de Paris*, February 1) records the good effects of chloral in puerperal eclampsia and protracted labor. He thinks it will replace chloroform in many cases, having the advantage over this latter of being employed where we require to keep the patient for a long time under the influence of some anæsthetic. In those cases of very nervous women, where the pains during the first stage of labor are very severe, or recur very frequently, and cause much unnecessary suffering and waste of power, chloral acts very beneficially, diminishing the frequency and intensity, but not the efficacy of the pains—thus shortening the duration of labor and lessening the shock to the system. He records two cases—*Medical Times & Gazette.*

Abortion of Smallpox Pustules on the Face.

M. Revillod, of Geneva, observes that he only mentions collodion in order to caution against its employment. This inelastic varnish, opposing the tumefaction of the face, causes most severe pain and strangulation of the skin whenever it scales off, while it does not prevent suppuration, which collects in a sub-epidemic layer. The preparation which M. Revillod recommends as leading to the abortion of the pustules, and preventing scars and suppuration of the face, is the following:—Soap ten parts and glycer ne four parts are to be rubbed up together, and then twenty parts mercurial ointment are to be added. This is of a proper consistence to admit of its being spread in a uniform layer over the face, the tumefaction of which it does not prevent. It will prevent scarring if it be applied at the commencement, or before the papulæ are transformed into vesicles.—*Gaz. Med.*, March 8.

The Internal Use of Aconite in Neuralgia.

I send you a few notes of cases showing the great use of tincture of aconite, both alone and in combination with other remedies, in neuralgia and muscular rheumatism I now speak of its *internal* use, in contradistinction to *external.* I give five cases, each the representative of a different class of the same affection:

* * * *

I have now given five cases, each representative of a different class of rheumatic and neuralgic affections, in which I have found the internal use of tincture of aconite exceedingly useful. It remains for me to say in what class of cases I have not found such good effects They are two—first, in acute rheumatism attacking the joints; and, secondly, in lumbago its internal use has proved of much less value. In the latter affection, however, complete relief may often be obtained by the application of chloroform, liniment, aconit., and liniment, belladonnæ in equal parts on lint with oiled silk over it. In conclusion, I would add that constipation, or a disordered state of the stomach, or both, should be remedied before commencing the use of aconite, or *at least* in such cases suitable remedies for the relief of such a state of things should be combined with it. As a rule aconite seems to have more effect when combined with spirit of chloroform than when taken alone—at least, so far as my experience goes. It is well always to commence with a small dose, as I know of no remedy so variable in its effects on different constitutions. I have seen a single dose of eight minims produce decided tingling *all over the body* in an adult, and I have given as much as twenty minims each third or fourth hour without any tingling at all.

Armagh, Ireland. I am, etc., A. Leslie Mease, M. B.
—*Medical Times & Gazette.*

Treatment of Post-Partum Hæmorrhage by the Intra-uterine Injection of the Perchloride of Iron.

The patient was admitted into the British Lying-in Hospital on January 26, 1872, and delivered that day by a pupil midwife of a male child, after a labor of twelve hours The placenta came away easily in twenty-five minutes. Third day: The patient complained of severe pain in the hypogastrium. Tenth day: Hæmorrhage occurred. Eleventh day: Hæmorrhage continuing, a solution of one part of strong liquor ferri perchloridi to eight of water was injected. Sixteenth day: Bleeding continuing the injection was repeated. Eighteenth day: The uterus was again injected, with iron (one in four), and again on the twentieth day with equal parts of the liquor ferri and water. The twenty-first day strong liquor ferri was injected into the uterus with an intra-uterine syringe holding about two drachms. This produced severe pain, but completely stopped the hæmorrhage, which never amounted to flooding, but oozed continually, of a bright red color. Twenty-third day: the patient was delirious, and discharge brown and offensive. Twenty-fifth day: Had occasionally great dyspnœa, and picked at the bedclothes. Twenty-eight day: Died. The uterus was removed, and examined by Dr. Snow Beck and the author. It was nearly five inches long and four inches broad, and its walls three-quarters of an inch thick. Its anterior and posterior surfaces were marked with black streaks; the tissue was soft, but otherwise apparently healthy. Its inner surface was covered with a dark reddish-black fluid, and at the junction of the upper third with the lower two-thirds was a depression stained black. Near the center of it an artery hung out more than one-eighth of an inch. Near the depression, and fitting into it, was a rounded mass of placenta about the size of a small filbert. A small portion of the end of an artery showed the free extremity slightly puckered, its margins rounded, and the canal unobstructed. The author believes this case teaches us—1. That post-partum hæmorrhage happening after complete contraction of the uterus, and therefore after the uterine sinuses have been emptied of blood, is evidently arterial. 2. That when a solution of the perchloride of iron is injected into the uterus, the sinuses take it up, and carry it into the veins; the tissues also immediately surrounding the sinuses becoming stained. 3. That the perchloride of iron does not produce contraction, nor, by coagulation of blood, blocking of the orifices of the uterine arteries. 4. That the perchloride of iron is a styptic, the use of which in the cavity of the puerpera uterus is not innocuous.

Dr. Routh thought great credit was due to Dr. Heywood Smith for bringing forward this unfavorable case. He had suspicious that the injection of iron was not so innocuous as believed. Some time ago he called in Dr. Barnes to assist him in treating a case of post-partum hæmorrhage, in which Dr. Barnes injected a solution of the weak tincture of steel and water in equal parts with the desired effect. On the third or fourth day puerperal fever set in, and, in spite of all treatment, the patient died. He did not say the death was due to the injection, but he thought it might be so. In Dr. Heywood Smith's case no mention was made of the complete escape of fluid injected; perhaps some had been retained. If so, the symptoms might be due to retention of the fluid giving rise to peritonitis, rather than to the nature of the fluid injected.

Dr. Graily Hewitt stated that he had seen one case where the perchloride of iron injection had been used to restrain hæmorrhage, and the patient had subsequently died. A solution (one in four) of the tincture was injected, and restrained the bleeding. After three days pain set in, the lochia became arrested, and the patient died from puerperal peritonitis and other grave complications, five weeks after delivery. Whether this result was in any way due to the action of the iron was a question.

Dr. Braxton Hicks thought the injection which Dr. Heywood Smith had used was too strong, and that it would have been well in his case to have dilated the cervix for the purpose of investigating the interior of the uterus. He had employed the perchloride of iron injection a great number of times, and had made inquiries largely amongst those who had also used it, without having seen or heard of any serious result. The only case in which he had seen any trouble was one of severe flooding after twins. The injection was used with complete success. Twenty-four hours after pains arose, and it was found that the uterus contained hard, blackened coagula which it could not expel. These were broken up and washed out, and the patient did well. He believed pyæmia might result from depression after severe hæmorrhage where no injections of perchloride of iron had been used.

Dr Sell (of New York) said that his experience regarding the use of perchloride of iron was obtained at the University of Vienna, which could boast of from 7000 to 9000 deliveries annually. There its use in post-partum hæmorrhage was the treatment upon which they relied, provided ergot and injection of cold water did not arrest the bleeding. A weak solution of the ferrum sesquichloridum (ʒj. ad. aq. lb. j.) was gently injected, and repeated till the hæmorrhage ceased. He had never seen any bad results from this treatment.

Dr. J. J. Phillips, while admitting that there were certain dangers connected with the injection of a solution of perchloride of iron, believed there was no valid argument against its use in suitable cases. He had used it several times, and death had occurred only in one case, which he could not in the least degree connect with the use of the iron. He generally diluted the liquor ferri perchloridi (not the strong one) with about half its bulk of water.

Dr. Playfair said that he should much regret if the case brought before the Society should have the effect of throwing doubt on the safety of astringent injections in severe cases of post-partum hæmorrhage. He had used the perchloride of iron in many cases, and only once unsuccessfully; nor had he ever seen any evil consequences. Dr. Heywood Smith's case was one of secondary hæmorrhage caused by the presence of a piece of retained placenta; and the strong undiluted liquor ferri perchloridi had been injected—a proceeding which Dr. Barnes had not sanctioned.

[This discussion will be resumed at the next meeting.]—*Medical Times and Gazette.*

Ambulatory Doctors.

The Brussels Academy of Medicine, in order to meet an abuse that has been growing up in Belgium, has come unanimously to the following resolutions:—"1. The Academy regards the practice of ambulatory medicine as contrary to professional dignity. It considers as ambulatory doctors those who periodically visit places at a distance from their domicile, whether in Belgium or abroad, without having been summoned thither for particular cases or public authority, and especially when they advertise their arrival there, thus disputing practices with their *confreres* established in such localities. 2. The Academy is of opinion that doctors, whatever in other respects may be their merits, who pursue ambulatory medicine as defined above, ought not to be admitted to its membership."—*Presse Belge*, February 9.

Clinical Recognition of Mercury in the Excretions.

As the general results of an investigation which they have been engaged in, Professors Mayençon and Bergeret, of Lyons, state —1. That mercury and its salts are absorbed by the skin as well as by the stomach. 2. That of the absorbed mercury the most considerable portion is at once eliminated, while the remainder impregnates the tissues, and is then insensibly eliminated. This is, howevar, effected rapidly, unless a long-continued use of mercury has thoroughly impregnated the tissues. 3. That elimination seems to take place by all the excrementitial humors, but principally by the urine and intestinal juices. 4 That iodide of potassium possesses a marked action in freeing the economy of the mercury with which it has become impregnated. 5. That mercury yielded by the excrementitial humors, and the milk, and especially by the urine, is easily detected by the use of a voltaic element—iron and platinum—which fixes the mercury in a metallic condition on the platinum. The matallic mercury is first converted into bichloride by chlorine, and then into a red biniodide by the action of a solution of iodide of potassium.—*Lyon Medical*, February 2.

Davidson, Denison, and Romilly, persons connected with the notorious Kahn's Museum, have been found guilty of disseminating indecent books and pictures, but have been allowed to go out on condition of being bound over—Davidson and Denison in the sum of £500, and Romilly in £100—not to disseminate any such books, etc., in future. In case of their infringing the conditions of the recognisances, they would be called up to receive judgment.—*Medical Times & Gazette.*

On the Gynæcological Employment of Transplantation of Small Portions of Skin for the Healing of Indolent Ulcers.

Dr Herman Beigel (*Wein. Med. Presse*, xxii., 23. 1872) records two cases in which he had tried transplantation of skin successfully. *Case* 1.—A woman, aged 38, had a large indolent ulcer of the vagina and posterior lip of the uterus, with profuse secretion. After fruitless efforts at healing it by caustic agents, transplantation of portions from the opposite healthy side of the vagina was tried, the pieces being kept in position by a plug of cotton wool steeped in glycerine. The ulcer healed over perfectly in six weeks. *Case* 2.—A servant, aged 25, had a large ulcer, two inches in diameter, on the posterior vaginal wall. Various modes of treatment were employed without avail. Transplantation of four pieces of skin from the arm was resorted to, and the ulcer was perfectly healed over in eight weeks' time.

Rum-and-Milk in Phthisis.

The value of this combination is undoubted by those familiar with its use. The remedy is not to be estimated simply because of the two ingredients, but because (1) milk is the most feeding of foods; (2) alcohol in moderate quantity, is aliment, and promotes digestion; (3) both milk and rum are the cheapest form of nourishment which a poverty stricken consumptive can take, (4) persons can live exclusively upon the ingredients mentioned, without any other food; (5) those who cannot eat solids, and would therefore starve, can drink such a mixture as the one in question, and thrive; (6) in phthisis loss of f it is a main symptom —it is a doctor's effort to restore it. This may be done by giving a patient bacon, lard, suet, or vegetable, fish, or animal oils. But, as a rule, the stomach in such persons is "touchy," and rebels against strange flavors. Therefore, as milk forms a daily article of diet, and the stomach is accustomed to it, the doctor finds it the best oleaginous medicine. Rum is the spirit which is the least liable to adulteration, because the cheapest. Consequently, amongst the poor, the two combined are regarded as the best and cheapest roborant. Cream is too rich for most stomachs, and curaçoa too foreign a flavor to be welcomed. But every wise physician will adopt whatever variety he may find best in any case. Those whose experience is the most extensive put most faith in the articles which they find generally useful.

Hence the selection of milk with rum. In phthisis the milk and spirit ought to be administered at least three times a day, with the chill off (and sweetened?)—*Medical Times and Gazette.*

Dr. James Cumming gives an interesting paper "On the Diagnosis of the Sex of the Child by the Rapidity of the Pulse whilst in utero." Of fifty-nine cases, he diagnosed it correctly in forty. If from 116 to 140 per minute, and distinct, a male may be predicted; if from 140 to 160, and indistinct, a female.—*Medical Times and Gazette.*

Invalid Diet and Cookery.

I have frequently found that patients after being long dosed with beef-tea, though well prepared, get utterly tired of it, and even refuse to take it. In these cases I have often found that the addition of some vegetable flavoring matter has enabled the patient to resume his food with relish. Of course I do not mean that the vegetable matter is to be swallowed bodily; but after being strained off, the broth retains its flavor. The use of burnt onions among all classes of cooks, even the highest, is well known; and though I am not prepared to advocate the general use of such a robust vegetable, there are others equally accessible and more delicate. Chief among these is celery, which, during a certain portion of the year, may be used bodily, and is cheap enough, but during certain seasons it cannot. For this reason I am in the way of using from time to time small quantities of celery seed, which is cheap and may be readily procured. A very small proportion of the seed added to the beef-tea gives it a totally different flavor from the insipid, mawkish taste it too often possesses, and I have been rewarded by seeing patients turn to their food when so seasoned with a zest they had long ceased to exhibit.

I am, etc , E.

Bismuth as an External Application in Skin Diseases.

A correspondent writes—"The value of bismuth in alleviating the intense itching and irritation which accompanies chronic eczma and other forms of skin disease is less known than it ought to be. In some obstinate cases, in which the inflamed condition of the derma is aggravated and kept up by the constant scratching and rubbing which the patient finds it impossible not to indulge in, I have found an ointment containing bismuth in the proportion of half a drachm of the subnitrate to the ounce of simple ointment, rubbed up with a little spirits of wine, and applied freely to the skin, give great relief. I was indebted to a work by Dr. McCall Anderson for the suggestion, and have certainly found the ointment far more efficacious as a soothing remedy than the benzoated zinc ointment more commonly used. Dr. McCall Anderson, in recommending bismuth, observes that the ointment must not be made with benzoated lard, or the reverse of a soothing effect may be produced.—*Medical Times & Gazette.*

Digitalis in Dropsy.

A woman of middle age was brought to the hospital after she had been confined to bed for some time for dropsy. According to her own statement she had passed no urine for forty-eight hours previous to admission; certain it is that in eighteen hours after admission only eight ounces could be got away by the catheter. There was a good deal of dropsical effusion under the skin in various parts, especially in the walls of the abdomen and in the breast. The urine was highly albuminous when tested after withdrawal by catheter. Under the circumstances it was necessary to get the kidneys to act, and I ordered to be applied to her loins, over the kidneys, an ounce of the tincture of digitalis on a piece of lint, to be covered over carefully, and to be renewed in four hours. The result was most satisfactory: urine began to flow profusely, and before long far exceeded the normal quantity. Had it been possible to procure the fresh leaves, I should of course have used them, but they were not to be had.

"The other instance is a man with contracted kidneys and no dropsy, who from time to time becomes drowsy, and subject to fearful convulsions. In his case, too, nothing suits so well as digitalis; but when he becomes insensible, the very time he ought to take it, it cannot be given. Under such circumstances I commonly reduce a quarter of a grain of extract of digitalis with water, and inject it under the skin of the arm. This, as a rule, makes the urine flow freely, and the patient generally comes round. "A. S."—*Medical Times and Gazette.*

Dr. Thompson Dickson exhibited (to the Pathological Society) specimens of a Spinal Cord from a man whose thigh had been amputated fifteen years before. Sections taken from the lumbar region showed the cells wasted in the posterior cornu on the side on which amputation was performed. In progressive muscular atrophy it had been supposed that the changes in the cord were subsequent to the changes in the muscles. That was not so; in progressive muscular atrophy the cells in both cornua were quite gone.

Dr. Dickson said that he had early given attention to the changes in the spinal cord following amputation. These changes were constant,—wasting of the nerve; wasting of its posterior root, not of its anterior; wasting of the posterior column on the same side as the amputation, even to the top of the cord, and in cases of amputation of the arm as far as the medulla. There was wasting of the grey matter also, but not of the individual cells.—*Medical Times & Gazette.*

The Pathology of Puerperal Fever.

In a valuable pamphlet upon puerperal septicæmia ("Contribution à l'Etude de la Septicemie Puerpérale," Paris 1873), D'Espine refers this serious complication of childbed to septic absorption by open or wounded portions of the utero-vaginal passages. The poisonous nature of the fluids in contact with the genital surfaces was experimentally investigated by D'Espine, who gives in detail the results of injections into the pregnant uterus or subcutaneous cellular tissue in rabbits, etc., of vaginal and uterine discharges and of lochia at various periods after delivery. For example, he found that a filtered solution of normal blood, of vaginal mucus, or of liquor amnii injected into a cellular tissue does not produce fever, nor does blood from the vagina during delivery; that a similar injection of lochia, taken at the end of the first day, always causes fever, but without symptoms of notable alteration of the health, the fever disappearing almost at once; that an injection of the lochia taken at the end of the third day always produces a severe and persistent fever, with abscesses at the seat of injection, and inevitably kills the animal with symptoms of septicæmia. Thus in one rabbit, into whose uterus putrid matter was injected immediately after parturition, severe fever and death occurred, and there were found post-mortem endometritis, general peritonitis, phlebitis of the broad ligament, infarcts of the spleen and liver, disseminated abcesses of the psoas, and great injection of the intestinal mucous membrane. It would thus appear to be proved that the presence of certain fluids in the genital passages is one of the elements in the production of puerperal septicæmia, that the lochia belongs to this class of fluids, and that the liability to puerperal fever increases with the age and foulness of the same.

Next, in regard to the presence of open or wounded absorbing surfaces in the genital tract, D'Espine notes that laceration of the cervix uteri, or an open condition of the mouths of the placental sinuses, with uterine atony, is frequently present in puerperal fever, as clinically observed; that cases of severe labor, especially those complicated with hæmorrhage are, *cæteris paribus*, most liable to the disease; and that post-mortem it is exactly in the lymphatics leading from the cervix and from the placental site that pus and other evidences of infectious inflammation are to be found. An interesting point is, that there is a complete parallel between these puerperal cases and those of surgical fever—that is, that there is nothing specific in the course of the disease. If the septicæmia be at all severe, it will lead on speedily to death before the production of embolism and metastatic abscess; and when these do occur in protracted cases phlebitis is found in and around the uterus, fully accounting for the emboli.

D'Espine contends that there are all degrees of puerperal septicæmia, from the ephemeral fever to the rapidly fatal one; that normally there is no elevation of temperature in the puerperal state; and that the so-called "milk-fever" has nothing to do with that secretion, but is a true though mild septicæmia.—*Medical Times and Gazette.*

Epitaph of a Quack.

I was a quack, and there are men who say
That in my time I physick'd lives away,
And that at length I by myself was slain
With my own drugs, ta'en to relieve my pain.
The truth is, being troubled with a cough,
I, like a fool, consulted Dr. Gough,
Who physicked me to death, at his own will,
Because he's licensed by the State to kill.
Had I but wisely taken my own physic
I never should have died of cold and 'tisick.
So all be warned, and when you catch a cold,
Go to my son, by whom my medicine's sold.

A NEW THEORY OF FEVER.

By T. J. Maclagan, M. D.

Fever is smyptomatic or idiopathic; dependent on some local lesion, or unaccompanied by any local change capable of giving rise to it. In the many attempts which have been made to account for the phenomena of the febrile state the above distinction has not been sufficiently insisted on; and to this cause I believe to be due much of the present unsatisfactory state of our knowledge of the causation of fever. Such a possible source of fallacy I shall avoid by confining myself entirely to the consideration of idiopathic fever.

Preternatural heat, calor preter naturam, has ever been regarded as the essence of the febrile state. Various theories and hypotheses have at different times been advanced in explanation of this rise of temperature; but all have given place to that of Virchow, which ascribes it to increased tissue-change, to an exaggeration of the same process which keeps up the normal temperature. "Fever," he says, "consists essentially in elevation of temperature, which must arise from an increased consumption of tissue, and appears to have its immediate cause in alterations of the nervous system." *

It seems to me, however, that this theory is far from satisfactory, and that it serves to indicate rather than to explain the

* For an excellent *resume* of the views of Virchow and Parkes, see a paper by Sir Wm. Jenner in the "Brit. and For. Med. Chir. Review for April, 1856.

phenomena of fever. So far as it goes it may be correct enough; but it goes a very short way, and leaves untouched the questions which itself suggests, and whose solution must form the foundation for a satisfactory theory of fever. Why is there increased tissue-changes? and why should the nervous system exercise other than its usual and normal action?

If the first step in the production of fever is increased tissue-change, the first requisite to a satisfactory theory of fever is that it should account for this change. This the theory of Virchow fails to do.

It is a characteristic of nearly all the maladies in which idiopatic fever occurs that they are communicable from the sick to the healthy. In such diseases the existence of a specific *materies morbi* introduced from without is an assumption necessary to the phenomena which they present, and especially to the phenomena of infection. This foreign body introduced from without (conveniently called the contagium) must be the cause of the fever; without it there is no fever; its reception into a susceptible system is followed by the phenomena of that condition. But fever is not a distinct entity; it is a collection of different phenomena, all of which are abnormal, and all of which are developed subsequently to the reception of the contagium. That which gives rise to the fever must also of necessity be, either directly or indirectly, the cause of all the phenomena which go to constitute that condition. The contagium is the cause of the fever; the contagium must therefore be the cause of the individual phenomena which go to form the febrile state. How so? How can the contagium be the exciting cause of these phenomena? An answer to this question presupposes a knowledge of the nature of the contagium.

The observations of M. Chauveau and Dr. Sanderson have proved that contagium is particulate.

The phenomena of infection and the fact that the contagium is produced to an enormous extent with the system, prove that it is an organized substance.

The investigations of Dr. Sanderson (Twelfth and Thirteen Reports of Medical Officer of the Privy Council) render it probable that the cantagium is a minute animal organism of the nature of a microzyme. The chief characteristics of such organisms are:—

1. That they are mainly composed of albumen.
2. That they largely consume nitrogen.
3. That they largely consume water.
4. That they take up oxygen and give off carbonic acid.
5. That they multiply by division.

The object of this paper is to show that the propagation of such organisms in the body is competent to the production of all the phenomena of idiopathic fever.

The essential phenomena of idiopathic fever are:—

1. Increased waste of the tissues, especially the nitrogenous.
2. Increased consumption of water.

3. Preternatural heat.

No theory of fever can be regarded as satisfactory which does not afford a reasonable explanation of each of these phenomena. No such theory has hitherto been advanced. My theory briefly is that all the essential phenomena of idiopathic fever are due to the propagation in the system of minute animal organisms, which, for convenience sake, I shall continue to refer to as microzymes or contagium particles.

We shall proceed to consider in this light the essential phenomena of idiopathic fever.

1. *Increased waste of the tissues, especially the nitrogenous.*—Waste of the tissues may be produced in two ways: it may be due to diminished nutrition, or to increased consumption. In fever it is believed to be due to the latter cause, and on this belief is founded the generally accepted theory of Virchow. Increased tissue-metamorphosis is the foundation on which rests the whole superstructure of the modern views of the causation of fever. But on what is this hypothesis based? It rests on the difficulty which is experienced in otherwise explaining the wasting of the tissues, the rise of temperature, and other phenomena of fever. But increased tissue-consumption must itself be due to some cause. It is due, says Virchow, to alterations in the nervous system. But that is merely removing the difficulty one step back. Whence these alterations.

The existence and influence of increased tissue-consumption have, indeed, been theoretically admitted without a proper examination of the facts: there is no reliable proof of its existence; and I shall presently show that all the phenomena attributed to it are more satisfactorily explained in a totally different manner.

Increased consumption of tissue being rejected as a cause of the waste which occurs in fever, it remains for us only to fall back on diminished nutrition for an explanation of this phenomenon. How is this produced? The one cause to which, directly or indirectly, are to be ascribed all the phenomena of idiopathic fever is the contagium. To this, therefore, we turn for an answer. The contagium is a microzyme, and as such largely consumes nitrogen. Whence does it get this? There are three possible sources: (1) the fixed or organ albumen, (2) the store or circulating albumen, and (3) the urea. It is most likely to be taken from that which most readily parts with its nitrogen; this is the store albumen. But the store albumen consists of two parts, a *constructive* and a *retrogressive:* the former derived from the assimilated ingesta, and destined for the nutrition of the tissues; the latter derived from the disintegrating albuminous tissues, and destined for excretion. From which does the microzyme take its nitrogen? They probably both part with it with equal readiness, and on that score little can be said in favor of either.

There is another agency, however, which probably excercises a powerful influence in determining the choice of microzymes in favor of one or the other. Microzymes being mainly composed of albumen, it is evident that the process by which their protoplasm is formed bears a much closer analogy to that by which the albuminous tissues are built up than it does to that which results in the formation of urea. The formation of urea is a retrogressive step; the formation of the albuminous tissues and of the protoplasm of the contagium particles are constructive steps: each results from the appropriation by a living albuminous tissue of the elements requisite for its growth. The material from which each is built up is derived from the blood, and it is but reasonable to suppose that, with such analogies, the particular ingredient of that fluid from which the nitrogen is derived should be the same in both. These considerations render it probable that the contagium particles derive their nitrogen from the *constructive* store albumen.

This view is supported by other arguments founded on a consideration of the phenomena to which the propagation of the contagium in the system gives rise. Prominent among these is wasting of the nitrogenous tissues. Given such an organism as I have described, growing and propagating itself to an enormous extent in the system, pervading every part of the body, and everywhere and constantly consuming oxygen, nitrogen, and water, (and taking this nitrogen from the *constructive* store albumen), it necessarily follows that there must be a serious deterioration of the nourishing fluid, a great diminution in the nutrient ingredients conveyed to the various organs of the body, and consequent impairment of the function of each. In the nitrogenous tissues, requiring as they do a large supply of nitrogen, the deprivation is specially felt, and manifests itself by a great and rapid diminution in bulk. They waste, not because of increased tissue metamorphosis, but because the normal waste is not compensated for by a due supply of fresh constructive material. Blood continues to be supplied to, and to circulate through them, but it is blood charged with a devouring parasite which utilises for its own ends the materials which ought to nourish and build up the frame.

Such being the case, it is evident that the propagation of the contagium in the system *must* be accompanied by emaciation and loss of weight, unless the nutrient ingredients of the blood are supplied in greatly increased quantity, so as to compensate in some degree for the increased demand. Are they so supplied? It is impossible that they can be, for the same agency which deprives the nitrogenous tissues of their nutrient material causes also a like deterioration of the blood which passes to all the organs of the body. Such deterioration of the blood supplied to the brain leads to defective nutrition of that organ, and consequent impairment of that nervous influence which is requisite to the due performance of their functions by all the tissues and organs of the body. A similar deterioration of that which passes to the digestive orgars leads to the imperfect performance by them of their peculiar functions; while the great consumption of water which accompanies the development of the contagium particles leads (as will presently be shown) to a marked diminution of the quantity of the secretions necessary for the digestion of the food. There are thus produced diminished appetite, impaired digestion, and defective assimilation; and all this while the blood which exists in the body is being deprived of its most essential constituents in the manner which I have indicated.

The wasting which occurs in idiopatic fever is thus due to a process of acute starvation resulting from the consumption by the contagium particles of the nutritive ingredients of the blood.

2. *Increased consumption of water.*—In fever water is taken into the system in greatly increased quantity; it is not retained as such, and it is not eliminated; it must therefore be used up, and in some way utilised. The normal ingredients and tissues of the body require no such large supply, and are incapable of utilising it; the only abnormal agent of whose presence we are aware is the contagium. We have, therefore, to inquire whether the propagation of the contagium in the system calls for an increase of the water-supply. We shall find that it does. In virtue of the properties common to them and all microzymes, contagium particles require water for their growth and propagation; this they find in the system in sufficient quantity so long as their rate of reproduction is slight. But when this comes to be excessive the system cannot with impunity supply the requisite quantity. The demands of the contagium particles lead to the consumption of much of the fluid which the system requires for the supply of its own wants; the consequent deprivation of the system results in unusual thirst, the degree of thirst bearing a direct relation to the extent to which the contagium is produced. The large quantity of water taken to quench this is consumed by the contagium particles almost as soon as it is received into the system, and so long as they continue to grow and propagate does the demand for water last.

In this excessive consumption of water by the contagium particles we have a ready explanation of some of the usual symptoms of fever. The thirst, the loss of appetite, the dry skin, the parched tongue, the constipated bowels, and the scanty urine are all due to one cause—the consumption by the contagium particles of the water which is requisite to enable the stomach, the skin, the tongue, the bowels, the kidneys, and all the other organs of the body to perform their due and proper functions. Notwithstanding the enormous quantity of water consumed, all the tissues and organs are deprived of that fluid by the still more enormous quantity of contagium particles which are formed, which pervade all parts of the body, and which everywhere consume the water of their environment.

3. *Preternatural heat.*—This, the most striking feature of fever, is usually attributed to increased metamorphosis of the tissues, to an exaggeration of the same process which keeps up the normal temperature. But we have just seen that there is no in-

creased tissue-consumption, and that the wasting supposed to be due to that is attributable to a totally different cause. Such being the case we must look elsewhere for an explanation of the preternatural heat. Naturally we turn to that which took the place of increased tissue-metamorphosis as the cause of the wasting of fever to see whether it can also explain the phenomenon now under consideration. This we find that it very readily does.

We have seen that the contagium particles are minute animal organisms which grow and propagate themselves with enormous rapidity in the system; in so doing they consume oxygen, nitrogen, and water, and give off carbonic acid in the same way as animals generally. Now there is no reason why the changes which such consumption and elimination imply should not in their case be accompanied by the same evolution of heat which we know attends like processes in the higher animals. Admitting this (and I see no ground on which we can refuse to do so), it follows that much of, if not all, the preternatural heat of idiopathic fever is directly due to the propagation of the contagium. There is a large increase in the amount of oxygen, nitrogen, and water consumed, and in the carbonic acid formed in the system; and so far as the heat-producing effect of these changes is concerned it is probably quite immaterial whether they take place during the formation of the tissues and excreta or during the formation of the protoplasm of the contagium particles. In the combination of these two agencies we have the true and sufficient cause of the high temperature of idiopathic fever.

I think I have satisfactorily shown that the essential phenomena of idiopathic fever find a sufficient explanation of their occurrence in the reproduction of the contagium, and that to this cause are to be ascribed all those symptoms which have hitherto been regarded as due to exaggeration or modification of the normal tissue-changes. To the same cause are due the altered composition of the blood, and all the minor phenomena which characterize idiopathic fever. These I need not specially consider. To two other points only I would briefly refer—namely, the changes which take place in the nervous system; and the bearing of this theory on the treatment of fever.

To alterations in the nervous system Virchow ascribes an important and primary influence in the production of fever. That the nervous system is somehow or other profoundly and seriously involved there can be no question; symptoms attributable to it occupy a prominent place in an accurate description of fever. These symptoms, however, are all secondary, and are all due to the propagation of the contagium in the system, and the consequent removal from the blood by the contagium of the materials necessary for the nourishment of the nervous centres. The growth of the contagium particles is, as we have seen, necessarily attended by a large consumption of the oxygen, nitrogen, and water of the blood: that supplied to the brain suffers no less a deterioration than that which goes to all the other organs and tissues; the brain suffers from this cause just as the above organs do, only being more impressionable and more important, the resulting symptoms are more prominent and more serious.

Treatment.—However interesting and satisfactory a theory may be, it falls short of its highest use if it fail to throw light on the treatment of the disease whose causation it seeks to explain. If the theory which I have advanced be true; if it be the case that the phenomena of idiopathic fever are all directly or indirectly due to the propagation of a minute animal organism, and the appropriation by it of the essential consituents of the blood, it follows that the treatment should consist, not in combating this or that symptom by this or that drug, but in saving for the tissues those elements of which they are being deprived by the contagium particles. This end might be attained in two ways—first, by limiting the reproduction of the contagium; and, second, by increasing the supply of the ingredients of the blood which it appropriates. The first plan is obviously the best. Can it be carried into effect? I fear not. Once admitted into a susceptible system, I see no means by which the propagation of the contagium can be stopped or even curtailed. It is an organised substance possessing the power of appropriating to itself the elements requisite for its growth and propagation: it is surrounded by these elements, and no power that we can bring to bear will prevent it appropriating them.

Can we then increase the supply of them so as to have enough for both the contagium and the tissues? The supply of a due quantity of constructive store albumen, the source whence both the tissues and the contagium particles get their nitrogen, is the chief difficulty. The vital energies of the contagium seem so to predominate over those of the tissues that the former is first supplied, the latter getting only what they can, and suffering a deprivation which is directly as the extent to which the contagium is reproduced. My theory, therefore, teaches us that the treatment of idiopathic fever should essentially consist in sustaining the vital energies, and in getting into the system all the nourishment that we possibly can. "The fever must be fed;" and that is what we have been taught by clinical experience. The old views which led to the adoption of depletion, purging and other debilitating measures have been abandoned, and have been replaced by the supporting measures which every day's experience teaches us to be the most successful. The theory which I have advanced as to the causation of fever establishes for this treatment a sound pathological basis, and shows us how futile must be all medication directed to the subjugation of the general and essential symptoms of the malady. In fever meddlesome medication is bad.

In conclusion, a mere reference must be made to various questions which here suggest themselves.

1. Why does the same dose of the same poison produce such

different effects in two individuals apparently similarly situated in all respects, in the one producing a slight and trivial attack, in the other a severe and rapidly fatal one?

2. Why do the febrile symptoms come to a more or less abrupt termination at the end of seven, fourteen or twenty-one days, as the case may be, while there is still in the system abundant materials for the nutrition of the microzyme?

3. Why does one attack afford, as a rule, perfect immunity from a second?

4. How apply this theory to symptomatic fever?

I now refer to these points solely with the object of saying that I hope ere long to give the profession such an explanation of each as will tend to confirm and strengthen the theory of fever which I have now advanced, and against which, without such a caution, these objections might be urged with considerable force. The necessarily limited space now at my disposal must be my excuse for not entering on these questions at once.—*London Lancet.*

DUNDEE.

NOTICES OF NEW BOOKS.

Fistula, Hæmorrhoids, Painful Ulcer, Stricture, Prolapsus, and other Diseases of the Rectum ; their Diagnosis and Treatment.—By William Allingham, Fellow of the Royal College of Surgeons of England; Surgeon to St. Mark's Hospital for Fistula, etc. Second Edition, revised and enlarged. Philadelphia: Lindsay & Blakiston, 1873.

This is an exceedingly practical little volume, filled with sound experience and important information. The style is terse, blunt, almost rude, but in reading the book this appears to be the natural manner of expression of a straightforward and earnest man seeking the practical only, and bestowing no attention upon any other point. The country practitioner, especially, will find the instructions contained in this work of inestimable benefit. Being compelled to do the surgery, as well as the medical practice of his patrons, this book will place him *au courant* in the management of a class of diseases, in regard to which the author in his preface has truthfully observed, "thoroughly well informed as the majority of general practitioners are on most professional subjects, rectal disease is one on which much uncertainty prevails."

Dental Caries and Its Causes; An Investigation into the Influence of Fungi in the Destruction of the Teeth.—By Drs. Leber and Rottenstein, translated by Thomas H. Chandler, D. M. D., Professor of Mechanical Dentistry in the dental school of Harvard University; with illustrations. Philadelphia: Lindsay & Blakiston, 1873.

One of the surest indications of genuine progress in all branches of the healing art is found in the growing tendency to enlarge the scope of its leading studies. The specialist quickly recognizes the truth, that he is poorly prepared to enter upon any specialty, which seeks to cure human maladies, without a competent knowledge of anatomy, physiology and pathology. The opthalmologist is continually meeting with affections of the eye, whose seat is in organs as remote as the stomach or genito-urinary apparatus. The general practitioner is ordinarily consulted first, and he commits a serious blunder when he sends to the specialist for treatment, as a purely local affection, a disease which is merely a consequence of some constitutional irritation or vice.

Dental caries is more uniformly a local disease, and due to local causes, but it is nevertheless an important duty of the general practitioner to give his patients early admonitions in regard to the care necessary for the preservation of their teeth. The treatise whose title heads these remarks, is considered an authority in the Dental profession. It will give the physician a great amount of information in regard to the causes of decay of the teeth, and the advice proper to be given to prevent its occurrence. The work is purely didactic, and therefore meets the physician's wants better than one teaching the mechanical processes which belong properly to the dentist's art.

A Hand-book of Medical Electricity.—By Herbert Tibbits, M. D., L. R. C. P., Lond., Medical Superintendent of the National Hospital for the paralysed and epileptic, Medical Officer for electrical treatment to the Hospital for Sick Children, Great Ormond street, London; with sixty-four illustrations. Philadelphia, Lindsay & Blakiston, 1873.

According to my observation, those who make the study and practice of electro-therapeutics a specialty are very apt to overestimate its value. It is fair to admit, however, that in this field of study, as in all others, knowledge gives power, and the learning and skill acquired by constant application may bring about results far beyond the expectations of those less proficient. Dr. Tibbit's little book has been highly complimented. It appears to be well arranged, and is so carefully and plainly illustrated as to obviate the first great difficulty with the unskilled electrician—the manner of arranging and running his electric machines.

The author devotes a chapter to the consideration of "Electricity as an aid to diagnosis"; the remainder of the book is devoted to the discussion of the instruments; mode of application; and electro-therapeutics.

EDITORIAL.

Salutatory:

It is not in gratification of any peculiar taste for such work, or, because I imagine that I possess peculiar fitness for such work, that I am again before the public in the capacity of Editor of a Medical Magazine. The explanation of this debut is very simple. There is an actual, crying want to be met by the publication of a Medical paper in this city; I attempt to supply this want because I know of no other person willing to assume the position. If any one of my professional brethren is ambitious of obtaining honour, or emolument, in this field of labor, the opportunity will be afforded upon good assurance that the Journal will be placed upon a permanent footing.

The Medical profession of this part of the country will, with enthusiasm support a Medical periodical as soon as they become satisfied in regard to two inquiries: First, they desire to know if the Journal is to be a practical one; will it be so conducted that the suggestions, the experience, or the learning of those writers who appear in its columns, will profit the busy practitioner, when and where he most needs their help—at the bedside of his patient? Second; they wish to know if the Journal is on so permanent a foundation that it will be continued. As it respects the former point, I think, with the many and able co-laborers who will aid me, I can promise that reasonable expectation will be realized. With regard to the latter point—the continuance of the Journal—I am sure that I cannot tell any more than my readers, that some direful cataclysm, physical, political, or moral, may not submerge it, together with many other efforts to promote human welfare in this part of the world. But in case of such an event, in the name of the proprietor, I pledge every subscriber that the balance of any unexpired subscription, shall be punctiliously returned to him; if greenbacks and mail routes continue passable.

I certainly should not trouble my readers with such matters in an initiatory editorial, if I did not feel that the history of medical journalism, renders a full understanding necessary between subscribers on the one part, and the editor and proprietor on the other. Ample provision has been made for the perpetuity of the enterprise, and unless some unforeseen and certainly, unexpected exigency occurs, the numbers will appear punctually at the dates agreed upon.

Feeling therefore, that everything practicable will be done to indemnify the subscribers against any form of loss, I respectfully, but most earnestly appeal to the medical profession, to furnish the Journal the pabulum necessary for its healthy subsistence. For the accomplishment of this purpose, two descriptions of pabulum are needed. A medical journal sufficiently resembles a steam saw-mill, to require subsistence for the power that impels it—subscription money; and material to be wrought up by the saw—papers for publication.

A familiar chat with the reader, on this subject, may be profitable in showing what are the intentions and expectations of the editor, as well as some of the difficulties which obstruct his path. The editor wishes to minister with all attainable success to the intellectual cravings, and the practical wants of very differently circumstanced patrons. What one subscriber considers bread, may be to another stone: while the fish of this reader is the serpent of that other. Almost in despair of suiting aliment to each of these various appetites, the editor appeals to the profession at large and asks its members to contribute, each from his own larder, something towards the general entertainment.

The most frequent answer to such a request, is the one given me, a few days since, by one of the busiest practitioners of this city. "I am not accustomed to writing," said he. "I should scarcely know what to write." But, I replied, you see a great amount of disease, and know how to treat it successfully. Your conversation in regard to your cases, and indeed, in regard to every practical subject connected with our profession, is instructive and interesting to all who hear you. Why not put your conversation in print?

Every sound practitioner of medicine has, in his private hoards of knowledge some material, which, if contributed to the general stock, would benefit the professional community at large. It is also true that physicians practicing in situations which differ decidedly as it respects the prevalence, or potency of various morbific causes, are better prepared to judge what subjects and observations will prove most interesting and instructive to those situated in similar localities, and under similar circumstances with themselves.

A liberal translation of the motto on the cover of this Journal reads:

"Little doth hidden worth differ from buried sloth."

Many meritorious men in our profession fall within the pertinency of its rebuke.

The restrictions which the editor desires to impose upon his contributors are not many. He hopes that the deductions contained in the essays published in this Journal will stand warranted, at least by the present knowledge of the profession; and that the clinical reports shall represent facts upon whose fidelity practitioners may rely; but responsibility for the truth of either, cannot be extended beyond the pledge of a critical exercise of the editorial privilege of selection.

"*What is truth" in Medicine?* So far as it concerns the relation of facts, occurrences and events capable of being observed with objective certainty, there is no more difficulty on the part of the relator in grasping the truth, than would befal any witness, who undertakes to put upon record his observations of physical phenomena. On such a day, it rained heavily, with terrible thunder and lightning. These are facts, from a positive declaration of which all the world will fail to drive the witness. But if he attempts an interpretation of these phenomena in respect to their causes or effects, he may differ from all other witnesses, and all may fail in arriving at the truth. This is the point where "doctors disagree." While the facts which make up the objective truths are undisputed, the deductions, the inferential or subjective truth differs with the different mental organization of each individual "Ego" whose wisdom is invoked to aid in its correct rendition.

But, for the comfort of those who believe that doctors must of necessity continue to disagree, we are able to say that the medical profession is making such wonderful advances in biology, that, daily, our deductions or subjective truths, are approaching that unification in character, which is obtained by a better comprehension of the interdependence between morbid phenomena and the laws of life. This is certainly a cheering picture; and if ignorant, brutally disposed, and licentious men, holding in utter contempt all the higher aims of civilization, do not exert their irresponsible power to the injury and retardation of all science, our skill will become, more and more, a boon to mankind, until a degree of success has been attained beyond which mortal man is not permitted to reach. This utterance must not be understood to proceed from any political feeling, in the partisan sense of the term.

As a profession, we are not politicians, and stand utterly aloof from their corrupting influence. If they apply to us as patients, although, like the famous Scottish murderer, they may ask for some "sweet oblivious antidote" which shall "purge their stuffed bosoms," and soothe their fretful consciences to sleep; it is our duty to give heed to the applications; for the sufferings, and not the sins of humanity, are the objects of a physician's ministrations.

But those who possess the best opportunities to know, tell us that the present deluge of vice and crime is likely to overtop and hide whatever of moral excellence is yet left to us. Retrogression in science is the inevitable consequence of backsliding in matters of rectitude and morality. When ignorance and wretched incompetency come to fill all the high places, learning and virtue are quickly discredited, and must, perforce, retire to the back ground. Let us as a profession unite our energies, moral and intellectual, to prevent so deplorable an outcome.

Public Health.

It is the intention of the editor to devote a number of pages in each issue of this Journal to the publication of facts, and discussion of topics, connected with public health. Dr. Herrick has given himself a great amount of labor to get up the tables which will be found on the closing pages of this number. If his engagements will permit, he will enter into a further discussion of the questions naturally flowing from so full and important an exhibit of figures, in the September number. In the mean time, I beg that physicians located in every populous community in the South, will forward at least once in two months, information in regard to the sanitary condition of their respective populations, together with the meteorological phenomena, if recorded. By a pretty general compliance with this request, a great mass of facts, valuable to the whole profession, may be accumulated and presented to the public in each issue of the Journal. That these facts may reach to the latest dates, before publication, the last forms will be reserved for matter of the description herein referred to.

It is now a period of attainment in Science, when quarantines should no longer receive countenance from the medical profession. If a city possessing the most recently constructed engines, and appliances for extinguishing fire, should yet forbid its introduction for fear of a conflagration, they would scarcely be more absurd than a medical profession, which boasts that it understands by what means it may "stamp out" epidemic diseases, and still demands State protection against their introduction. The accomplishment of an end, which will relieve commerce of clogs which have descended from barbarous times and countries, will sooner or later reward our researches in regard to the nature of disease producing causes and the most effectual method of averting their further development or of rendering them innocuous.

Combined efforts on the part of our profession, to study prevalent diseases with a direct reference to ascertaining their causes, and the best modes of destroying, or of avoiding these causes, promise no less results than those pictured in the foregoing paragraph. We do not now account for epidemic diseases upon what Professor Houghton terms the "God wills it theory." But we look upon them as being produced by causes which exert the force of, and exhibit the phenomena of, materialities. The conclusion naturally follows, that the Creator, in the optimism of his works, has placed within man's reach other materialities destructive of those which tend to do him injury. The solution of these problems will, at the same time, prove the grandest achievement of human science, and confer the greatest of blessings upon mankind.

NOTICE.

The proprietor of this Journal desires to inform those who have paid subscriptions to the "New Orleans Journal of Medicine and Surgery," extending beyond the date of its suspension, that he is not in any manner responsible for any debts contracted or owed by that journal. He is anxious, however, to secure the co-operation and confidence of all the friends of the old journal, and will exercise towards those who have overpaid their subscriptions, on its lists, the most liberal spirit the circumstances will justify. They are invited to correspond with him on this subject.

PUBLICATIONS RECEIVED.

Flint's Practice. Fourth Edition, carefully revised.
Text-Book of Physiology, with plates. JOHN HUGHES BENNET.
Allingham on Disease of Rectum.
Dental Caries and its causes, with illustrations.
Hand-Book of Medical Electricity. TIBBITS.
Harris on Climate and Fevers.
Facts and Reminiscences of the Medical History of Kentucky. LEWIS ROGERS.
Normal Ovariotomy. ROBERT BATTEY, M. D.
Address of Thomas M. Logan, M. D., President American Med. Association.
Proceedings American Pharmaceutical Association: 1872.
The Medical Record, June 16th, 1873.

NECROLOGICAL.

Died, at his residence in this city, on the 7th of April, 1873, BENJAMIN HART MOSS, M. D. Doctor Moss was born at Orangeburg, South Carolina, in 1817. He graduated at the Medical College of South Carolina in 1839, after having prosecuted his studies in the office of Dr. Bellinger, of Charleston. Dr. Moss gave early promise of his future eminence in the medical profession, by receiving, at time of graduation, the award of a silver cup for the excellency of his thesis.

After having graduated in Charleston, Dr. M. went to Philadelphia where he attended one or two courses of lectures. He then returned to Orangeburg, and soon acquired a large practice. In 1848, he determined to situate himself in a more comprehensive field for the study and practice of a profession which completely enlisted his talents and energies. With this purpose in view, he first visited New York, but, after a short stay, came to New Orleans, and selected it as his permanent home.

Merits like those possessed by the subject of this notice, were not long in commanding the attention of the community in which he had located, and Dr. M. rose progressively to the very front rank of the medical profession of New Orleans. Indeed, at the time his failing health first admonished him that relaxation of labor was a necessity, he was in command of the most lucrative general practice in the city. Several years previous to his death, Dr. Moss suffered a slight attack of right hemiplegia, attended with occasional difficulty in his command of words. Abandonment of his arduous labors and a trip abroad seemed to have effected a cure. For a month or two previous to his fatal attack of paralysis, he suffered occasional vertigo, accompanied by temporary perversions of sensation in his extremities.

Dr. Moss brought to the discharge of his professional duties not only the full, ripe knowledge of a thorough student, but also the unswerving conscientiousness of the blameless christian. If to these we add, that he was always dignified and courteous, and yet modest withal; always the elegant gentleman of the olden times, and yet assuming nothing; always upright and strictly mindful of the rights of others, we can understand how it was that he was so generally beloved both by his patients, and by his contemporaries in a profession which he so highly adorned.

HEALTH OF NEW ORLEANS.

Review for the First Six Months of 1873.

The publication of meteorological observations in connection with mortuary reports, is customary in several of the Northern cities; and, while it is not unreasonable to hope that useful hygienic and therapeutic results may flow from this practice, it is sure to command the attention of medical men. This paper is intended as an experiment, and may, perhaps, be the beginning of a series hereafter to throw some light upon matters of vital importance to our community. The following tables for 1873 have been prepared from daily observations made by the officers of the Board of Health, and from the mortuary record kept at their office. Acknowledgement is due for the privilege of using them, and for the assistance of Dr. Russell, secretary, and Mr. Stathem, clerk of the Board, for material assistance in this compilation.

The meteorological tables for 1872 have been copied from the records kept by Mr. Louis Frigerio, who has kindly placed them at my service. A comparison between the weather phenomena for the two years is thus presented.

Without being restricted to the relations of meteorology and disease, I shall now make some general remarks upon our population, the comparaitve mortality among the white and colored elements for several years, and the most notable diseases which have prevailed during the present year.

The population of New Orleans approximates closely to 200,000, three-fourths being white, and one-fourth colored. In the following table no allowance is made for increase, which is probably very small at the present time. It is proper to state that still-births were included in the mortuary returns until the year 1872, but not for that year; varying from 400 to 460.

Year.	Total Mortality.	Rate per 1000.	Mortality White.	Rate per 1000.	Mortality Colored.	Rate per 1000.	Mortality. Race not stated.
1869	6001	30	3757	25	2092	41.8	152
1870	7391	36.9	4602	30.7	2560	51.2	229
1871	6059	30.3	3782	25.2	2115	42.3	162
1872	6122	30.6	3871	25.8	2143	42.0	108

It is here apparent that the high death-rate which has given our city an unhappy prominence, is greatly attributable to a class of population which forms but a trifling component in most other cities with which our own may here be compared.

POPULATION AND DEATH RATE PER 1000, IN 1871.

	Population.	Death Rate.		Population.	Death Rate.
New York,	942,292	28.6	London,	2,263,872	24.7
Philadelphia,	674,022	22.9	Liverpool,	494,649	35.1
Brooklyn,	396,099	25.9	Glasgow,	489,227	32.7
St. Louis,	310,864	16.9	Manchester,	351,488	32.2
Chicago,	298,997	23.3	Birmingham,	344,980	24.9
Baltimore,	267,354	2.67	Dublin,	310,565	26.2
Boston,	250,526	23.5	Edinburgh,	201,728	26.9
Cincinnati,	216,239	23.3	Paris,	1,825,274	27.4
New Orleans,	191,418	29.2	Berlin,	828,003	38.9
San Francisco,	149,473	21.5	Vienna,	632,000	35.7
Washington,	109,199	14.6	Brussels,	185,000	32.2
Louisville,	100,753	23.5	Rome,	247,497	30.7
Detroit,	79,577	22.2	Turin,	211,644	33.4
Richmond,	51,038	30.4	Naples,	448,743	39.
New Haven,	50,840	20.5	Amsterdam,	263,204	34.
Charleston,	48,956	34.1	Rotterdam,	111,403	46.
Memphis,	40,226	46.1			
Mobile,	32,034	34.7			
Savannah,	28,235	36.6			
Galveston,	13,818	29.9	Bombay,	646,636	24.8
Vicksburg,	12,443	41.8	Calcutta,	430,000	24.
Havana,	200,000	45.8	Madras,	395,450	32.9
Montreal,	117,865	36.9			

Smallpox, which has been so prevalent, but which is now on the decline, reappeared about the middle of October last, after an interval of two or three months during the summer. It was, however, accountable for only 29 deaths in 1872. Its reappearance was brought about by steamboats from the upper cities on our Western waters, and thus we have continued to receive fresh supplies of infection. The energetic means used by the Board of Health long prevented the formation of local foci of infection, but repeated invasion gradually established the disease, and it spread throughout the city. During the cold weather, most cases were removed, as soon as discovered, to a special hospital, and disinfection of premises was thoroughly carried out where-ever cases occurred. As the season has advanced with elevated temperature, removal has been less rigidly enforced. Thus far the Board of Health possess ample powers at their discretion; but as regards enforced vaccination, their power extends only to the public schools. Vaccination is made a condition of admission, and pupils have to submit to medical inspection to verify their security. The inspection showed a large proportion of children, during the last annual visitation of the schools by the Sanitary Inspectors, to be with inadequate protection or with none at all, and it was especially the case among the colored children. This fact is attributable often to the neglect of parents, and more frequently to their opposition to vaccination, than would be expected by ony one without actual observation among our more ignorant classes. It has been rejected even in households where smallpox has already seized members.

As might be expected, protective measures are far less generally practiced among the colored population than among the white, and the following tables show the natural consequence. More than four-fifths of the mortality from smallpox falls upon the colored element, though they constitute but one-fourth of our population.

The present decline of this disease is attributable less to exhaustion of subjects, than to elevation of temperature, which leads to free opening of doors and windows, and the dissipation of infection. On the same reasoning our mild climate gives us a great advantage over Northern cities, which has been exemplified in the present spread of smallpox throughout the country.

Certainly our smaller affliction with this scourge cannot be attributed to more general vaccination.

The Epizoöty, in its grand march, reached New Orleans in the latter part of November, 1872, and disappeared in January. The prevailing type of the distemper is believed to have been more moderate here than at the North, attributable in a great degree to our milder climate. Not long after this equine catarrh, the influenza made its appearance, and was scarcely less universally diffused in its appropriate sphere than its precursor had been. There was a popular impression that both affections were the same disease, and people remarked that they had *caught the horse distemper.*

There are not wanting positive examples of the susceptibility of certain animals, in common with mankind, to infectious diseases. Cattle, sheep, and even horses, are liable to variolous infection; and glanders is transmissible both to the equine genus and to mankind. To these may be added hydrophobia, and charbon with its congener, malignant pustule. This evidence, in connection with similarity of symptoms in both cases, establishes a probability that the same atmospheric cause was in continued operation. Whether this was the same agency which produces the ordinary epidemics of influenza, and, if the same, why a particular class of domestic animals should then, for the first time, become susceptible, are questions on which I forbear to speculate. Numerous and continued observations may hereafter afford some light, and these remarks are intended chiefly as hints for future investigations.

On observing the mortuary tables, it will be noticed that complaints of a choleraic character exhibited fatal results in the beginning of March. The violence of many of these cases, running in a few hours, through vomiting, purging, cramps and cold sweats, into collapse and death, naturally excited a popular apprehension that this was a visitation of true cholera. The Board of Health immediately acted on this presumption, having determined to use all the means in their power in the interest of public safety, and believing that no harm would ensue in the exercise of thorough sanitary measures. Accordingly, care was taken to disinfect the discharges, and all substances defiled by them. As in case of dangerous and infectious diseases, physicians have been required to report these cases; and thus one important result has been attained, aside from the employment of preventive measures, namely the discovery of the fact that this outbreak, in respect of fatality, falls short of any known visitation of the malady known as Asiatic cholera. The general verdict is, that the fatal cases have been neglected either altogether or in their early stage, and that all cases have been amenable to early and judicious treatment.

Another argument against the supposition of Asiatic cholera, is the mode of invasion. The natural history of this disease is settled as to its migratory habit, starting from its native seat in the valley of the Ganges, and its gradual progress along important routes of human intercourse. Now, we have no evidence that the present march, in the westward direction, which it has always taken to the American continent, has reached nearer to us than central Europe, where it seems to have paused for a considerable time. Moreover, this malady has not exhibited the tendency to spread over the city from foci of infection, which is observable of true cholera as of all the recognized infectious diseases. Its rapid subsidence since June 1st, upon the establishment of our standard summer temperature, is contrary to the history of cholera invasions.

While we exclude the idea of Asiatic cholera, there are certain points of distinction from our ordinary cholera morbus, which the present malady closely resembles. The most remarkable is the violence and rapid fatality of a certain, though small proportion of cases; another is its appearance somewhat earlier in the season than usual; another still, the remarkable prevalence of intestinal fluxes, of different forms, the majority of our population probably having been affected in some form or degree.

The idea that so extensive a disturbance of the general health can be attributable to exposure, to inclemencies of weather, or dietetic imprudencies, is obviously untenable.

Comparison between the tables of last year and the present, shows a reduced temperature for 1873 since March 1st, and also a generally diminished daily range until March 23d. For the ten weeks intervening between this date and June 1st, the mean daily range is calculated at 15.1° in 1872 and 15.7° in 1873. This is the period of 1873 marked by the greatest mortality from intestinal fluxes, particularly those of a choleraic character. It will be observed that increase and diminution of this class of mortality, generally follow by a week or two the corresponding fluctuations in mean daily range; but the rule is neither invariably nor proportionately carried out. At the same time it is apparent that the difference in range of temperature between the two years is trifling for these ten weeks, and the preponderance on one side less than it is on the other for the earlier weeks of the two years. Still we see that gradual elevation of temperature to a mean of 80° and upwards, with reduction of mean daily range, is followed by rapid subsidence of choleraic disorders.

Whatever importance, if any, may be attributed to this apparent relation, in the light of cause and effect, it is evident that other factors enter into the result. The nature of the factors must be greatly speculative. It is believed by one of my medical friends that paludal miasms are largely causative of these disorders, and that he has obtained good results from the frequent use of quinine. It does not appear, however, that there has lately been any unusual prevalence of the ordinary miasmatic diseases.

The researches of Prof. W. Hutson Ford confirm the notion of Schönbein, that excess of ozone in the atmosphere causes a prevalence of respiratory catarrhal complaints; and it is his belief, from the prevailing diseases, that such excess has existed during the greater part of the year thus far. Unfortunately we have no satisfactory means of determining quantitatively atmospheric ozone, and I am not aware that any observations have been made here lately to this end. Recent analyses of air from various localities in the city by Dr. A. W. Perry, chemist to the Board of Health, have shown an unusually small proportion of ammoniacal constituents; and this might be attributable to the excessive rains which have washed the atmosphere and absorbed its ammonia, without invoking the agency of ozone to decompose these products of organic decomposition. This prevalent instrumentality would reduce the expenditure of ozone, and thereby contribute to its abundance.

By others it is supposed that there is some connection between our choleraic disorders and the catarrhal affections which seized first the horses and mules, and afterwards human beings. Although the term *catarrh* is restricted by English and American writers chifly to a morbid flux from the respiratory mucous surfaces, there seems to me no good reason why we should not, like Continental writers, extend its use to discharges morbid in character or quantity from all mucous surfaces. Indeed Flint, in his work on Practice, remarks that German authors regard sporadic cholera as a kind of gastro-intestinal catarrh. Whether we speculate or not upon the nature of the epidemic cause or causes of our late epizoöty and influenza, the inquiry is suggested, in extending their operation to the alimentary mucous membrane, why one tract should exclusively be affected at one time and the other tract at another.

Besides, an examination of the late mortuary report from the principal Northern cities shows that intestinal fluxes have not been unusually prevalent, as should be the case on the supposition of a single cause constantly operating to produce various forms of catarrh. But it is noteworthy that, at the present time (June 24th,) reports are coming from Memphis, Nashville and Cincinnati, of the prevalence of "cholera." At Memphis and Nashville it appears to be much more virulent than it was here eight weeks ago, and, as here, to fall with greatest severity on the colored population.

A comparison of the white and colored populations shows that the mortality from sporadic cholera has been nearly equal for the two, making the ratio according to numbers about as one to three. It appears also that meningitis and pneumonia have had more than their numerical share of victims among the colored element. Probably this excessive mortality is due less to a greater liability to these diseases than to unfavorable circumstances and conditions for successful treatment, growing out ot their poverty, ignorance and improvidence. In case of smallpox, liability to the disease must be regarded as the point of chief importance. In conclusion, I would remark that my chief object in this paper is to gather into tangible form certain particulars, to offer a few observations rather by way of suggestion, and in general, to reserve conclusions for further examination under the light of accumulated facts. Candor obliges me to avow that the accompanying tables are far from elucidating to my judgment our sanitary condition in the last six months. On the determination of the unknown quantities entering into this problem of public health depends its solution, and it is probably too much to expect that satisfactory results will soon be reached.

TABLE I.

Day of Month.	January, 1872.					February, 1872.					March, 1872.					Day of Month.
	Daily Temperature.					Daily Temperature.					Daily Temperature.					
	Maximum.	Minimum.	Range.	Barometer.	Rain Fall.	Maximum.	Minimum.	Range.	Barometer.	Rain Fall.	Maximum.	Minimum.	Range.	Barometer.	Rain Fall.	
1	76	64	12	30.15.		47	31	16	29.85.	.90	44	44	0	29.89.	.66	1
2	65	57	8	30.05.		50	41	9	29 97.		55	36	19	30.03.		2
3	72	57	15	30 05.	.025	51	33	18	30.05.		65	44	21	29.98		3
4	60	45	15	30.18.		63	38	25	30.	.03	66	46	20	30.03.		4
5	61	42	19	30.05.		65	48	17	29.85.	1.97	70	50	20	30.09.		5
6	60	46	14	29.90.	1.15	60	51	9	30.		71	50	19	30.10.		6
7	60	46	14	30.10.	.03	47	40	7	30.07.	.14	74	51	23	30.02.		7
8	48	42	6	30.20.		55	42	13	29.93.		74	59	15	29.82.		8
9	48	39	9	30.25.		58	44	14	29.98.		72	60	12	29.63.	1.64	9
10	45	37	8	30.23.		65	43	22	29.80.		71	46	25	29.86.	.10	10
11	53	34	19	30.12.		67	44	23	30 03.	.24	60	47	13	30.05.		11
12	58	36	22	30.07.		63	45	18	29.85.		58	40	18	30.23		12
13	62	43	19	30.06.		68	47	21	30.12.		68	43	15	30.08.		13
14	54	47	17	30.12.		55	40	15	30.13.		73	52	21	80.05.		14
15	53	32	21	30.22.		59	38	21	29.95.		65	61	4	30.07.	.02	15
16	54	37	17	30.13.		68	43	25	29.72.	.81	71	56	15	29.92.		16
17	53	36	17	30.17.		64	47	17	29.87.		71	54	17	30.	.16	17
18	57	40	17	30.		68	48	20	29.93.	.40	60	43	17	30.12.		18
19	52	50	2	29.85.	1.18	59	44	15	30.		66	46	20	30.10.		19
20	55	38	17	30.		66	43	23	30.03.		71	50	21	30.15.		20
21	53	34	19	30.10.		59	48	11	29.88.	.70	58	44	14	30.22.		21
22	54	31	23	30.12.		57	43	14	30.		70	43	27	29.90.		22
23	54	35	19	29.95.		58	41	17	29.85.		64	48	16	30.07.	.20	23
24	44	31	13	30.25.	snow at night.	73	46	27	29.73.	.63	60	49	11	30.07.	1.825	24
25	34	27	7	30.03.	1.35	75	48	27	30.		65	57	8	29.82.	4.21	25
26	43	29	14	29.85.	.36	71	50	21	30.03.		65	57	8	29.95.	.90	26
27	45	33	12	29.65.	.60	70	55	15	29.95.		64	48	16	30.10.		27
28	47	33	14	30.10.		72	60	8	29.67.	.19	69	52	17	30.03.		28
29	35	26	9	30.33.		69	49	20	29.83.		70	51	19	30.		29
30	37	26	11	30.40.							72	55	17	29.85.		30
31	37	29	8	30.22.	.52						80	64	16	29.88.	.010	31
			av'rage 14.1		Total 5.215			Average 17.5		Total 6.01			av'rage 16.1		Total 9.725	

TABLE I.--Continued.

Day of Month.	April, 1872. Daily Temperature. Maximum.	Minimum.	Range.	Barometer.	Rain Fall.	May, 1872. Daily Temperature. Maximum.	Minimum.	Range.	Barometer.	Rain Fall.	June, 1672. Daily Temperature. Maximum.	Minimum.	Range.	Barometer.	Rain Fall.	Day of Month.
1	68	58	10	30.10.		80	71	9	30.	.34	89	72	17	30.08.		1
2	71	55	16	30.08.		77	67	10	30.18.		91	75	16	30.09.		2
3	67	55	12	29.90.	3.80	76	58	18	30.17.		88	75	13	30.03.		3
4	68	60	8	29.98.		78	57	21	30.20.		90	75	15	30.05.		4
5	70	60	10	29.88.		81	60	21	30.18,		90	76	14	30.02.	1.04	5
6	78	64	14	29.70.	1.45	80	60	20	30.20.		89	74	15	29 93.	.395	6
7	82	67	15	29.60.		81	63	18	30.16.		91	75	16	30.		7
8	79	68	11	29.65.		82	62	20	30.15.		91	77	14	29.98.		8
9	81	63	18	30.		80	65	15	30.05.		90	75	15	30.		9
10	73	57	16	29.62.		82	66	16	30.03.		83	75	8	30.	.90	10
11	76	53	23	30.05.		81	68	13	29.95.	.04	85	73	12	30.10	.73	11
12	79	66	13	30.10.		82	68	14	29.97.		90	72	18	30.11.		12
13	82	68	14	30.22.	.005	84	68	16	29.95.		90	74	16	30.04.	.005	13
14	82	68	14	30.03.		83	67	16	29.93.		90	76	14	29.95.		14
15	82	67	15	30.10.		85	70	15	30.08.		86	72	14	29.88.	.26	15
16	80	66	14	30.10.		84	68	16	30.02.		87	73	14	29.94.		16
17	81	64	17	30.02.		88	77	11	29.85		89	71	18	30.10.		17
18	82	68	14	29.92.		87	74	13	29.72.		89	75	14	30.07.		18
19	84	69	15	29.87.	.085	79	64	15	29.98.		89	77	12	30.		19
20	83	68	15	29.90.		87	64	23	30.03.		88	71	17	30.06.	.185	20
21	84	69	15	30.	2.95	88	74	14	30.		85	71	14	30.03.	.56	21
22	71	64	7	30.12.	1.16	86	72	14	29.93.	1.20	84	73	11	29.98.	.37	22
33	70	53	15	30.		86	70	16	29.93.	.20	84	73	11	29.93	1.06	23
24	76	51	25	30.		81	71	10	29.92.	2.06	87	73	14	29.90.	.055	24
25	81	60	21	30.10.		81	66	15	30.	.10	88	73	15	30.02.		25
26	79	63	16	30.07.		86	71	15	30.06.	.025	89	74	15	30.03.		26
27	81	62	19	30.03.		88	71	17	30.07.		89	75	14	30.10.		27
28	82	64	18	30.		86	72	14	30.02.		90	75	15	30.16.		28
29	81	65	16	30.		87	74	13	30.05.		87	75	12	30.13.	.04	29
30	84	66	18	30.		87	75	12	30.12.		87	75	12	30 10.	.18	30
31						89	74	15	30.10							31
			av'rage 15.1		Total 6.795			Average 15.6		Total 3.965			av'rage 14.2		Total 5.780	

TABLE II.

DAY OF MONTH.	JANUARY, 1873. Daily Temperature. Maximum.	Minimum.	Range.	Barometer.	Humidity.	RAIN FALL.	FEBRUARY, 1873. Daily Temperature. Maximum.	Minimum.	Range.	Barometer.	Humidity.	Rain Fall.	MARCH, 1873. Daily Temperature. Maximum.	Minimum.	Range.	Barometer.	Humidity.	Rain Fall.	DAY OF MONTH.
1	65	55	10	30.09.	86		60½	43	17½	30.21.	78		68½	53	15½	30.09.	79	.20	1
2	66	61	5	29.86.	82	1.05	60	47	13	30.31.	69		56	45	11	30.32.	75		2
3	65	55	10	30.05.	76		70	50	20	30 15.	82		55½	41	14½	30.45.	63		3
4	66	52	14	29.84	93	1.37	72	55	17	30.14.	77		56½	41½	15	30.55.	59		4
5	57	45	12	30.03.	70		72	64½	7½	30.15.	84	.25	60½	40	20½	30.59.	69		5
6	50	37	13	30.27.	77		70	49	21	30.05.	78	.40	65	45	20	30.53.	73		6
7	52	40	12	30.17.	87		68½	44	24½	30.03.	73		73½	53	20½	30.39.	75		7
8	58	47	11	30.14.	83		65	54½	10½	30.15.	66		69	59	10	30.22.	65	.25	8
9	50	44	6	30 30.	66		58	46	12	30.41.	59		68½	61	7½	30.08.	91	1.15	9
10	51	40	11	30.43.	61		63½	44	19½	30.21.	78		73	55	18	30.07.	83		10
11	56	40	16	30.52.	78		70	56	14	29.81.	87	.70	77½	61½	16	30.06.	78	.55	11
12	61	47	14	30.43.	78		62½	50	12½	29.80.	65		65	55	10	30.14.	79		12
13	64	47	17	30.25.	81		68	44	24	30.04.	77		66	49½	16½	30.30.	65		13
14	65	55	10	30.06.	86		68	53	15	30·09.	85	.60	72½	51	21½	31. 30.	74		14
15	71	62	9	29 86.	88	2.01	75	60	15	29.91.	87	.10	77½	58½	19	25.	75		15
16	58	45	13	30.01.	75		67	53½	13½	30.02.	70		70	62	8	30.	82		16
17	48½	35	13½	30.17.	63		67	53	14	30.03.	77		73	59	14	18. 31.	77	.20	17
18	44	25	19	30.26.	57		72	57	15	30.07.	89	.15	74	62	12	30.11.	77	.32	18
19	46½	28	13½	30.26.	67		77	66	11	30.13.	83		71	61½	9½	29.95.	92	.70	19
20	63½	40	23½	30.08.	79	.01	79	66½	12½	29.97.	79		69	59½	9½	30.01.	74		20
21	62½	51	11½	29.93.	83		68	55	13	29.90.	63		66½	50	16½	30.11.	53		21
22	64½	55	9½	29.84.	85		64½	45	19½	30.01.	75		75½	53	22½	30.14.	67	.01	22
23	59	44	15	29.91.	55		58	45	13	30.12.	55		69	59	10	29.94.	88	1.10	23
24	50	32	18	30.16.	62		63	44	19	30.14.	65		80	60	20	29.78.	79		24
25	57	34½	22½	30.03.	76	.11	75	57	18	30.02.			80	43	37	29.[illegible]9.	68		25
26	56	50	6	29.90.	87	.35	81	68	13	29.88.	80		54½	38	16½	30.22.	65		26
27	51	41	10	29·86.	81		65	50	15	30.17.	46		65	43	22	30.13.	71	.45	27
28	48½	43	5½	30.05.	82	.15	62	45	17	30.25.	52		70	56	14	29.98.	87	.01	28
29	38	29	9	30.16.	71								73	56	17	30.10.	51		29
30	47	31	16	30.17	73								77	55	22	29,98.	82		30
31	53	38	15	30.22.	79								81½	66	15½	29.93.	74		31
			Average 12·7			Total 5.05			Average 15.6			Total 2.20			Average 19.4			Total 5.54	

TABLE II.--Continued.

	APRIL 1873.						MAY, 1873.						JUNE, 1873.						
	Daily Temperature.						Daily Temperature.						Daily Temperature.						
DAY OF MONTH.	Maximum.	Minimum.	Range.	Barometer.	Humidity.	RAIN FALL.	Maximum.	Minimum.	Range.	Barometer.	Humidity.	Rain Fall.	Maximum.	Minimum.	Range.	Barometer.	Humidity.	Rain Fall.	DAY OF MONTH.
1	75	65	10	29.90.	86	.20	78	65	13	29.82.	90	2.15	86	73	13	30.03.	84		1
2	77	60	17	30.02.	61		74	61	13	29.90.	61		86	72	14	30.03.	81		2
3	80	60	20	30.02.	82		78	57	21	29 95.	61		89	73	16	29.95.	75		3
4	86	70	16	30.06	76		72	63	9	29.98.	74	.05	87	74	13	29.92.	73		4
5	84	73	11	30.10.	77		74	61	13	29.91.	87	8.00	86	75½	10½	29.93.	82	.91	5
6	84	72	12	30 06.	76		81	63	18	29.78.	83		86	72½	13½	29.98.	85	.02	6
7	83	70	13	29.93.	75		80	64	16	29.84.	74		88	74	14	30.03.	81	.43	7
8	80	50	30	29.87.	64	.50	85	66	19	29.91.	67		88	74½	13½	29.97.	84	.30	8
9	62	45	17	30 17.	60		80	68	12	29.92.	88	.20	88	75	13	29.95.	88	.80	9
10	71	50	21	30 22.	62		81	68	13	29.96.	77		85½	74	11½	29.98.	87	.75	10
11	75	55	20	30.15.	69		81	67	14	30.02.	62		88	74	14	30.04.	81	.08	11
12	72	57	15	30.14.	54		81	65	1n	30.06.	64		91	75	16	30.03.	78	.55	12
13	73	56	17	30.09.	68		74	62	12	29.91.	88	1.40	87	76	I1	29.96.	81		13
14	67	61	6	30.	87	53	80	63	17	29.72.	89	.05	91	77	14	29.89.	74		14
15	64	56	8	29 99.	72	.15	85	72	13	29.68.	77		90	77½	12½	29.97.	87	1.72	15
16	71	49	22	30.03.	54		87	71	16	29.87.	65		88	73½	14½	30.	82	.20	16
17	68	50	13	29.99.	56		88	70	18	29.92.	75		86	76½	9½	30.	79	.20	17
18	72	49	23	29.99.	60		88	74	14	29.88.	80	1.90	87½	73½	14	29.96.	82	.08	18
19	76	58	18	30.05.	72		79	69	10	29.88.	90	.75	89½	83	16½	30.06.	82	.02	19
20	76	58	18	30.07.	72		83	69	14	29.91.	92	2.60	90½	77½	13	31.11.	74		20
21	82	60	22	30.01.	63		82	69	13	29.92.	89	.01							21
22	81	62	19	29.84	68		87	72	15	29.97.	75								22
23	30	64	16	29.87.	66		86	74	12	29.99.	79								22
24	66	60	6	30.02.	69		88	73	15	29.92.	71								23
25	67	55	12	30.12.	56		87	73	14	29.90.	80								24
26	73	54	19	30.09.	60		83	73	10	29.91.	77	.01							25
27	77	61	16	30.04	80		87	69	18	29.94.	79	2.60							26
28	84	67	17	29 93	76		82	68	14	29.93.	80	.45							27
29	83	72	11	29 88.	77		86	70	16	29.94.	87	.85							23
30	86	73	13	29.84	73		86	74	12	29.96.	82	.85							29
31							84	73	11	29.99.	83								30
			Average 16.1			Total 1.38			Average 14.2			Total 21.87							31

TABLE III.

MORTALITY FOR WEEK ENDING:	Small Pox.		Meningitis.		Cholera Sporadica and Cholera Morbus.		Cholera Infantum.		Diarrhœa & Dysentery.		All Intestinal Disorders.		Pneumonia.		Under 2 Years.		Total Mortality.		NOT STATED.
	White.	Colored.	White.	Colored.	White.	Colored.	White.	Colored.	White.	Colored.	White.	Colored.	White.	Colored.	White.	Colored.	White.	Colored.	
January 5	2	10	0	1	0	0	0	0	3	0	4	1	7	4	13	11	56	40	1
January 12	3	5	1	1	0	0	0	0	5	2	7	3	12	3	16	10	77	45	0
January 19	2	9	1	0	0	0	1	0	3	1	6	2	5	1	12	6	80	44	1
January 26	2	15	3	2	0	0	0	0	1	1	4	1	8	3	25	13	102	62	0
February 2	1	14	3	2	0	0	0	0	2	0	2	2	7	4	13	12	73	58	3
February 9	1	12	1	2	1	0	0	0	6	1	8	2	6	3	16	12	73	57	1
February 16	4	12	2	5	1	0	0	0	4	0	7	2	6	3	17	15	80	57	2
February 23	4	24	6	1	0	0	0	0	4	0	6	0	10	7	18	14	86	60	0
March 2	1	21	7	0	0	2	0	0	5	3	7	9	9	4	16	13	73	65	2
March 9	5	19	4	5	2	5	0	0	4	1	8	9	7	7	18	21	91	92	1
March 16	2	15	2	1	0	2	0	0	4	2	8	5	6	4	20	12	74	59	0
March 23	2	20	6	2	0	0	1	2	1	0	5	3	6	4	14	15	81	63	1
March 30	3	13	1	2	1	1	0	0	4	2	6	6	2	1	12	15	77	61	3
April 6	6	11	6	4	6	5	3	0	1	2	12	7	3	5	22	12	86	61	4
April 13	2	18	0	2	3	9	0	0	2	0	5	10	3	1	16	13	62	56	4
April 20	5	9	7	0	11	9	5	1	5	3	27	16	0	5	26	13	97	56	2
April 27	3	9	1	1	13	8	5	3	6	5	29	17	8	3	35	17	96	59	7
May 4	2	12	3	2	17	21	9	1	7	3	38	26	3	2	44	29	112	79	2
May 11	6	13	5	0	8	9	4	1	9	3	21	16	3	0	48	17	132	69	0
May 18	6	8	4	1	20	9	9	3	11	5	46	18	5	5	44	24	123	62	4
May 25	1	13	4	1	15	15	9	3	6	2	33	24	5	4	42	20	111	77	2
June 1	3	9	4	1	13	8	5	4	4	3	28	18	1	2	28	26	90	68	0
June 8	5	9	2	0	2	5	4	1	3	4	11	16	3	0	21	20	74	63	4
June 15	0	7	1	3	1	4	2	1	4	1	19	11	1	2	31	26	94	57	0
June 22	2	7	5	2	3	2	3	1	2	0	10	4	0	0	30	22	80	51	5
June 29	2	3	0	0	0	1	2	1	3	4	9	6	2	7	25	21	84	49	1
Total	75	317	79	41	117	114	62	22	109	48	366	234	128	84	622	429	2264	1570	50

TABLE IV.

METEOROLOGY AND MORTALITY COMPARED.

1873 Week ending	Mean temperature.	Mean daily range.	Mean humidity.	DEATH CAUSES, Small Pox,	Meningitis.	Cholera Sporadica.	Cholera Infantum.	Diarrhœa & Dysentery	All Intestinal Diseases	Pneumonia.	Mean daily range for 1872.	Under 2 Years.	Total Mortality
5 days													
January 5...........	58.7°	10.2°	81.4	12	1	0	0	3	5	11	13.8	24	97
Jaunary 12...........	48°	11.8	75.7	8	2	0	0	7	10	15	13 1	26	122
January 19...........	49.6	14.3	73.9	11	1	0	1	4	8	6	15.7	18	125
January 26...........	51.4	15.1	75.3	17	5	0	0	2	5	11	16.	33	164
February 2...........	45	12.3	76.9	15	5	0	0	2	4	11	11.3	25	134
February 9...........	59.9	16.1	74,1	13	3	1	0	7	10	9	14.7	28	131
February 16...........	59.6	16.2	78.4	16	7	1	0	4	9	9	20.7	33	139
February 23...........	62.5	14.	74.4	28	7	0	0	4	6	17	16.7	32	146
March 2	59.5	15.5	66.2	23	7	2	0	8	16	13	17.1	29	140
March 9.............	56.4	15-4	70.7	24	9	7	0	5	17	14	18.	39	184
March 16.............	63.9	15.6	76.6	17	3	2	0	6	13	10	15.9	32	133
March 23.............	64.4	13.4	76.1	22	8	0	3	1	8	10	18.9	29	145
March 30.............	67.9	21.2	71-9	16	3	2	0	6	12	3	13.7	27	141
April 6...............	73.8	14.5	76.	17	10	11	3	3	19	8	12.3	34	151
April 13...............	64.2	19.	64.6	20	2	12	0	2	15	4	15.7	29	122
April 20...............	62.5	16.1	67.6	14	7	20	6	8	43	5	14.9	39	155
April 27...............	67.3	15.7	66.	12	2	21	8	11	46	11	16.9	52	162
May 4...............	72.4	13.9	73.1	14	5	38	10	10	64	5	15.7	72	193
May 11...............	72.8	15.	76.9	19	5	17	5	12	37	3	17.6	65	201
May 18...............	75.7	15.1	76.9	14	5	29	12	16	64	10	14.4	68	189
May 25...............	77.9	13.3	82.3	14	5	30	12	8	57	9	15.3	62	190
June 1...............	78.1	13.4	81.7	12	5	21	9	7	46	3	14.7	54	158
June 8...............	80.4	13.4	80.1	14	2	7	5	7	27	3	14.7	41	141
June 15...............	82.1	13.1	82.3	7	4	5	3	5	30	3	13.9	57	151
June 22...............	.82	14.4	77.9	9	7	5	4	2	14	0	14.3	52	136
June 29...............	82.4	12.1	72.6	5	0	1	3	7	15	9	13.7	46	134
Total,				392	120	232	84	157	600	212		1051	3884

New Orleans, June 30, 1873. S. S. HERRICK, M. D.,

THE

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MEDICAL AND SURGICAL JOURNAL.

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ORIGINAL COMMUNICATIONS.

ARTICLE I. *Type and Specific Character of true Yellow Fever, as shown by Observations taken with the assistance of the Thermometer and second-hand Watch.* By J. C. FAGET, M. D., member of the "Société Médicale d'Observation."

"Nil sub sole novum."—SALOMON.

I.

PRELIMINARY REMARKS.

"Though the subject of tropical fevers is too little known to warrant decided opinions on many points, yet the true yellow fever, or hæmagastric pestilence, is now so clearly stamped with characters so peculiarly its own, that it takes its place as a *specific* fever of a *continuous* * * * type."—*Aitken*, 439, *vol.* 1.

The main object of this article is to prove that true yellow fever is a fever of a *continuous* type, and that it takes its place as a *specific* fever, distinct from all other fevers, and is especially to be distinguished from the *malarial* species. These two points have been settled, beyond any doubt, by the above-named English author; but it will prove beneficial, in our opinion, to strengthen his arguments with the more recent data furnished by investigations with the thermometer and independent second-hand watch.

It follows that our object is to investigate, with the thermometer and time piece, the following questions: 1st. Is true yellow fever, a fever of a *continuous* type? 2d. Is it to be pronounced a *specific* fever, *i. e.*, a fever originating from a *special* poison,—a *specific* morbific principle to be compared with that of variola, cholera, or of any other well defined *morbid species*.

We are living on the very ground where the first question may be solved, the city of New Orleans being, though a large city, a real type of a swampy location; and, regardless of a few respectable disputants, all sorts of swamp fevers combine themselves with other diseases in our unfortunate city, so that *paroxysms* are obtained through malarial influence.

"The study of the habitual toxic effects of, and remedies for swamp poison, is the life long task of the physician practising in the Southern or Western States of the Union. No other morbific cause is so *omnipresent*, so constantly operative, either singly or combining itself with other blood poisons."—Prof. Bemiss, *N. O. Med. and Surg. Journal*, July, 1873, p. 27.

It is plain that, in the event that all our cases of yellow fever prove to be cases of *continuous* fever, when observed in such conditions as we have described, yellow fever observed on any other ground shall always prove to be a fever of a *continuous* type.

In the processes of all fevers we have mainly to consider two elements: 1st, the increase of the temperature of the blood; 2d, the increase of the beatings of the heart, per minute. The thermometer and watch will furnish exact data concerning these two points.

Professor Wunderlich certainly went too far, when he wrote, in the Introduction to his Treatise on Medical Thermometry, that "the variations of temperature, in diseases, coincide with other functional disturbances, but none of these can be determined upon and measured so accurately as the temperature." We know very well that in the course of a fever, the second-hand watch gives as precise and accurate information of the condition of the pulse as the, thermometer furnishes concerning the temperature.

Dr. Hirtz, a professor in Strasburg, followed the steps of the German professor, and went so far as to say that "the condition of the pulse, considered so far, as the most important sign of fever, does not by itself furnish any valuable information." (Page 748, vol. xiv. of the New French Dictionary of Medicine and Surgery, 1871.)

We shall see, on the contrary, that in yellow fever, the character of the pulse is more interesting to the physician than the study of the temperature.

The two factors of the fever having been measured and counted twice daily with the thermometer and watch, and the exact numbers accurately recorded, these numbers may be very advantageously figured by *lines*, for it is easier to follow a line on the paper than to calculate numbers; the meaning of the figure is more easily understood. We shall make use of *tableaux of lines* in order to follow the description of the process of the fever, in the history of 38 cases which we have gathered from the epidemic of 1870, through the kind assistance of several confreres.

It does not suffice, however, when studying a fever, to make use of instruments even with the greatest possible care, so as to obtain the most precise results; *before all*, we must be satisfied, beyond any doubt, that we have to deal with *that particular fever*, and no other. Epidemics are not always simple; in my opinion, the four or five great epidemics of yellow fever in New Orleans, from 1853 to 1873, were complicated with *malarial hæmatemesic fevers;* hence all our difficulties. I think we have some means of getting rid of them.

In the very beginning of our yellow fever epidemics, *separate groups* of patients may be observed, especially on the Levee, and in the neighborhood of our port, where *foreigners, new-comers*, are to be found in large numbers. The first cases to be observed at the Charity Hospital, French Asylum, &c., are usually furnished from these sources, where we have observed the disease, and where it can be thoroughly studied. In such groups a number of poor immigrants are to be found, who have landed a day or two previous, from the same ship; suddenly taken with violent fever, with supra-orbital pain and rachialgia, such symptoms being always present in the first stage of yellow fever. These patients very soon offer the "*general assemblage* and *collection of symptoms*" (Aitken, p. 439) which are considered by all physicians as the characteristic signs—the pathognomonic collective signs of yellow fever. To exhibit the condition of the pulse and temperature in such patients, in similar circumstances, is certainly exhibiting them in patients laboring under yellow fever. In the aggregate number of patients, some few cases will undoubtedly be diagnosed as yellow fever cases, through some mistake; but the great majority of cases observed will certainly belong to the genuine species; so that we may have all confidence in the average number of observations. Let us review, according to such data, the epidemic of 1870.

II.

ANALYTICAL STUDY OF THE LINES INDICATING THE TEMPERATURE AND PULSE, AS SHOWN BY THE 38 CASES OBSERVED DURING THE EPIDEMIC OF 1870.

The yellow fever epidemic of the year 1870 in New Orleans, a small epidemic if compared with many others, began in the month of August, in the neighborhood of the port, as usual, and in that instance in the French part of the city. The disease only spread within a very short radius from around its starting point; it reached its utmost intensity in September, and came to an end in November. Our 38 tableaux of lines are distributed as follows: 34 in September, 3 in October, and 1 in November.

During that lapse of time, the meteorological condition, and the local changes in our city did not present anything unusual: Average temperature 80 to 90, F., atmosphere usually very damp and calm. The warmest days have been chosen, as usual, as the time when the streets should be dug, and railway tracks laid down for street cars; filthy and stagnant waters everywhere, containing animal and vegetable matters, &c.,

Our observations have been taken in the very epidemic centres, or from patients living there when taken ill; all such persons had recently landed in the city, coming from different parts of Europe, and were mostly French and Italians. The diagnosis of the disease can hardly be questioned in such cases, especially when confirmed by the process of the disease, the general contour of the symptoms and their successive evolution.

Of course, throughout the yellow fever epidemic, especially in the month of September, the *malarial hemorrhagic* fevers, even of the *hæmatemesic* variety have been observed; we have not to speak of such fevers in the present article.

Our 38 tableaux of cases have been furnished as follows: 7 by Prof. Bemiss, all from the Charity Hospital, thermometer in axilla; 16 by Dr. Touatre, physician to the French Asylum, some from the asylum, the rest from the city; 3 by Dr Layton, and 12 by myself; these last 15, from the very focus of the epidemic. Doctors Layton, Touatre and myself took the temperature in the patient's mouth, placing the thermometer between the gums and cheek.

On examining all our tableaux collectively, the striking feature is that they all show a graphic indication of a fever of the *continuous* type, hardly any exception being observed; the fever shows only *one* paroxysm, rapidly obtaining its highest point, to decline immediately, and then slowly returning to the normal standard, having had no stationary stage.

In the majority of our tableaux, the lines of temperature show a slight increase in the evening and a decrease in the morning. Every one knows that such is also the case with all fevers, even of the most continuous type. These slight exacerbations are not even shown, in most cases, by the lines of the pulse, especially in the *first days* (obs. No. 14), when the poison is the only active agent of the fever, the *secondary visceral congestions* not having as yet appeared.

In a few of our tableaux (Nos. 2, 4, 8, 10, 12, 21 and 30) the lines seem to show some indication of a stationary stage after the third day, and up to the sixth or seventh day; towards the third or fourth day, the two lines remain parallel with each other and run horizontally, showing irregular parts corresponding to the evening exacerbations. Nos. 2, 4, 10, 12 are such cases, and have proved fatal; the *horizontal irregular* lines which, in the middle of their course, seem to indicate a stationary stage, are in reality the mark of that process of *capillary congestion of the viscera* which brings on the fatal results. Obs. 8 and 21 show evidences of the same congestive process, but here the congestion is external; it resulted in a phlegmon of the elbow (No. 8), and a suppurative inflammation of the parotid gland in observation No. 21.

Thus are seen to vanish these false appearances of a stationary stage. Moreover, the so-called stationary stage would show itself after the decrease of the fever, and not, as in all fevers, after the increase; for in our tableaux it only appears after the decreasing lines of the first stage.

None of our tableaux support the assertion written in the article "Fevers" of the New French Dictionary of Medicine (1871) e. g. "In some fevers the remission is long and complete, as in yellow fever, for instance, in which the *initial attack* is separated from the *terminal fever* by a *remission* of one or several days duration" (p. 742, vol. xiv).

According to our tableaux, yellow fever shows *one single effervescence*—only *one paroxysm*, never a true remission and the *unique attack* subsides immediately. Its progress is regressive, as soon as it appears. This last peculiar feature would not show as plainly in our tableaux, but for the fact that they often begin after the 2d and even 3d day. The fact is that the decline is marked from the very beginning, in the line of the pulse only; as for the temperature we shall see that it even increases, at least in two thirds of the cases, during the first two or three days. In my article "Hæmatemesic Paludal Fever," July, 1870, *N. O. Journal*, I only took into consideration the indications furnished by the pulse when I wrote, p. 441: "yellow fever is a fever of only one paroxysm; the march of this paroxysm is the decreasing continued." I had, however, already taken the temperature in some cases of yellow fever, during the epidemic of 1867, and I had been led by these first few observations to believe that the march of the temperature followed that of the pulse; thus, a few pages further, in the same article, I wrote down: "This continuous decrease of the pulse was generally in exact ratio with the temperature of the patient, given by the thermometer in the axilla. But, on this point, my observations are insufficient in number" (p. 445). It will be seen that my reserve, concerning that point, has been fully justified by the subsequent observations made in 1870.

The 38 observations of 1870 also contradict the opinion concerning the *short duration* of yellow fever. According to La-Roche's opinion, based on immense learning, it would be 3 *days* (3x24=72): "A febrile stage of about seventy hours' duration, more or less, is succeeded by a period of complete cessation of fever" (p. 426, vol. i). Judging from our tableaux, it should be 6 or 7 days (6x24=144 hours). As a matter of course, in order to properly understand the meaning of our tableaux, we must take into consideration several attendant circumstances which have a real influence: 1st, malarial and other complications, all of which are possible, and even frequently occurring from the beginning; 2d, the effects of drugs and of diverse medications; 3d, also the effects of the organic congestions occurring inevitably sooner or later in the course of serious fevers. For instance, the duration of the fever has often been changed by the veratrum viride, as shown by the tableaux (Nos. 18, 24, 25). On the contrary, *urticaria* in case No. 6, and a phlegmon of the elbow, No. 8, have stopped the decreasing pulse and temperature, and caused an *increase* in their march, &c., &c. We cannot afford to enter into all details. However, considering that the study of the temperature in yellow fever is very nearly a new subject, we think it best to insist upon these points.

III.

TEMPERATURE IN YELLOW FEVER—HISTORY.

1st. The first positive mention made of temperature in yellow fever may be found in Blair's work. (Some Account of the Last Yellow Fever Epidemic of British Guiana—1852); it reads as follows: "From the observations which were made, *with the thermometer*, on temperature of men laboring under yellow fever in Barbadoes, during the last epidemic, it did not appear to be high—when highest, not exceeding 104° F. in axilla." This extract is from a note of John Davy, end of page 78. The use of the thermometer, as a means of investigating cases of yellow fever, would seem to have been first tested by John Davy, more than twenty years ago.

2d. In Griesinger's Treatise on Infectious Diseases, (1868), we read, at page 113, "that, so far, observations on yellow fever have not been taken with the assistance of the thermometer. Lyons, however, has sometimes quoted an increase of temperature up to 104° F. on the second day of the disease. An *increase* in the temperature has also been observed *before death*, such as may also be observed in our typhus fever."

3d. In Wunderlich's great "Treatise on the Temperature in Diseases," 1871, we read, page 405, that: "The course of the temperature in yellow fever has been made known to us through an interesting paper of Schmidtlein's, in the Deutsches Archiv. sür Klinisch Med. iv., 50. According to him, the temperature is highest in the first few days of this disease, and very often reaches a height from 104° F. to 105° F., very frequently with slight evening exacerbations. From the *fourth* to the *fifth* day, the temperature steadily falls and sinks down to normal, or even below this. In cases which end fatally, it *rises* again towards the end some 3° to 6° F., or even more."

We have not been able to find anything more about the history of temperature in yellow fever. Concerning the first point, "the maximum of temperature in the very beginning stage being 104° to 105° F.," every writer agrees.

The second point, "the decrease of temperature from the fourth and fifth day," has not been confirmed in New Orleans in 1870; for the temperature has been seen to decrease from the first day in about one third of the cases, and in the other two-thirds from the second day, or for the latest, the third day; in two or three instances only, among our 38 cases, the decrease showed itself after the third day.

"An increase of three or four degrees, F., in the temperature, at the *termination* of the disease, in *fatal* cases," has never occurred in New Orleans: 13 fatal cases, in our tableaux, show an *increase* of *temperature in the end* in 3 cases only (the temperature had been noted twelve times on the last day), (obs. Nos. 4, 10, 32), and the increase was only of a few tenths of a degree; on the other hand, the temperature has been on the *decrease at the end* of the disease in 9 cases in 12 (Nos. 2, 7, 11, 12, 15, 16, 27, 33 and 38), and in all such cases it has *decreased several degrees.*

Maxima.—Our 38 tableaux show the following *maxima:*

103° F. and a fraction,	10 cases—	3 on 1st day,	3 on 2d,	2 on 3d	and 2 on 4th;
104° F. and upwards,	21 cases—	8 on 1st day,	5 on 2d,	8 on 3d;	
105° F. and upwards,	7 cases—	1 on 1st day,	1 on 2d,	4 on 3d,	and 1 on 4th.
	38.	12	9	14	3=38

In consequence, the *maximum* of temperature in yellow fever, in New Orleans in 1870, has been, in the average of cases, 104° F. Such is the *average maximum* of fevers in general; there is, therefore, in this, nothing peculiar in yellow fever. The particular and special feature is, that: 1st, this average maximum of temperature is *very rapidly* reached in yellow fever cases. In about one-third of our cases (12 in 38) the maximum has been reached on the very first day; in one-fourth of the cases (9 in 38) it was on the second day; in another third of cases (14 in 38) on the third day; and in three cases the disease had gone over three days before reaching the maximum of temperature. 2d: *The maximum holds only for a short time:* in all our cases the temperature began declining *immediately* after reaching its maximum, and it went on *steadily decreasing* till it reached the normal standard, and even *below* that point, except in cases where special circumstances or accidental causes easily accounted for, such as secondary congestions, appeared. Thus we can say that there exists no *stationary stage* in yellow fever.

The decrease of the temperature has been remarkably slow. Up to the fifth day it had not yet reached the normal standard in most of our cases. The exceptions were such as were very mild, or such as proved rapidly fatal. In 20 or 30 the thermometer registered 100 or 102° F. on the fifth day. Tableau No. 3, very carefully taken down by Dr. Layton, is very remarkable concerning the slow progress in the decrease of the temperature: during the second week 100° F. is the average temperature the whole while. On the fifth day it was 103°, and the pulse had then returned to the normal condition; on the seventh day the temperature was normal, but on the tenth day the temperature increased to upwards of 100°, whilst the pulse, always decreasing, only gave on that day 42 beats per minute. The decrease of the pulse had called for the use of stimulants; the effect of these account for the temperature steadily marking 100° F. during the whole of the second week in full convalescence. The stimulants had also very soon aroused the circulation. In short, the march of the temperature in our tableaux is marked, 1st, by a *period of increase, very rapid and of very short duration;* and, 2d, by a *period of decrease*, rather slow and long. There is no sign of a true stationary stage.

Thus the study of temperature in yellow fever offers for our consideration only an *effervescence* and a *defervescence.*

Effervescence.—It has been such that, in a few hours after the sudden appearance of the fever, the thermometer gave 4° F. as an average, and 6° and sometimes even 8° above the normal standard (obs. No. 16). Having practised for more than twenty-five years in New Orleans, I have never met any other form of yellow fever but the *reactive* or *sthenic* form. What shall we say of its "*algidus*" form? This form, "so well described by Dr. Lyons in the Lisbon Epidemic of 1857," according to Aitken's quotation, p. 438, has not gone through a thorough scientific test, that should prove its existence beyond any doubt.

In New Orleans, the effervescence of yellow fever, very active at the onset of the disease, has only held out for three days; in some cases it went on the decrease on the very first day: obs. No. 13 shows, on the evening of the first day, a decrease of more than one degree as compared with the morning temperature of the same day. In some tableaux, we notice from the first to the econd day a decrease of three or four degrees, even when the veratrum has not been used: obs. No. 23 shows a decrease of more than five degrees.

When the effervescent period has lasted two or three days, it has nearly reached the maximum of its increase as early as the evening of the first day; from the first to the second day, the increase was only a few tenths of a degree, and from the second to the third day it was even less (obs. No. 2, 3, 4, 10, 12, 14, 28, 30, 31). Then the defervescence begins, *abruptly*, and is marked in the tableaux by an *oblique'y descending* line, forming with the line of effervesence a characteristic acute angle.

Defervescence.—The remarkable feature of defervescence in yellow fever in 1870 was its slow progress: the *average maximum* being 104° F., the line went gradually decreasing for four to seven days before regaining the normal point—98° 5′ F.—or one degree per 24 hours.

This simple fact shows that the *defervescence* in yellow fever is not to be taken as a *critical change* or a *crisis.* In those fevers in which the defervescence has to be looked upon as a crisis, it shows itself quite late, and terminates rapidly, say in 36 or 48 hours! For instance, in cases of pneumonia, *when the febrile cycle is regular;* also in the incipient febrile stage of variola, and in varioloid cases, &c, defervescence is notably *shorter* than effervescence; in other words, *the decrease of temperature is more marked than its increase.* The contrary obtains in yellow fever. Effervescence has lasted from one to three days; defervescence from four to seven days. This shows that, in cases of yellow fever, the *average* total duration of the febrile temperature measures *ten days*; whilst, as concerns the *incipient fever of variola* (which bears so much resemblance to the incipient stage of yellow fever) the *ascent*, or *effervescence*, is of four days duration, and the *defervescence*, two days. In Wunderlich's tableaux, *mild* cases of *scarlet* fever only show a *defervescence* somewhat similar to that of yellow fever.

Minima.—In the decreasing stage, the *minimum* of temperature has several times been found to be *below* the normal point. Unfortunately, we have not been able to keep up with the observations of our cases, after the patients were considered *cured*, *all traces of fever having disappeared*, which condition occurs at a very early stage. Our tableaux are thus made incomplete. Obs. No. 31 shows that on the 8th and 9th days the temperature was

96° 8′ and 95° 2′ on the 10th day; the patient was fully convalescent. Our tableaux show two other instances of recovery with a *minimum below* the normal point; obs. No 21—10th day, temperature=96° 5′ F.; obs. No 17: 6th day 97° 8′ F.

In fatal cases, the line of defervescence, checked in its descending progress by the visceral congestions, will sometimes resume an ascending march towards the end, and maintain it until death; but, such is not always the case, contrary to what Dr. Schmidtlien affirms, as quoted from Wunderlich: "In cases which end fatally, it rises again towards the end some 4° F., or even more." This *final ascent*, which we consider as exceptional, has only marked a few *tenths of a degree* in our observations.

In the cases observed in New Orleans, the temperature sometimes *went on decreasing during articulo mortis*, and has even reached *below* the normal point at the very moment of death. Obs. No. 16: temperature=97° 7′ F. at the moment of death on the 5th day, whilst on the 3d day it marked 104° F. This was a falling of more than 6° F. in 36 hours! Our tableaux read as follows: In 13 fatal cases, the temperature has been noted 12 times on the day of death. The 12 cases show an *ascending* temperature only in three cases, and in these three instances the increase was only a few *tenths* of a degree (obs. Nos. 4, 10 and 32). On the contrary, nine times in twelve the temperature was *descending*, and the decrease in each case was 2, 4, 6, degrees F., and even more (obs. Nos. 2, 7, 11, 12, 15, 16, 27, 33, 38).

I shall sum up in saying that, the march of the temperature in yellow fever, as shown by the graphic lines representing it, is characterized by a *unique paroxysm* with an *effervescence* of one to three days, followed by a *defervescence* of four to seven days, without any stationary stage.

IV.

MARCH OF THE PULSE IN OUR TABLEAUX.

See the tabular records of pulse in the cases mentioned.

The inferior lines which, in our 38 linear tableaux, are intended to point out the march of the pulse, are rendered remarkable by the uniformity and, I should say, the originality of their first direction: twenty cases, carefully noted from the first day, show the line to be *obliquely descending from the very beginning*, with the exception of one or two cases; these observations prove the *pulse to decrease, in the first hours*, in one of the most acute and severest of fevers known. But the descent of the pulse only begins after a very high ascent has been obtained—120, as an average, which is nearly twice the normal number. This proves that the increase reaches its *maximum* before the first visit of the physician. The pulse slowly decreases, descending still more slowly as the disease goes on, until it reaches the normal point, or even falls below it. The *average maximum* being 120 on the first day, it gives 10 to 15 minus on the second day; 24 hours later it will again show 10 less; then it goes on decreasing the following days, but less rapidly. As a rule, on the fourth day the pulse is about 80, which is only half way in the decrease, and reaches the normal point on the seventh or eighth day; then again it goes on decreasing, till it only beats 40 in some cases! (obs. Nos. 3 and 31.)

Considering the condition of the pulse only, we can find no *augmenting* stage and no *stationary* stage. It shows a *decreasing* fever, which decreases after a very great *ascent*, the *increase* being so rapid, and of so short duration, that the physician is too late to observe it. Obs. No. 9 is a good specimen of the *steady decrease* of the pulse, especially in the first days, after the *sudden ascent* of the incipient stage. In the night of the 3rd to the 4th day, indigestion caused the temperature to increase more than 3° F., and during this *increase of temperature*, the pulse *decreased* 10 pulsations. Therefore it is not surprising that the lines of the pulse do not show the slight exacerbations of the evening, as the lines of temperature show in yellow fever and in nearly all fevers.

Now, after the first days, the *primary* action of the morbific principle being followed or complicated, in many cases, by those congestions of organs which cause changes in the lines of temperature, we are liable to see the same changes occurring in the lines of the pulse through the influence of the same causes (obs. 2, 4, 8, 10, 12, 21, 30).

The march of the pulse is not the same in all cases at the end of the paroxysm of yellow fever. First; in favorable cases, we have seen the pulse continually decreasing, so as to mark, in some instances, as low as 20 *below the normal point*. Second; in more severe cases, its decrease being checked by some congestion, it would again resume its downward march as soon as the congestion would subside. Third, in fatal cases the pulse has an *ascending march*. It steadily ascends, even until it reaches above the incipient maximum point, and may become too rapid to count (obs. No. 12).

This increase of the pulse in the last stage of the disease, in cases where it has proved fatal, may possibly account for the notion of a *terminal fever*, separated from the *initial fever* by a *stage of remission.* But this *terminal increase* usually coincides with a *decrease in the temperature;* as the pulse is going on rising, the patient is getting cold; it is the contrary that characterizes fever.

V.

PARALLEL BETWEEN THE MARCH OF THE TEMPERATURE AND THAT OF THE PULSE.

It is especially in the *incipient stage* of the one paroxysm of yellow fever, that it is particularly interesting, as far as concerns the *diagnosis*, to have a correct notion of the direction of the lines of temperature and pulse. Only 31 of our 38 tableaux have been marked from the first day, and they give the following results:

1st. In about two-thirds of the cases (21 in 31), whilst the line of the pulse invariably descends from the beginning, the line of temperature, on the contrary, ascends during *one* day (obs. Nos. 15 and 22) during two days (obs. Nos. 2, 4, 6, 9, 10, 17, 20, 28), and even during three days (obs. Nos. 1, 3, 5, 11, 12, 14, 24, 26, 27, 30, 31).

2d. In the other third of our cases (10 in 31—obs. Nos. 7, 8, 13, 16, 18, 19, 21, 23, 25, 29), the two lines decrease parallel with each other, and decrease immediately from the very first day; but, it is fair to observe that, in five cases among these last ten, (obs. Nos. 8, 13, 19, 23, 29), we had to deal with such mild forms that the immediate descent of temperature is easily accounted for; in three cases (obs. Nos. 18, 21, 25) the use of *veratrum* is responsible for the premature decrease of the fever. In two cases (obs. Nos. 7 and 16), the advanced age of the patients easily accounts for the decrease of the fever; patient No. 7 was 67 years old, and No. 16 was 63 years of age.

We consider that we are now authorized to say that, in yellow fever we are able, in the majority of serious cases, to detect, from the beginning of the fever, one of its most precious *diagnostic signs*, and that is the *divergence* of the lines indicating the march of temperature and pulse. The line of the pulse *descends immediately*, whilst the line of temperature *ascends*, and that during one, two, and even three days.

At the end of the paroxysm, the opposite obtains in the majority of cases that prove fatal—7 in 12 (obs. Nos. 2, 7, 11, 12, 15, 27, 32) the pulse increased to a high ratio, became imperceptible and the temperature went down several degrees. In cases of recovery, at the end of the paroxysm both lines are parallel with each other on the decrease, and go on that way even below the normal point.

In the paroxysmal stage, the *concomitant* march of both lines (temperature and pulse) is of some import as concerns the prognosis; if the lines stop descending, and especially if they ascend together, we must look out for the cause of this augmentation of the fever. Is it an external cause? So much the better then, (obs. No. 8—a phlegmon; obs. No. 21—parotitis). If the cause of the augmentation of the fever is internal (capillary congestion of some organ), we are made aware of danger. If, in their descent, the lines, in the middle of their course, begin diverging, that of the pulse ascending whilst the line of temperature descends, the danger then is very great.

But I shall insist upon saying that the direction of the lines of temperature and pulse is of especial importance in the *incipient* stage of the febrile paroxysm of yellow fever, in view of the diagnosis of the disease. In the great majority of serious cases, *the line of the pulse descends, whilst the line of temperature ascends.* Are we not justifiable in our belief that there very likely exists no other disease in which the same occurrence obtains? Of course we can not be positive in so saying, without ascertaining the condition of the pulse in all fevers, as well as yellow fever. In the incipient febrile stage of variola, we have the same *ascending direction of the line of temperature*, even for four days: the probability is that in the meantime the direction of the line of the pulse *is not descending.* It would be more satisfactory if we could affirm what we suggest.

We do not pretend to establish, with the assistance of some thirty observations, a fact of such import; we merely mean, with Drs. Tonatre and Layton, to call the attention of investigators to further inquiry.

Let us now consider the *specific character* of yellow fever, which shows itself, in our opinion, by the *action* of its morbific principle on the *heart*, this action being denoted by a diminution in the number of pulsations, from the very beginning; we have more facts to establish this second point than we had concerning the first.

The impossibility of reproducing our 38 *tableaux of lines* has induced us to select some of our most characteristic observations, and write them down in shape of *tableaux of numbers*, for the "N. O. MEDICAL AND SURGICAL JOURNAL."

TABLE I.---Mild Cases.

DR. FAGET—Obs. No. 29. *Boy 3 Years Old.*

	Temp. Morning.	Pulse, Morning.
1st day	103° 1′ F.	116
2d day	101 5	110
3d day	99	76
4th day	99	68
5th day	99	63
6th day		

DR. TOUATRE—Obs. No. 13. *Young Woman.*

	Temp. Morning.	Pulse. Morning.
1st day	103° 3′ F.	118
2d day	101 7	96
3d day	100 8	80
4th day	99 5	76
5th day	99 5	72
6th day		

DR. FAGET—Obs. No. 17. *Young Woman, pregnant in the Fourth Month*

	Temp. Morning.	Pulse. Morning.
1st day	102° 2′ F.	130
2d day	103 2	1[illegible]8
3d day	101 2	104
4th day	99 5	84
5th day	98 6	84
6th day	98 2	70

TABLE II.---Serious Cases.

DR. FAGET—Obs. No. 31. *Frenchman, aged 23 Years.*

	Temperature. Morn'g.	Temperature. Even'g	Pulse. Morn'g	Pulse. Even'g.
1st day	--------	--------	--------	108
2d day	101° 1′ F	102° 2′ F	100	100
3d day	102 6	103 7	96	104
4th day	101 5	102 2	88	92
5th day	99 5	--------	80	80
6th day	99 6	100 4	80	--------
7th day	98 6	--------	70	--------
8th day	96 8	--------	58	--------
9th day	96 8	--------	48	--------
10th day	96 3		45	

DR. TOUATRE—Obs. No. 14. *Frenchman, 25 Years Old.*

	Temperature. Morn'g.	Temperature. Even'g,	Pulse. Morn'g.	Pulse. Even'g
1st day	———	102° 2′ F	--------	130
2d day	103° F.	104	120	112
3d day	103	104 5	104	100
4th day	101 2′	102	84	84
5th day	99 5		80	

DR. LAYTON—Obs. No. 3. *Frenchman, 27 Years Old.*

	Temperature. Morn'g.	Temperature. Even'g.	Pulse. Morn'g.	Pulse. Even'g
1st day	--------	....	....	....
2d day	104° F.	105° 4′ F	104	96
3d day	105	105 8	88	84
4th day	104 4′	104 4	80	76
5th day	103	103 3	62	....
6th day	101 5	101 9	60	....
7th day	100 4	99 7	60	58
8th day	99 6	99 6	52	52
9th day	99 6	99 6	52	48
10th day	100 *Convales*	100 4 *cence.*	42 *Convales*	58 *cence*
11th day	100 4	100 4	64	64
12th day	100	99 6	56	64
13th day	100	100 4	58	48
14th day	100 4	100 6	64	66

TABLE III.---Fatal Cases.

Dr. Touatre—Obs. No. 2.

A Frenchman.

	Temperature. Morn'g.	Temperature. Even'g.	Pulse. Morn'g.	Pulse. Even'g.
1st day	... .	103° 6/ F.	....	100
2d day	103° 2′ F	104 4	100	100
3d day	102 6	....	... .	80
4th day	103 1	103 4	86	88
5th day	102 2	102 2	88	92
6th day	100 4	....	88	88
7th day	102	102 2	88	80
8th day	102 2	....	88	--------
9th day	102 2	....	110	
10th day	98 6	....		
11th day				

Dr. Touatre—Obs. No. 12.

A Frenchman.

	Temperature. Morn'g.	Temperature. Even'g.	Pulse. Morn'g.	Pulse. Even'g.
1st day	....	....	..... .	....
2d day	103° 7′ F.	....	110	....
3d day	103 8	104° 6/ F.	104	84
4th day	103 7	104 2	80	70
5th day	101	103 1	64	68
6th day	104 4	101 3	82	98
7th day	99 7	101 5	84	104
8th day	101 3	101 2	103	102
9th day	99 2	100 2	100	112
10th day	99 5		100	
11th day	99		130	

Dr. Faget—Obs. No. 11.

A Sicilian.

	Temperature. Morn'g.	Temperature. Even'g.	Pulse. Morn'g	Pulse. Even'g.
1st day	....	....	....	....
2d day	....	105° 8/ F.	....	84
3d day	106° F.		96	108
4th day	100			
5th day				

VI.

SPECIFIC CHARACTER OF YELLOW FEVER.

In the work that I published on yellow fever in 1859, after having studied the progress of this fever without the thermometer, guided only by statistics of the pulse, and these statistics compiled from at least a hundred observations, taken by a dozen physicians during the epidemics of 1839, 1853, 1858; I expressed myself in the following manner (p. 85):

"In all these observations written at the bed-side of the patients, during three different epidemics in New Orleans, we perceive, nearly without exception, that the pulse, at its *apogeum* from the first day gives me more than 100, sometimes 110 and 120 pulsations; begins to fall the second day, continues to decrease regularly the third, and gives, from that time, 70 to 80 (sometimes much less)."

Then, in this immediate decrease in the rapidity of the pulse, I could already see the characteristic or specific trait of yellow fever; for on the preceding page (84) I had just said: "The regular and rapid decrease of the pulse is such in yellow fever, from a record of a hundred observations, that we could recognize it as the true characteristic of that fever."

To-day, after the epidemic of 1870, that is to say, after having been able to study the progress of yellow fever, not only with the "independent second watch," but at the same time with the thermometer, I think further hesitation is impossible; the diminished frequency of the pulsations, that is to say, the heart's action, show themselves from the beginning in yellow fever, and consequently in the height of febrile excitement as certified by the thermometer. This is the essential characteristic of this fever; and, in fact, a like decline of the pulse is not a simple abatement of the fever, since it occurs at the height of febrile excitement, and even in the great majority of cases during the increase of temperature. We find, then, a diminution of the beats of the heart, produced by a direct specific action of the poison itself of yellow fever, on the central organ of circulation. This specific action of yellow fever poison on the heart can be compared to the effect produced on that organ by certain poisons, as, for instance, digitalis and veratum viridi.

But if there are natural poisons that possess the property of diminishing the heart's action, does there exist a fever exciting cause, besides that of yellow fever, that will produce this double effect?

1st. Of lighting up fever in the organism.

2d. While the high temperature is maintained, of lessening the pulse as if the patient had taken veratum?

We do not think so; for us, so far, yellow fever has alone presented this peculiarity.

The effect of yellow fever poison on the heart is carried to such an extent, and lasts so long that we have seen several times, about the tenth day, the pulse fall to about 40, and Blair has seen it fall to about 24 (p. 75).

Now, if yellow fever is the only fever in which the essential principle, that is to say the specific poison, produces such effects (as the small-pox poison produces, only small-pox pustules,) it becomes incontestible that it is essentially and necessarily a specific fever—a true febrile type, as well as variola. And we wish here to remark that we confine ourselves entirely to the definition given to the word (type) by Sydenham.

Thus it was that he expressed himself in paragraph 171, in his work on Pestilential Fevers in 1665 and 1666.

(Unaquaeque morborum, non minus quam animalium aut vegetabilium, species, affectiones sibi proprias, perpetuas, ac pariter univocas, ab essentiâ suâ promanentes, sortita est.)

From which it results that to admit the existence of a morbid type, it must possess its peculiar and constant signs due to the morbid principle itself. The peculiar distinguishing sign of the yellow fever type is the effect produced on the heart by the febrile principle. This poison directly weakens the action of the heart, in diminishing its beats, while the febrile exacerbation it has lit up in the blood is at its height. But it will be said that a hundred observations are but few on which to establish such a fact. But here, by singular good fortune, we have found on page 75 of Blair's observations already cited, a table of statistics showing the average of the pulse, confirmatory of ours, and taken from more than 400 personal observations.

This table of Blair's was published in 1852. It results, therefore, that the average decrease of the pulse from the first day, in yellow fever, has appeared in science before, in a practical demonstration of the fact. In truth, Blair has contented himself by giving his statistical table, and did not call attention to the fact that resulted from it. This fact strikes one's attention, however, in this table.

Nombre des Observations.	Jour de Maladie.	Moyennes du Pouls.	Difference.
121	1r jour	97.40	
338	2 "	90.80	7
406	3 "	83.53	7
388	4 "	80.44	3
311	5 "	78.56	2
206	6 "	78.74	2
125	7 "	78.78	2
71	8 "	75.62	
46	9 "	75.76	
29	10 "	77.58	
16	11 "	76.37	
7	12 "	76.00	
5	13 "	79.20	

How can we not see that on an average in Guiana, yellow fever presented on the second day 7 pulsations less than on the first; and on the eighth, 7 less than the second; the fourth day 3 less than on the third; and the following days the decline became less and less rapid, but still continued. Of the four epidemics in New Orleans in which I recorded the pulse, I compiled average tables on Blair's model; then from these four tables I compiled a general table which gives averages drawn from the averages of the four different epidemics. It will suffice to reproduce here this last general table of statistics.

Table of the Average of the Pulse, Taken from the Average of four different Epidemics in New Orleans.

Number of Observations.	Day of Fever.	Average of Pulse.	Difference.
73	1st day	113.7	
82	2 "	100.7	13
86	3 "	90.	10
95	4 "	84.	6
69	5 "	76.	8
47	6 "	71.7	5
26	7 "	67.7	4

In this table of general averages we notice a diminution of 13 pulsations from the first to the second day, from the second to the third a diminution of 10, and in the succeeding days, though the diminution is less great, it is still plainly perceptible up to, and beyond the seventh.

Now, if we compare the statistics of Georgetown (Guiana), and those of New Orleans, we find of course a difference, probably due to the climates, but the general diminution in the frequency of the pulse during the first days of yellow fever cases was the same in both countries. Now, these tables were compiled from over 500 special observations, more than 100 in New Orleans, and more than 400 in Georgetown. A general clinical fact such as this, (the progress of the pulse in fever) based on upwards of 500 special observations seems to us to be definitively established. We think, then, we are able to conclude that in yellow fever the pulsations of the heart, as well as the temperature, have their maximum at the beginning of the disease, and decrease thenceforward. That the number of pulsations diminishes hourly, and that during convalescence we have sometimes seen them descend to nearly half their normal frequency.

This is in our opinion the specific characteristic of yellow fever, no other fever presenting anything similar.

Now, the specific character, *clinically demonstrated*, has just received the most remarkable *anatomical confirmation* in the observations upon yellow fever (just published by Prof. Joseph Jones, of the University of Louisiana). This is what he says on page 8 of his pamphlet:

"The central organ of circulation is structurally altered and enfeebled in yellow fever, the muscular structures of the heart present alterations similar to those observed in the liver and kidneys. Oil, granular, albuminoid, or fibroid matter is deposited within and around the muscular fibrillæ, and the organ after death presents a yellow, flabby appearance: (for Dr. J. Jones) these lesions of the heart, shown by careful post-mortem examination, are characteristic of the disease."

In completing this third portion of our work we should call attention to the fact that the general table of the average of the pulse, furnished by Blair, like ours of New Orleans, not only shows the steadily decreasing character of the pulse in yellow fever, but it also demonstrates beyond a doubt that this fever has but one paroxysm, and consequently it is a continued fever, continually decreasing, but still continued.

And this statement possesses more weight from the fact that the general table compiled in Georgetown, was made from special observations collected in a locality equally as marshy as ours.

If, then, yellow fever remained a fever with but one paroxysm, in Guiana as well as in New Orleans, it proves it not only to be a *continued fever*, but one that resists efficaciously the concomitant influences of malarial fever.

VII.

RESUME AND CONCLUSION.

1st. During the small epidemic of yellow fever of 1870, in New Orleans, several physicians have had an opportunity to study the *march* of the *unique paroxysm* which constitutes this fever, not only with the assistance of the independent second-hand watch, but also with the thermometer. The first result furnished by such observations, regardless of course of the slight evening exacerbations to be met with in all fevers, is that: during that *single* paroxysm of yellow fever, the *fever* has shown a *continuous* type. The *maximum point* of this single febrile stage, as regards both the pulse and temperature, has been *very rapidly reached*; then, the fever began *decreasing immediately*, without giving any signs of a stationary stage, and has often gone down below the normal condition.

2d. During the *first days*, however, the two instruments have *disagreed*, at least in two thirds of the cases: the *maximum* of the *fever* was reached as early as the first hours of the disease, as in fevers with several paroxysms; then immediately the number of pulsations would *diminish*, whilst the temperature continued *increasing* for two or three days, the increase being very small from the first to the second day, and still smaller from the second to the third day.

This second result is worth the consideration of all observers; for, if it proves true on a large scale, and, it we are fully satisfied that yellow fever is the *only fever* in which, in the first stage, the pulse is thus seen to *descend* immediately after reaching its *maximum point*, whilst the temperature goes on *increasing*, for two or three days; the inevitable consequence is that in the great majority of cases, we shall be able with the assistance of the *independent second-marking* watch and the *thermometer*, to give a *correct diagnosis in the very first hours* of the disease.

3d. As for the *decrease of the pulse*, or the decrease in the *beatings of the heart*, from the beginning, taking into consideration all the observations made, even before the thermometer was brought into use, it is, in our opinion, a *general fact* based upon the analysis of more than 500 *particular facts*; we consider it as definitely established, and we take it to be the *specific clinical characteristic* of the disease.

4th. This *general fact* based upon the average of observations made in Guiana and in Louisiana, that is to say in the midst of the most powerful malarial or swampy influences, goes to prove the two following points:

(1st.) Yellow fever has nothing to do with the *paroxysmal* fevers of all types; (2d.) it even resists remarkably the influence of *malarial poisons*, and preserving, amidst their emanations, its *type* as a fever *with only one paroxysm, continuous and decreasing*.

5th. The main conclusion of our article, published in the *N. O. Journal*, July, 1870, is thus fully confirmed by the new facts herein added: After quoting the following from La Roche, of Philadelphia, page 437, vol. i., "That the two diseases (yellow fever and malarial fever) may prevail at the same time, in the same place, and also *co-exist* in the system, are facts too evident to be denied." I went on saying that, "When the two morbid agents come simultaneously in action, it is only after the *continued decreasing* fever will have ended that the fever *with paroxysms* will develope itself; *a fortiori* will it yet be so when the yellow fever agent will have had the start; finally, when it is the paludal poison which has first entered in action, this action is suspended as soon as the yellow fever poison enters in fermentation, in such a manner that the intermittent progress of febrile action *immediately substituted* by the *continued march*."

Consequently, an *intermittent fever* which remains intermittent *until the end*, whatever may be the symptoms * * * * *black vomit* or not * * * *cannot be yellow fever;* it is a pure paludal fever, even during the prevalence of an epidemic of yellow fever."

Then I gave in the same article, as confirmative facts, some ten observations, retaining as many more intended for the next number of the paper. These were observations of *paroxysmal* fevers of all types, from the genuine intermittent down to the *pseudo-continuous*, bearing the greatest resemblance with the continuous; in all these cases black vomit had shown itself, and sulphate of quinine had proved remarkably beneficial and successful. I had made a selection of such cases only as had been examined by several confreres called in consultation. There can be no question about such cases.

Last Conclusion—It thus appears to me that the existence of the *hæmatemesic* form of the "*malarial hemorrhagic fever*" is based upon the most solid foundations, facts and reasoning.

Can the objection be made that we are creating a *new* fever? Our answer stands in the heading of this article: "Nil sub sole novum."

In the time of Hippocrates, the hemorrhagic malarial fevers had been observed in the Islands of Greece; the vomiting of *atrabile* was what we call black vomit; hematuria was not unfrequent. But, was it known, in those days, that *black* or dark urine and *atrabile* contained blood as the coloring agent—were signs of *hemorrhagic fevers*? Of course not.

I was reading some time ago in the "*Medicine Through the Centuries*," by Guardia, a quotation from the works of Piquier, a physician of the King of Spain, (Charles VI.,) in which Piquier speaks of *black vomit* showing itself in the central part of Spain, during the paroxysms of the *tertian* fevers, and he does not show the slightest surprise:

"In 1758, says Piquier, the court moved as usual to Aranjuez, during the better part of the year. The King remained there until the 27th day of August, when the queen died; she had been ill since the 20th day of July. Aranjuez is an unhealthy place in summer and in fall; that particular year we had a great many cases of *tierce* fevers, *epidemic*; the most robust people were not exempt from the attacks. Sometimes the paroxysms *were accompanied with black vomit*, and showed as a rule a malignant character." Guardia, p. 270.

Did Piquier take these *tertian fevers* with *black vomit* to form part of the great class of the *hemorrhagic malarial fevers*? Did he feel the necessity to consider them as a special form, the *hæmatemesic form* of the *hemorrhagic malarial fever?* Of course not; he *could* not.

One hundred years later, and, especially as far as we, physicians of New Orleans, are concerned, it is necessary to make these *classifications* and distinctions.

Chemistry and the microscope have largely contributed to the study of the *hemorrhagic malarial* fever; its *hematuric* form is definitely admitted; the *hematemesic* form must also be accepted.

Is it necessary that we should insist on the importance of not mistaking *yellow fever* for the malarial or *paludal hæmatemesic fever?* The treatment of yellow fever is yet exposed to the influence of theories and experimentation; that of paludal hæmatemesic fever has a *specific* remedy, which is quinine!

I agree in consequence, and fully agree, with Professor Bemiss, when he says in the late number of the NEW ORLEANS MEDICAL AND SURGICAL JOURNAL, that: "We are surely wise when we endeavor to acquaint ourselves with the nature, symptoms and treatment of yellow fever. * * * * But let us never lose sight of the fact that, in the 'Mississippi Valley,' and in the whole 'Cotton Belt,' the swamp poison is, by far, man's most destructive foe."

Therefore, as far as concerns the physician practising in New Orleans, or in any other part of the South of the United States, the study of yellow fever must only be considered as a sort of an introduction to a much more important study to him, that of the malarial hemorrhagic fever, *in all its varieties* even, and furthermore, especially in its *hæmatemesic variety.*

ARTICLE II. *Extract from an Essay on "The Anatomical and Physiological Peculiarities of the Negro," read before the Dallas County Medical Association, Nov. 14th.* 1872, *by* JOHN. P. FURNISS, M. D., Selma, Ala.

* * * * * * * *

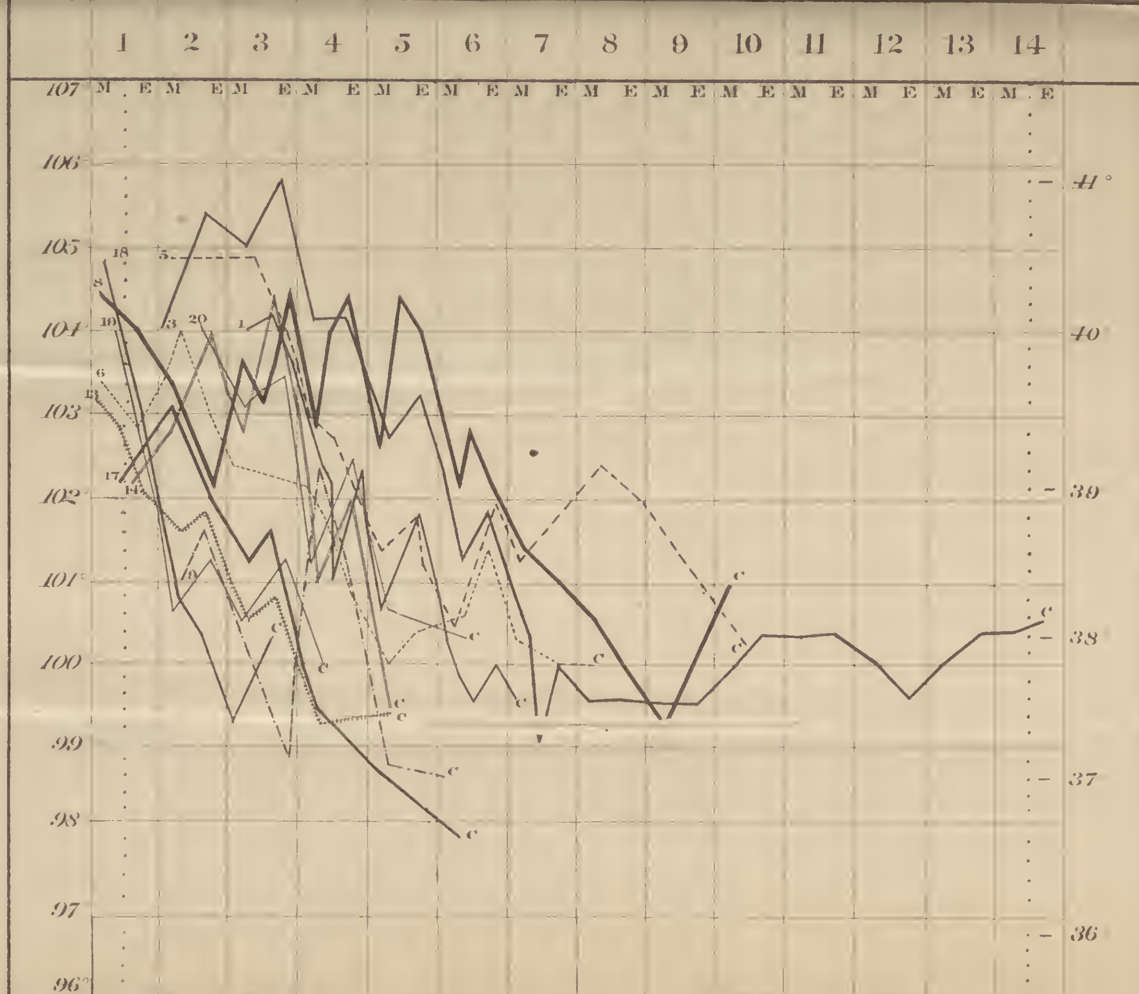
The ideas which I shall now advance have been the subject of investigation since April, 1870.

At that time I had quite a number of cases of syphilis among both whites and blacks.

The majority of the blacks had the worst forms of secondary manifestation associated with the primary, at the time they came under my care.

As all of them suffered from phymosis to such an extent as to render the chancre inaccessible to local treatment, and as the disease is violent in proportion to the duration of the initial lesion, as is asserted by most authors, there is then a ready explanation of the above mentioned fact.

In his work "On the Reproductive Organs," page 170, Acton remarks: "In the negro, it (the penis) is unusually large, but, as in the case with whites also who have the same peculiarity, it does not proportionately increase in size on erection taking place."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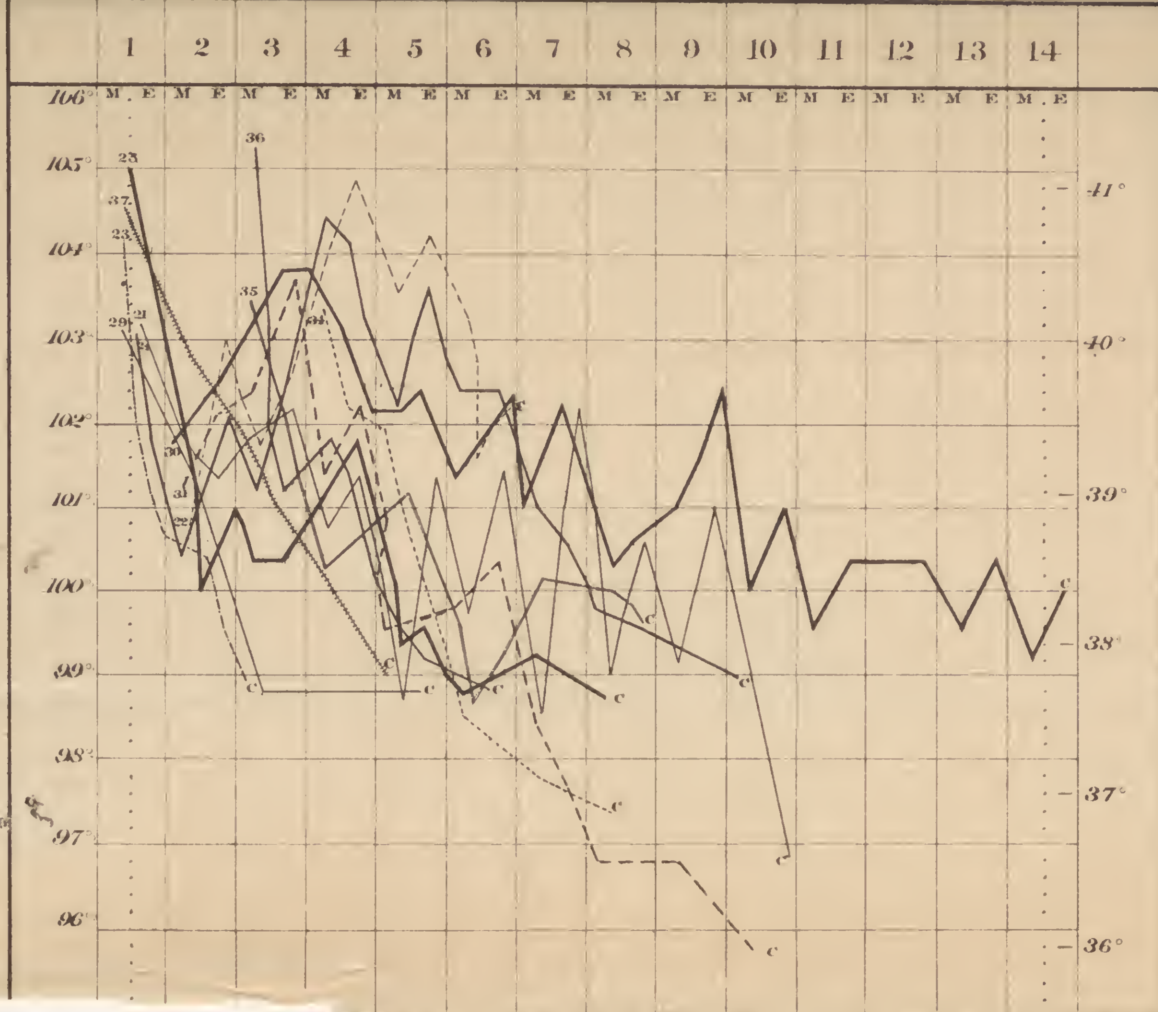
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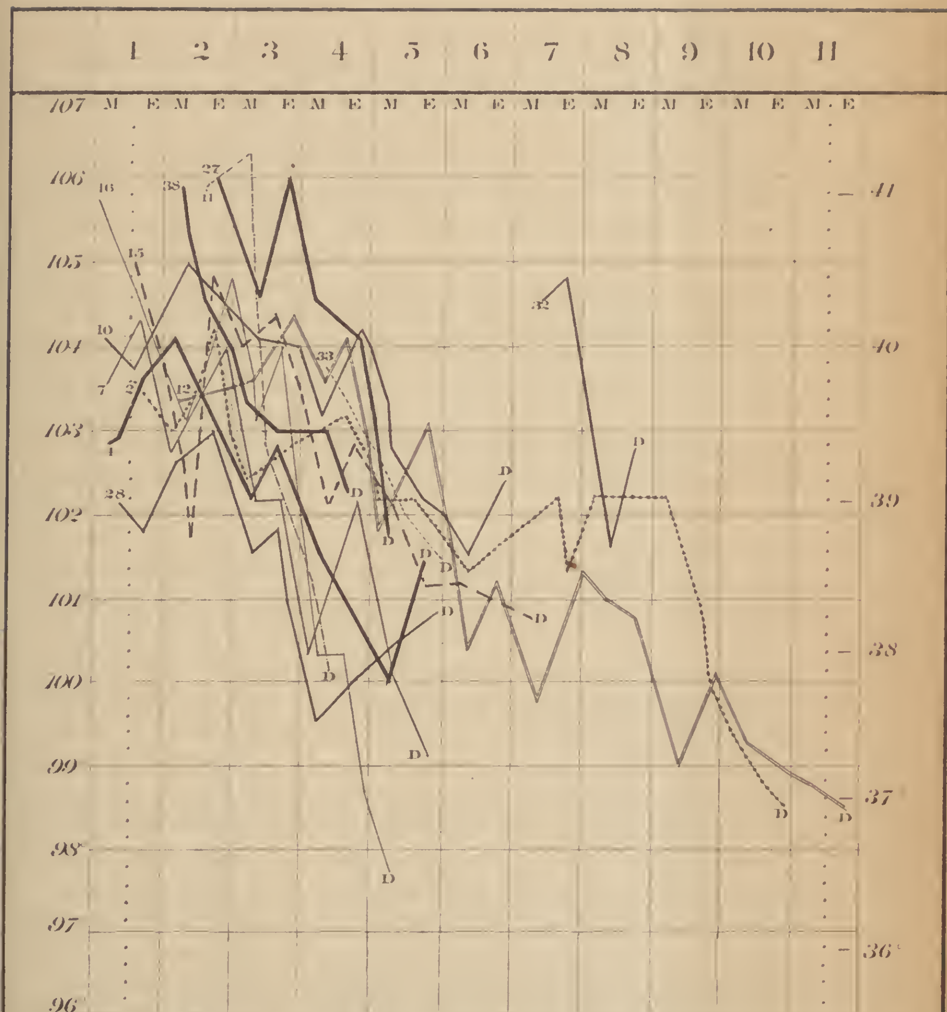
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Keeping this statement in view, and recollecting another fact, which I had learned from observation, that in this race the prepuce was unusually long—so long as to cover the entire glans—I was led to believe that there was some general rule by which we could account for the fact, that some men have long foreskins, and that others have short ones—so short as to leave the glans entirely exposed, even when the organ is in a flaccid state.

From "Fan and Knox's Anatomy of the External Forms of Man, for the use of Painters and Sculptors: Hippolyte Bailliere, 219 Regent Street, London," I learned that artists have definite rules for determining the relative proportions of the different members of the body; but in none of the different systems of measurement there mentioned is any allusion made to the relative shape and size of the penis.

As the type of the negro has broad shoulders, a large chest, and a narrow, shallow pelvis; and as the majority of them have long foreskins, I was induced to believe that I would find a corresponding development in any of the white race who possessed a similar conformation.

Observation and a somewhat extensive venereal practice have not only enabled me to prove the correctness of my supposition, but to assert:

1st. That when a man, white or black, possessing a harmonious development, has broad shoulders, a large chest, tapering limbs, and pointed features; he has a prepuce which covers the glans entirely; and conversely:

2d. That when he has rather narrow shoulders and chest, a broad and prominent pelvis, stubby fingers (square phalanges) and obtuse features, the prepuce is so much retracted as to leave the glans uncovered.

I have also noticed that the glans penis is smaller, and the whole organ more tapering, when it is habitually covered by the prepuce than when it is not.

Hence it will be seen that the penis partakes of the character of the general conformation—that it is tapering when the body and limbs are so, and conversely.

The majority of well-formed, symmetrical men, have prepuces which partially cover the glans. Apollo Belvidere, in the "Iconographic Encyclopedia," and the model of masculine anatomy, in "Fan & Knox's Anatomy," are so represented.

As the conformation of the body may be modified by occupation, it may be said that no such rule as the one proposed would be applicable for the purpose of determining the length of the prepuce and the shape of the penis.

We must recollect, however, that men choose, or are forced by the laws of nature to engage in, those pursuits to which they are best adapted; and we must not forget the fact that the muscles, more than the bones, are influenced by peculiar employments, and that the bones give character to the general conformation.

Whatever may be the faults of the theory, practically, I can determine, by the rules proposed, in nine out of ten men of harmonious development, whether they have a long or a short foreskin.

Historians tell us that circumcision is not exclusively a Hebrew custom, but that it was, and is to this day, practiced among the Egyptians, Hottentots, Abyssinians, Arabians, etc., etc. (See Art. Circumcision, Smith's Dictionary of the Bible.)

The people who practice this custom are the inhabitants of hot climates, and physiologists tell us that they have large chests to enable them to breathe a rarified atmosphere.

All of us are familiar with the conformation of the negro, and, as a type of such inhabitants, we know that he has a large chest, narrow pelvis, and, generally, a long foreskin.

Does not the custom of circumcision in warm, and the absence of it in cold countries show that the inhabitants have resorted to it on account of the inconveniences resulting from the unusual length of the foreskin?

Suppose that the rules I have mentioned are correct, and that I have been the first to point out the relative correspondence between one portion of the body and another, what practical benefit can accrue from such a discovery?

Is not all knowledge (truth) useful?

Will not such information be serviceable to the surgeon, the historian, the ethnologist and the artist?

ARTICLE III. *Private Letter, published by request.*

MOBILE, ALA., July 29th, 1873.

Professor Joseph Jones, M. D., New Orleans:

My dear Doctor—I received your pamphlet and observations on the treatment of yellow fever several days since. I read it carefully this morning, and I am so much impressed with your statement relative to the structural changes that take place in the heart, liver and kidneys, that I feel obligated to corroborate your opinions by my own personal observations and experience. The practice most popular here is a combination of Blair's abortive—the 20 and 24 quinine and calomel in the commencing stage; and the mustard hot foot-bath, and warm drinks, from the old creole habit of giving orange leaf tea, because of its calming influence upon the stomach, and when warm promoting the action of the skin. This draught is mostly resorted to, to enable the skin to come to the rescue of the kidneys for the elimination of the poison.

The urinary secretion furnishes the best testimonial of the real condition of a yellow fever patient, and in calling the attention of the profession to this fact, Blair rendered a great service, which I regret is not yet fully appreciated. Our late Dr. J. C. Nott was the first, if I am not mistaken, to manufacture black vomit from blood by adding to it an acid in its fresh state, thus showing that there was in it a foreign element in cases of black vomit; and we know that poisoned blood, whether from pyemia, malaria, a long attack of typhoid or typhus fever, the bite of venomous insects or animals, or yellow fever poison, begets a hemorrhagic tendency, and we know that we must depend upon the skin and kidneys mainly to relieve the system of any poison that affects it; hence, no one at all acquainted with the modern notions of disease could hesitate in endorsing the correctness of your observations with reference to the real principles of treatment.

It is surprising how long our physicians have been, in duly appreciating the structural changes in important organs in yellow fever. Louis, I believe it was, who called attention first to the pathological alterations in the liver—Blair, to the albuminous urine; and that he hailed with delight the appearance of bile in the urine, and that in cases of malignant yellow fever the bile augmented *pari passu* with the decrease of albumen, until both finally disappeared and the skin was relieved of its jaundiced hue. But, so far as I know, to yourself belongs the credit of calling the attention of the profession to the feeble heart accompanying and following yellow fever attacks. Stokes was the first to point out to us, if my memory serves me correctly, (I write hurriedly, because I have not the time to look up authorities.) that fatty degeneration of the heart invariably was found in long attacks of typhus fever. Our profession here, for the most part, have appreciated this fact, for oftentimes it has been the subject of discussion in our medical society.

The absolute quietude enjoined upon the patient, that on no account should he raise his head from the pillow so as to deprive his feeble heart of its necessary nerve power, was first empirically introduced; but now, by virtue of the advancement of our knowledge of structural changes in organs revealed by the microscope and chemical examinations, we know that the feeble heart and brain is due to fatty degeneration, which in the majority of instances is only temporary, but sometimes lingers, and remains more or less as a permanent lesion. Now, nearly twelve months ago, Dr. Gaines and myself attended a boy about twelve years of age, whose disease was exceedingly interesting. His parents with their family were spending the summer at Ocean Springs, and this little boy, while playing in the water off the beach, got a splinter in the great toe of one of his feet. His mother, feeling exceedingly anxious and nervous about him, brought him to her family physician, Dr. Gaines. Dr. G., being assured that a portion of the foreign substance still remained, made a free incision, but failed to find anything; this he followed up with poultices. The second day after the incision the little fellow had fever that seemed to be paroxysmal, for which he was treated by Dr. Gaines by a mercurial purge and quinine. The incision in the toe became covered with a saponaceous deposit in the mean time, and the whole toe assumed, at the time I first saw him in consultation with Dr. G., a phlegmonous appearance, precisely resembling a neglected felon of the finger. The probe failed to detect denuded bone. The incision was enlarged, so as to take all tension off that was caused by the increased swelling. Yet the fever, in spite of quinine, and chlorate of potass. and tr. ferri mur., which was administered during the intervals, still recurred, until the system was so profoundly affected by the poison that structural changes were inaugurated in the heart, doubtless, and the nerve power was so enfeebled by the same cause, that simply the removing of him from the bed brought on a failure of the heart's action and collapse that carried him off.

Now, to my mind, reasoning from analogy, all these septic poisons are prone to beget fatty degeneration of either the heart, the brain, the liver or kidneys, or indeed all these organs, may be affected. This is true, let the poison be either that which generates typhus, typhoid or yellow fever or diphtheria; not so common in malarial fevers, yet sometimes occurring. But in malarial disease the feeble heart is doubtless mainly due to impoverished blood, and from its scanty nourishment, and the structural changes are not so rapid and marked as it is in the other diseases mentioned.

In my early experience, I practised for a few months in the prairie region of East Mississippi, and after the country was drained, and in a high state of cultivation, malarial diseases became almost a disease of the past, and occasionally there would be an outbreak of typhoid fever on the plantations, and in the early fall when the cold nights would check the secretions of the skin, and tax the kidneys additionally, and the kidneys (enfeebled) not being equal to the task of elimination of the poison of the disease and its morbific products, and the nervous system being also depressed by the change of temperature, the patient would collapse, and die apparently of congestion of some of the internal organs, but really of a feeble heart, and not of internal congestion due to malaria. This is the manner in which the case of diphtheria died; he collapsed from a feeble heart. The pulse, after the cessation of the fever, gradually grew slower and of a soap-bubble character. The point of incision remained unhealthy, and took on ulcerative action, the first phalanx being destroyed by it, and the whole surface remaining covered by the diphtheric deposit: and the fact that it was diphtheria was fully established by the outbreak of the disease in other members of the household, with the characteristic lesion in the throat, of which one of them died. In the fall of 1870 I had a very severe attack of yellow fever with a relapse on the thirteenth day, from over-eating. From all the facts relative to the natural history of the disease that I could gather, I believed that the poison in the great majority of instances had expended itself after the ninth day, although on the fifth day of my attack my fauces and pharynx were covered with a diphtheritic deposit. I did not then, nor do I yet regard it as a complicating attack of diphtheria, having oftentimes seen saponaceous deposits on inflamed surfaces in septic diseases; and appreciating at the same time the fact that I had suffered during the greater part of my life from a follicular pharyngitis, I construed the deposit simply as a local manifestation of a poisoned condition of the blood of a high type. By the tenth day my tongue was stripped of a heavy brownish fur that covered it; the mucous membrane of the pharynx, and throat as far as visible, was denuded of its epithelium, and doubtless this desquamation had taken place in the interior of the stomach, and possibly had extended throughout the greater portion of the length of the intestinal canal. The whole aspect of the tongue was that peculiar condition oftentimes seen in typhoid fever, compared to raw beef, so completely stripped of its epithelium that the fibres of the muscular structure could be outlined with the eye. This desquamation was completed by the end of the ninth day. With a feeling of safety I took some solid food on the thirteenth day, but I had scarcely swallowed it before I became dizzy, and this was soon followed by a faintish feeling, and although occupying the recumbent position, I soon became unconscious, and collapsed, and did not react until my stomach was emptied by vomiting, in the early part of the night, of its contents—a large quantity of black vomit and what I had ate in the morning. After this, reaction came on, and to the skill of my friends, Drs. Gaines and Ketchum, I owe my recovery. My convalescence was slow, yet I appreciate the fact that my heart has not regained its former vigor, notwithstanding my health otherwise is better than it was previous to the attack. Any over-exertion, running up and down stairs, mental anxiety, and especially the least imprudence in diet, notifies me of the feebleness of my heart. My muscular system, generally, is fully as good as it was previous to the attack. Now, I believe that the disease produced in my heart's muscular structure fatty degeneration, from which I have not yet entirely recovered. I have seen this feeble heart follow attacks of yellow fever in other instances. I attended in his last sickness the distinguished divine of the Methodist Episcopal Church—the late Rev. Dr. Neely—who died of it. No post-mortem examination was allowed, yet all the indications pointed to death from a feeble heart, nearly two years after his attack in 1867. This feebleness is appreciated in the treatment, but the cause that gives rise to it is not generally understood. Every practitioner at all acquainted with the most approved method of treatment understands that the recumbent position, strictly observed, is essential to recovery in the great majority of cases, and that, sometimes, those suffering from mild attacks lose their lives by simply getting out of bed. The question naturally arises, why is this so? The failure in the circulation certainly points to the heart. If you observe the condition of the nervous system, rationally you are forced to admit that the great nerve centres remain intact. It can't be in the ganglionic system, for simple change of position would not so seriously affect this. Then by exclusion we must look to the circulatory system. You observe it in the capillary stagnation first, which, if not relieved, is likely to develope albuminous urine, black vomit, and death. The indications are plain and well understood—arouse the heart to increased action by both internal and external stimulation. Every indication in the treatment of yellow fever, as we commonly see it, points to the heart and its feebleness after the paroxysm of fever has subsided; and this, even in the absence of post-mortem examination, would cause us to suspect structural transformation into a tissue of a lower type than healthy muscle, which of course would be fat. This feebleness of the heart is probably more rapidly developed in yellow fever than any other disease; but doubtless to a greater or less degree in all diseases that affect the nutritive function, and especially in those in which blood poison is the precursor and the producer of the lesions found.

Louis ransacked the liver for pathological lesions; Blair called attention to the urinary organs. But empirically, by virtue of the indications of treatment, viz., to support a feeble heart as the organ primarily involved, after the disease is developed by the creation of the poisoned blood, was I directed to the heart. Then comes the renal lesion; it is nothing but a congestion causing albuminous urine, and suppression which may end in structural disease, as we see congestive nephritis of pregnancy may become organic. The liver sometimes undergoes fatty degeneration. Capillary congestion of the stomach takes place, the mucous membrane of which is stripped of its epithelium, and the blood, unfit for replenishing tissne, oozes through the capillaries, and terminates life by black vomit. As already indicated, there is a marked analogy in all diseases from blood poison, whether typhus or typhoid fever, diphtheria, pyœmia, the bites of venomous reptiles or insects, the exanthemata, and also in malarial fevers. And this resemblance is strikingly marked in the changes that take place both in the fluids and solids. Reference has been already made to the hemorrhagic influence of these poisons. But in the solids, many might be credulous about the rapid degeneration of tissue essential to produce the feeble heart so familiar to every practitioner at all acquainted with yellow fever. Yet when we reflect how rapidly bodies decompose after death, especially those dead of malignant blood poison, and when we recollect that fatty degeneration is the first step in post-mortem decay, we can understand how a fever, existing for thirty-six or seventy-two hours, creating a virulent poison, might determine an influence which would inaugurate structural change to a limited extent, even previous to death; and in this way alone can we rationally explain the rapid decomposition after death that we find in persons dying of malignant poisons.

I fear I have wearied your patience, and will not impose upon you the task of reading more upon this interesting subject, so prolific of thought and research. If you think this paper worthy of publication, you may turn it over to the Editor of the *New Orleans Journal.*

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V

ARTICLE IV. *Galvanocaustic.* By Y. R. LE MONNIER, M. D., Visiting Surgeon, Charity Hospital, New Orleans.

DEFINITION—DIVISION.

By galvanocaustic is meant that description of surgical operations, which are performed with the electric heat. It has been applied to the cauterization of all kinds of fistules (fistules in diseases of bones); to prevent and stop hemorrhages; to destroy the dental pulp; to sever by means of a metallic wire, reddened by the heat developed by a pile, the pedicles of different polypi, hemorrhoidal tumors, etc. Its advantages are the absence of hemorrhage, the rapidity and energy of its action, the effects of which are limited most exactly; the possibility of burning or dividing parts deeply seated and often inaccessible to the cutting instrument, and introducing and displaying the instruments in a cold state, without frightening the patient. Once everything ready, a mere pressure with the finger on a connecting link is sufficient to bring the metallic wire, which is to cut, to a most intense heat;

then in interrupting at will the current, the instrument becomes cold.

The operations reported below are, I think, the first of the kind ever performed in this State, by means of the galvanocaustic; and having been asked by both physicians and surgeons for information respecting the instruments and modus operandi, I think it necessary, prior to reporting these cases, to enter into some details.

In the use of the term "galvanocaustic" in this paper, I must be understood to refer solely to the *thermal* effects of electricity.

HISTORY.

It was Heider of Vienna who, in 1844–45, (*Zeitschrift der Gesellschaft der Aertze zu Wien*, 1846, *II., Johrg. Bd. II. p.* 421) at the request of Prof. Steinheil, of Munich, first tried to cauterize the dental nerves by means of galvanism. The same operation was advised by Louyet, about that time (*Archives de la Médecine Belge, Décembre* 1844, 4° *cahier, p.* 350).

1846. G. Crusell, of St. Petersburg, shortly after published his researches on this subject.

1849. M. Sédillat (*Traité de Médecine Opératoire, p.* 146, *Paris* 1853) reports having published in 1849, the observation of an erectile tumor radically cured by the galvanic cautery.

1850. John Marshall, Surgeon to the London College Hospital (Medico-Chirurgical Transactions, vol. xxiv., p. 221, 1851) mentions the cure, by galvanic cautery, of a fistule of the cheek, which had resisted all other means of treatment.

1851. Thomas Harding and George Waite make use of this method to cauterize teeth.

1852. Hilton, at Guy's Hospital, London, removed with a platina wire, attached to a Cruikshank pile, an erectile tumor.

1852. M. Nélaton, (*Gaz. des Hospitaux*, 1852, No. 69) mentions having used this mode of operating in several cases of different kinds, with a remarkable success, and shows its superiority over other means of treatment in these cases.

1852. Leroy d'Etiolles (De la Cauterization d'avant en arrière, de l'eléctricité et du cautère électrique, p. 46; Paris, 1852) mentions briefly the use of this instrument in strictures of the urethra.

1853. M. A. Armissat (Comptes rendus des séances de l'Academie des Sciences, 1853, séance du 4 Juillet) made use of the heat developed by a pile of Bunsen to cauterize the internal surface of a ranula, the cervix uteri, and for the removal of different tumors.

1853. Ellis (The *Lancet*, 1853, No. 22) employs this method in the cauterization of the neck of the womb, and recommends it in the prolapsus of the uterus and vagina.

On the 30th of March, of the same year, Middeldorpf, who is erroneously looked upon as being the inventor of galvanocaustic, but who, by the great improvements which he has made, has popularized its use, made his first operation (extirpation of a fibrous naso-pharyngeal polypus). From this time dates his instrument.

1857. His experiments with M. Paul Broca: To-day, M. Paul Broca, my former teacher in the hospitals of Paris, and to whom I owe my first knowledge of the use of this instrument, is the one who has achieved the most for the simplification of this apparatus, and rendered it easily transportable. In 1857 he published a statement of the uses of the apparatus and of the changes made by M. Grenet, whose pile is the one now substituted for that of Middeldorpf. Since then, many operations have been performed, and in those in which I have assisted, or operated, abroad or at home, success has so far crowned our efforts.

APPARATUS AND INSTRUMENTS.

As it is for medical men and not philosophers that I write, let us, in a few words, recall to our minds the different physical phenomena to which surgery is indebted for this valuable method.

As above stated, galvanocaustic being the subject of this paper, I will not touch upon the chemical part of the subject.

When we take in our hands the two conductors of a galvanic pile, a slight shock is felt, both at the moment the circuit is shut off by the contact of the hands, and when it is broken by the cessation of the contact. If the pile has a powerful *tension*, i. e., if it is composed of numerous elements, and especially if the hands or parts that shut the circuit are moist, two phenomena are simultaneously observed: 1st, the shock, as above stated; 2d, a sensation of heat The most remarkable result of a pile with a large surface continuously under chemical action, is elevation of temperature when the circuit is shut, which temperature is in proportion to the surface exposed. It is thus that in physics we see small wires of iron and other metals redden and melt when placed within the electrical circle.

Two things control the production of these phenomena: the nature of the pile and that of the conductors.

We know what is meant by tension, but this is not required; we must have *quantity;* i. e., the pile should be composed of elements so arranged that the alternations of the pairs of metals and liquids be as few as possible, whilst the surface of these elements will be as large as possible. We know that *the strength of a pile is in proportion to the extent of surface of the elements of each pair.*

The *source* and mode of producing heat being known, what conductors will give the greatest caloric?

Natural philosophy has shown us, that the weaker the power of conductibility, the greater the facility with which incandescence takes place, and that the heat developed by the electric current depends upon the resistance which that current has to overcome in passing through its circuit. Therefore the resistance which a conductor will oppose to the passage of heat, will be in inverse ratio to the size of its wire; *e. g.*, take two wires, Nos. 1 and 3. No. 3 will give a heat three times weaker than No. 1, because it is three times larger; and vice versa. Platina is the metal selected for the cauterizing wire, both on account of its inferior conducting power, and especially its resistance to fusion.

Another most important point is this, that if the conductor is not homogeneous, heat will be exclusively developed in those places where the resistance is the greatest. The benefit to be derived from a hetereogeneous conductor will be more fully appreciated in the description of the apparatus, where we see the conductors are of brass, and the instrument, properly speaking, *i. e.*, the cutting and cauterizing part, of platina.

Time and space not allowing me to enter too minutely into details, I am obliged to leave aside minor items, however interesting they may be.

The apparatus of M. Middeldorpf I will not mention, it having been greatly superseded by the improvements made by M. Grenet, whose battery is the one now mostly used. In addition to the improvements of M. Grenet, another, not less important, has been added by M. Broca, who greatly simplified the galvanocaustic arsenal, by substituting one common handle for all the instruments, whereas in the apparatus of Middeldorpf each instrument has its handle.

A word about this handle. It is composed of a piece of black ebony, or ivory, through which pass longitudinally two large copper wires, which by one extremity are affixed to the conductors, and by the other to the instrument. These two wires are isolated by means of an ivory disk placed between them. Whatever be the shape of the platina instrument, it may be compared to a semicircle which unites both ends of the conductors, and thus the circuit. It is this platina which, for reasons above mentioned, alone is heated, when the galvanic current is established.

In its passage through the handle one of the copper wires is cut obliquely, in such a manner, that at this point the operator may, at will, shut or open the current. By pressing upon an ivory button (exactly similar to what we see in a telegraph office) he establishes the current, by overleaping the cut edges of this wire, whereas, if the pressure be removed, the solution of continuity between the two ends is again established, and the circuit thus interrupted.

The principal instrument is a platina thread shaped in a loop, by means of which tumors are pediculated and extirpated, fistules are cut open, etc. Besides this (the principle being always that of a semi-circle, by means of which the current is established) any shape may be given to a platina wire—according to necessity—from that of a bend to that of a spiral.

The pile of M. Grenet consists of 14 plates of coal and zinc—6 zinc and 8 coal—about 5 inches square, and the fifth of an inch thick, placed alternately on a grooved frame. This frame has a double bottom which communicates with an india-rubber pipe attached to a bellows. We shall come back to the use of the bellows.

These plates are plunged in a liquid composed of the following: sulphuric acid, bi-chromate of potash, of each 20 ounces, water, sufficient quantity to cover the whole battery.

The pile of M. Grenet is based on this principle, that all bodies capable of exciting oxydation in the liquid state, may be used for the production of electricity, and thereby serve for the construction of a pile. This idea was not new, and Bunsen had already proposed the bi-chromate of potash. But it was noticed that if the current was established, it soon ceased. It was afterwards discovered, that this was due to the oxide of chrome, which, depositing itself on the zinc, intercepted the current by isolating the zinc. It was then that M. Grenet discovered that this deposit could be dissolved in the bi-chrom. of potash by forcing a current of air through the liquid. Hence the use of the bellows.

HÆMOSTATIC ACTION.

Does it exist? Yes, but under certain circumstances. What is that action, and what results from the contact of the galvanocaustic thread with a blood-vessel? The current acts both on the liquid,—the blood, and the parieties of the vessel.

1st. *Action on the blood.* Galvanic currents have a special action on the blood, *whose albumen they coagulate.* Numerous experiments have been made by M.M. Gerard and Clavel, Broca, and J. Regnauld.

When the two conductors of a pile are placed in the serum of blood, in a few seconds two phenomena take place:

1st. Gaseous bubbles are set free.

2d. Albumen is coagulated.

Not much practical interest being derived from the first of these phenomena, we shall direct our attention to the second, which seems to commence immediately after the gaseous disengagement. It only takes place at the positive needle, and shows itself in the shape of white flakes, adhering feebly to the needle. The size of this coagulum is never large, but if it is separated from the needle by a slight traction, a new coagulum soon forms.

No true coagulum is to be seen at the negative needle.

The cause of this phenomenon lies in the fact, that the neutral salts of the serum are decomposed by galvanism; the acids go to the positive pole, the alkalies to the negative. Acids coagulate albumen; alkalies have no such action on it. It would seem, that the greater the oxidability of the metal of the positive needle, the greater its action.

This, in truth, would not be in favor of our thesis, the active part of the instruments being made of platina, which is, as previously stated, a feebly oxidizable metal. In fact, its coagulable properties have been contested. Werner Steilin has advanced the idea that with platina needles, water, salts, and albumen undergo no changes. This is exaggerated, but having no personal experience, I am happy to state M. Broca's opinion on the subject, whose competency in this matter is undoubted: "These assertions," he remarks, "do not agree with what I have seen. The chemical action of the pile acts very well on albumen by means of needles of gold, silver, or *platina.* This action, it is true, is more rapid, and might be more energetic when we use very oxidizable needles, but the difference is far from being what M. Steilin reports it to be." (Broca: Traité des Anévrysmes et leur traitément.)

2d. *Action on the vascular parieties.* This is the most efficacious. It is not sufficient that the blood be coagulated. The clot of blood is rather weak. Hence the frequency of secondary hemorrhages when the hæmostatic acts upon the blood only. Experience has proven that the clots formed by galvanism are of a remarkable frailness. Therefore if the blood was here the only substance influenced by galvanism, the effect produced would most probably be a momentary one. Another factor is consequently necessary to constitute this hæmostatic action, so powerful at times. It is this factor which we are about to study.

"Cauterization produces an eschar, this eschar obliterates the opening of the vessel, and the blood, unable to circulate with facility, coagulates and ceases to flow." Such is the theory. What does practice, *i. e.*, experience, say?

What takes place if, with a piece of iron having a conical shaped end, a line in diameter at its apex and three at its base, heated almost to a *white heat*, we cauterize the opened extremity of an artery, say the femoral? The artery is carbonized, then, closing up gradually, it finally leaves but a small opening, about one-third its primitive size. If the experiment is again performed with the iron *less hot*, *heated to a dull red*, the carbonization is very light, the closing up more rapid, and if the cautery is left some time in contact with the vessel, this one is seen rolling back upon itself; and, what is curious, the three coats take a part in this rolling up. If the artery is opened, we see its three coats end in a cul de-sac at the point last cauterized; from hence they ascend in the vessel. At the summit of the cone exists a very narrow opening, scarcely visible.

A similar result has been obtained with the veins.

Such are, as regards the hœmostatic action, the two phenomena resulting from the galvanic cautery. This is positive, absolute. But does this mean that it never fails? No; for unless certain conditions are observed it will fail.

1st. The *wire must not be too fine*, for its passage is too rapid and it cuts like a knife.

2d. The most essential and indispensable condition is that *the thread be heated to a dull red heat only.* It is the result of observation that a white heat cuts like a knife; because the more intense heat of the small wire produces rapid and complete combustion of the tissues, and they are mostly changed to gaseous products, like fuel in a grate: they disappear before the wire, and solution occurs, as under a knife.

3d. We must *operate slowly*, in order to act little by little consecutively on each of the fibres of the vascular parieties.

4th, and lastly, care must be taken when operating in vascular regions, to compress the base of the tumor, in order that, at the moment of cutting the arteries, they be in a state of emptiness. For the arteries being empty, they will be better able to roll back upon themselves and form the cone-like projection which obliterates them. If, on the contrary, at each impulse of the heart the blood reaches the very end of the artery, we readily understand that this internal coiling up of its coats is more or less impeded, and on the other hand, a new supply of blood being continually brought in contact with the heated platina, there cannot be a clot formed by the coagulum of the albumen of the blood, as it is carried off as rapidly as it is formed. Hence the superiority of the cutting loop over the other galvanocaustic instruments, which has to be tightened down to be able to cut, and whilst it does cut, by its previous constriction it has prevented the flow of blood into the vessels, and so doing relieves us of the trouble of compressing.

GENERAL APPRECIATION OF GALVANOCAUSTIC.

The principal advantages of this method are the following:

1st. *No hemorrhage.* As the platina wire passes through the tissues, it cauterizes and produces the coagulation of the blood and an obliteration of the vessels. It is not that all operations of this kind are exempt of hemorrhage; for if we use a thin wire it will act more like the knife, and its passage is too rapid for the hæmostatic effect to take place. With a coarser wire, gently and slowly tightened, the cauterization will extend to quite a depth, and all effusion of blood is surely stopped.

2d. The *rapidity and energy of its action*, and we might add the absence of all well marked pain. These results are due to the instantaneous mortification of the tissues under the influence of an intense heat.

3d. The *exact limitation of the effects of the operation*, and thereby the absence of an acute inflammatory reaction, either local or general. We have never to this day heard of an accident happening subsequent to the use of the galvanocaustic, and to take pyemia as an example, we have seen many patients die in the hospitals of Paris of this disease, after the use of the knife.

4th. The *possibility of burning and of cutting deeply-seated parts* which are absolutely inaccessible to the cutting instrument, or cannot be reached without danger. But, to be able thus to manage electricity in the very depth of cavities, a special instrument was needed—the galvanic porte-ligature or cutting loop.

5th. The *production of healthy granulations*—same as with the actual cautery.

6th. Finally, to use the words of Middeldorpf, "galvanism, substituted for the actual cautery, has the advantage of not offering to the sight the spectacle of a forge of cyclops fired up by a groaning bellows, from whence the surgeon, the red hot iron in his hands, precipitates himself on his frightened patient."

7th. The instruments not in communication with the battery are introduced in a cold state; once in place, a pressure with the finger is sufficient to establish the current, which brings them to a most intense heat; in an instant, and at will, the current is interrupted, the instrument immediately cools off and is withdrawn.

Such are, in an abridged statement, the advantages, modus operandi, etc., of galvanocaustic, which, however, is not without its disadvantages, which are very secondary compared to its great advantages: the high price of the apparatus; the possibility of melting the platina wire (which happens when it is not in contact everywhere with the tissues, and especially when it has become unequal in size, and the heat concentrates in one place); or breaking it, if too much force is used, etc.; but these are easily remedied, as it has twice happened to us, by having extra platina wires. Finally, the crossing of the wires might annul all thermo-electric effect. With care, however, this does not happen.

(*Concluded in next number.*)

CLINICAL REPORTS.

Treatment of Tetanus. By J. McF. GASTON, M. D., Sao Paulo, Brazil.

To give a detail of the separate treatment of these several cases would not only prove tedious but be unprofitable for any practical end; yet it may be stated in general terms that idiopathic tetanus occurred in two mulattoes of about ten years of age; one being male, and the other female. Traumatic tetanus, in two negro men; one from a recent wound in the scalp, and the other from an old fracture of the tibia, which was not properly adjusted. The other two cases were in white men; the one clearly of traumatic nature, from the kick of a horse on the leg; and the other of doubtful nature, but dependent on the suppressed eruption of the leg, and hence perhaps appropriately classed as idio-traumatic tetanus, if such a term is admissible in pathological nomenclature. Idiopathic in two negro men, and traumatic in one negro woman.

An outline of the characteristics of one case which was clearly traumatic in its nature and most completely developed in all its phases, may be accompanied with a notice of the various measures adopted, so far as to illustrate more fully the general practice which has been pursued in these cases of tetanus.

The patient was an able bodied negro man who had received a blow upon the left side of the head traversing the junction of the parietal and occipital bones, and about 2½ inches in length. He was occupied with the usual field service of a slave for several days after receiving the blow, and on the sixth day from the accident I was called to examine and treat the case which presented the following symptoms:

Surface dry and warm, with increased heat of forehead; tongue dry and fevered; pulse frequent, but without tension; rigidity of the muscles, especially of the back and lower extremities, with frequent convulsive movements and backward curvature of the body, attended with clinching of the teeth. Upon inquiry of the patient he complained of pain in the epigastric region and in his lower extremities. Up to this point no history of the case had been given to me, but from the combination of symptoms I was induced to inquire if some injury had not been received, and my attention was for the first time directed to the scalp wound on his head. It appeared to be attended with but little surrounding inflammation, and the edges were closed by a species of agglutination, but no proper union of the parts existed.

Upon making an exploration of the wound, it was readily opened with the handle of a scalpel, and found to extend to the bone, but without injury to that structure. The edges within had a dark saneous appearance, without any indication of suppurative action.

A piece of lint saturated with spirits of turpentine was placed in the wound, and a poultice of corn meal with flax seed was applied over it. Having made these local dressings, I proceeded to the general treatment.

A portion of tartar emetic being put out and given to the lady of the house, to be dissolved in a tumbler of water, she expressed her surprise at the quantity, as she said it would suffice to puke all her household. But with the assurance that it would be administered so as to note its effects, she did as directed, and proceeded to give two tablespoonsful of the mixture with half a tea-cupful of warm water every 15 minutes. In the mean time I had directed water to be put into all the larger pots about the house and brought to the boiling point; but upon inquiring for a suitable vessel in which a bath at full length might be arranged for our patient, it was positively asserted that nothing of the kind could be found about the place. But from various expressions of the good lady I was impressed with the idea that she supposed this bath, with so much hot water, would be the death of her negro fellow, and hence could find nothing to serve this end. Without raising any question, it was quietly proposed that she should furnish me two negroes with picks and spades to open a hole in the dirt floor of the room where the patient was lying, into which, she was informed, that the water would be emptied. and serve as an excellent substitute for the trough, or long bath-tub, for the present occasion. Other difficulties were suggested by the owner, but finding that my directions must be carried out, or that she must allow me to retire from the further management of the case, there was brought forth from some hidden recess, a most appropriate dug-out family bath tub, thus permitted my patient to be laid at full length in the water, and covered over with blankets, excepting his head, which was supported by a wooden pillow, and kept covered with clothes wrung out of cold water. The two tablespoonsful of the solution, containing 1 grain of tartar emetic to each tablespoonful, was given regularly every fifteen minutes during an hour and a half that he remained in the water, kept warm by frequent additions from the boilers. To the great surprise of the lady of the house it did not cause him to throw up, nor induce any great deal of sickness of the stomach, but was attended with a most marked relief of the spasmodic rigidity of the muscles, so that upon being removed from the bath and wrapped up in blankets the patient slept and was soon covered with perspiration. The relief was only temporary, and the patient awoke with spasmodic rigidity of the muscles but in a more mitigated form than at the outset.

A combination of calomel grs. 5, tartar emetic gr. 1, nitrate of potash grs. 10, and morph. gr. $\frac{1}{2}$, was now given every two hours until repeated six times, and afterwards three tablespoonsful of castor oil with a tablespoonful of spirits turpentine was administered, which procured evacuation, without, however, inducing free purgation.

During this period the spasms had continued with less intensity, and now appeared at longer intervals and milder in their character, yet still distinctly of a tetanic nature.

Frictions with camphorated spirits of turpentine were made frequently throughout the entire extent of the spinal column, and over the epigastric region, and a flannel moistened with this was kept constantly applied over the abdomen. In the mean time a blister was applied to the occiput and neck, with a view to produce counter irritation in the first instance, and to induce a drain secondarily by which the brain, and especially the medulla oblongata, might be relieved.

Having reached the end of the second day's treatment, 1 grain of morphine was administered at night, and repeated within four hours, to procure rest; and after the second dose the patient slept several hours; but the morning of the third day of the treatment and the fourth of the disorder found him still laboring under rigidity of the entire muscular system, with occasional attacks of opisthotonos and trismus, which were accompanied with spasmodic action of the diaphragm that gave rise to a sound closely resembling that of hiccough.

Regarding this stage of the disorder as involving chiefly the nervous system, a wine glass of the lac assafœtidæ was given every three hours; and an enema of half a pint of the infusion of tobacco with a teaspoonful of laudanum was ordered to be given and repeated in six hours. With this course of treatment the attacks were moderated, but did not yield entirely; and on the following day, which was the fifth day of continued tetanus, he was given ten grains of sulphate of quinine with half a teacupful of infusion of valerian every three hours until a drachm of quinine was taken, and was ordered injections of lac assafœtida with laudanum every six hours.

The sixth day did not still find him free from spasmodic rigidity and recurrence of the convulsive attack; but considering the dangerous violence of the disease as having been subdued, he was ordered simply to use the infusion of valerian and an occasional injection of lac assafœtida during that and the following day, and with generous diet. He had now reached the eighth day, and continued with the tetanic symptoms, so that I was prompted to resort to a desperate expedient that, though recommended highly, I had never had the courage previously to put in practice. Commencing cautiously, strychnine was given in doses of 1-16 of a grain every two hours, and the quantity increased each hour of its administration, until it reached the dose of a ¼ of a grain, and was continued for 24 hours, but without any benefit, and hence abandoned as unsuited to the case, the tetanic rigidity being intensified. Subsequent to this, I resorted to the use of a combination of ipecac grs. 2, opium gr. 1, and cal. gr. ½, repeated every four hours during the day, leaving him to rest at night, which being kept up for three days, with a liberal diet, slight ptyalism supervened, and all the symptoms wore a more favorable aspect. He now took a full dose of castor oil, which operated with the most salutary result, and the treatment from that time was simply addressed to building up the exhausted frame of the patient, and without any recurrence of tetanic developments.

This well marked case of traumatic tetanus occupied twelve days of energetic treatment before yielding in a marked degree, and may be considered as continuing through fifteen days from the access to the entire disappearance.

Those who read carefully the points of practice will perhaps concur that each step adopted, barring the use of strychnine, had its importance in the result; yet, without the alterative influence of the mercury, ipecac and opium, the cure would not, perhaps, have been effected. As the repetition of tetanic manifestations was likely to exhaust the powers of the patient without the favorable effect of the above remedies, their final curative agency is unmistakeable; yet we may attribute the result to the general treatment, and to the co-ordinate influence of the means employed in the management of the case from its incipiency to its close.

As a report of cases and treatment leads each to judge as to what has proved effective in the application of the measures of relief, no comments are requisite on my part.

The climate of this region modifies to a considerable degree the character of this affection, as it does, indeed, most other diseases; and while a predisposition exists to this form of disorder, it is not marked by such nervous disturbance as in the southern portion of the United States, and yet with greater derangement of the various secretions. Some speculations might be presented upon the influence of the cool nights and warm days of this latitude, as contrasted with the more equably warm temperature of summer and the more equably cool temperature of winter in the United States; but let this suggestion suffice for the present.

It may be here added that another case of tetanus has been treated with a different result; and as the exception is said to prove the rule, it is proper that a detail of the course pursued in this unsuccessful case shall accompany those that were more fortunate.

June 22d, 1871. A negro woman of twenty-two years of age and robust form, had complained the day previous of pain in the head, for which she took a dose of epsom salts with pepper tea, that had acted freely during the night, and about noon of the present date she was seized with a convulsion, rigidity of the muscles, and sense of uneasiness in the epigastrium. Upon my arrival, she was found with the lower extremities extended and with fixed rigidity, while the muscles of the back were contracted so as to give the spinal column a very decided backward curvature, yet the jaws were opened with facility, and the tongue presented a slight furring, with the edges thinned and red. An examination revealed an herpetic eruption over the lower portion of the false ribs on the left side that was evidently of some standing, and now presented indurated scabs, indicative of a retrocession of the inflammatory action. No wound or other inflammation was found in any part, and her intelligence was unaffected, while no complaint of pain was made.

All in all, the case was rather of an adynamic character, with a pulse of 100 to the minute and wanting in volume and force. This combination of symptoms left no doubt in pronouncing the disease as tetanus; and again we may employ the term idio-traumatic to characterize its origin, as the disturbance appears to have resulted from the retrocession of the herpetic inflammation.

As notes of the entire treatment of this case have been preserved, the details could be given with minuteness from hour to hour, but as no practical advantage would be derived from such a lengthy notice, only a general outline of the measures employed each day will be given. A warm bath at full-length was employed for an hour, and she took during the first night every two hours, 20 grains of nitrous powders, with the addition of 1 grain of tartar em. to each dose, and ½ grain of sulf. morph. to every alternate dose, and applied over the stomach and abdomen a cataplasm of tobacco, with frictions along the spine and inner part of the legs, with camphorated spts. of turpentine. Diet of corn gruel.

June 23d. The patient passed the night without sleep, but had no return of the violent convulsion, and the limbs were now relaxed so that she could draw up her legs without inconvenience; but the clonic spasms were repeated every few minutes in a mitigated form, and the opisthotonos still existed, yet it was less than on the previous day. The nitrous powder in doses of 20 grs. every two hours was continued without the addition of tartar em. or morphine. The abdomen being tense and distended with hardness, and not having any action on the bowels, in the afternoon she was ordered two tablespoonsful of castor oil with a teaspoonful of spts. of turpentine. Upon my night visit, the manager of the fazenda informed me that he had given 3 tablespoonsful of the oil instead of 2 as directed, as subsequently the action was excessive, leaving the patient prostrated and clearly aggravating the symptoms. She took during the night a tablespoonful of lac assafœtida every 3 hours, and continued the appliaction of camphorated spts. of turpentine over the spine and along the inside of the lower extremities. Chicken soup.

June 24th. It was evident that the case was not progressing satisfactorily, as the occurrence of the paroxysms was more frequent and with greater violence than on the day previous, and the red appearance of the eyes and point of the tongue indicated more of a typhoid condition of the system. She was put on the use of ipecac. 4 grains, cal. 2 grains and opium 1 grain, every four hours, and ordered a warm bath for half an hour, or less time in case of relaxation or the supervension of marked debility while in the water. In the intervening 2 hours. the lac assafœtida was continued and the frictions were repeated with camphorated turpentine, on the spine and legs. In the afternoon it was found that her strength was failing, notwithstanding that no further movement of the bowels ensued, and she was put on the use of the following mixture: ℞ carbonate of ammonia 3 drachs; Tinct. Camph. 1 f℥; mucilage of gum arabic 6 f℥. Mix and take a tablespooonful every two hours, with a tablespoonful of lac assafœtida in the intervening hour, and one of the powders of ipec., cal. and opium, to be repeated every six hours. She had been ordered nutritious diet from the outset, and was served regularly with concentrated chicken broth, but now this was to be substituted by mutton broth.

June 25th. Upon my visit to-day the violence of the spasmodic action had subsided into an oft repeated twitching of the muscles, with a constant rigidity of the muscles of the back and a stiffness of the jaws to such an extent as scarcely to open the teeth, but revealing a dark, patched tongue, with dryness of the entire mouth. Upon a special examination of the gums and the breath, mercurialization is found to be developed, and the use of the powder of calomel is discontinued. The mixture of carb., am. and the assafœtida are repeated alternately every two hours, and the mutton broth is urged as necessary, though up to this time it has not been prepared, owing to the difficulty in getting a sheep in a suitable condition to butcher.

June 26th. The patient is reported dead.

It may not be unprofitable to introduce in this connection a notice of a case that in the outset similated tetanus, and yet eventually resolved itself into spasms of a hysterical nature, with spinal irritation.

July 13th, 1871. A robust negro woman, of about twenty-three years of age, was seized with clonic convulsions, supposed to be the result of a flogging, received a few days previous, from which excoriations of the buttocks had been produced to an extent that might well give rise to constitutional disturbance, and yet there was an absence of febrile excitement. The surface was cooler than natural, and the extremities demanding an application of artificial warmth.

It was stated that at the time of the flogging she was menstruating, and that this ceased suddenly, so as to complicate the case. She complained of violent pain in the head, and in the epigastric region, with great sensitiveness upon pressure along the spinal column; and in the recurrence of the paroxysms, the lower extremities as well as the arms were forcibly extended, and continued in a state of rigidity for some minutes, but after these attacks she returned to a natural state without notable contraction of the muscles in any part. Viewing the case, however, as partaking of the nature of tetanus, she was given calomel grs. 10, tart. emetic grs. 2 and sulph. morph. gr. ½ every two hours until repeated three times, being placed in the mean time in a warm bath for more than an hour, and after being removed from the water friction was freely made along the spinal column with camphorated spts. of turpentine, and the flannel used in making the friction was left bound over the lower dorsal vertebra (which was the point of greatest tenderness) until it produced vesication. A poultice of tobacco was applied over the epigastric region, and inhalations of chloroform were resorted to upon each recurrence of the convulsions, with the evident effect of shortening them and lessening their violence, but not arresting the paroxysms. Finding her urine turbid and partaking of a greenish hue, she was ordered nitrate of potash grs. 15, calomel grs. 2, tartar emetic gr. ⅙, every two hours, and after taking these portions she became quiet, and slept from midnight until the following morning.

14th July. Shortly after sunrise the convulsions appeared again, and the powders of nitrate of potash, calomel and tartar emetic, were continued until three more were taken, but without controlling the paroxysms, and not having had action of the bowels she was ordered two tablespoonsful of castor oil with a teaspoonful of spirits of turpentine, which operated with some relief, as the spasms did not assume the form of clonic convulsions afterwards, yet continued with irregular contractions of the entire muscular system, partaking of the hysterical character. She was now ordered to take 2 tablespoonsful of lac assafœtida with half a tea cup of infusion of valerian every three hours, and to adopt a nourishing diet of chicken soup with corn meal thickening.

15th July. Passed the night favorably, but the hysterical convulsions are repeated from time to time. Continue the treatment of asafœtida and valerian, and in the intervals ordered nitrous powders of the regular formula, but without any very marked effect, as the paroxysms continued. At night it was determined to apply means directly to induce the return of the menstrual flow, and mustard plasters were placed on the inner part of the thighs with apparent relief of all the symptoms. She was ordered likewise a pill of aloes and calomel every 6 hours, and to continue the lac assafœtida.

16th July. Found the patient free from pain, all signs of convulsions and pain of head or epigastric region.

17th July. Was dismissed from further treatment, and already walked about the room.

1st Sept., 1871. Was called to this patient laboring under nervous excitement with subsultus tendinum and great sensitiveness upon pressure over the lower dorsal and upper lumbar vertebræ. The menstrual function was restored after the former treatment, and it is the period for its reappearance at present, so that the symptoms are attributable to this source of disturbance. She was given Dover powder made with the nitrate instead of sulphate of pot. and repeated every four hours in 10 gr. doses until she took three portions, when composure ensued.

2d Sept. The patient no longer manifested the irregular muscular movements, but the sensitiveness of the spinal column continued, and she was ordered a dose of castor oil, after the action of which, a dose of Dover powder was to be taken at night.

3rd Sept. Finding the tenderness of the spine persistent, a cloth saturated with camphorated spirits of turpentine was applied over the affected part, and she was ordered two pills of aloes and calomel night and morning continuously.

4th Sept. The local application having failed to relieve the spinal tenderness, cupping and scarifying were resorted to over the affected vertebræ.

5th Sept. The pills have acted regularly, but without affording relief to the spinal irritation, and 24 leeches are applied over the lower dorsal and first lumber vertebræ, with directions to promote the bleeding by application of cloths wrung out of warm water.

6th Sept. Relief almost complete—continue pills.

8th Sept. Convalescent and dismissed.

Still another unsuccessful case must be added to the list:

August 20th. An able bodied negro man of 25 years of age was found with the muscles of the neck somewhat rigid, and great rigidity of the abdominal muscles, attended with occasional contractions of the extensor muscles of the lower and upper extremities. Pulse almost natural, yet somewhat accelerated, and the surface below the natural temperature and the tongue very lightly furred.

Upon inspecting his body, various insignificant abrasions were found on the hands, arms and legs, but not indicating a bad character nor requiring special treatment, though in all probability some of these points of irritation may have induced the disturbance in his system. He was put upon calomel, tartar emetic and morphine, and laid in a warm bath for more than an hour, with the subsequent application of a poultice of tobacco over the epigastric region, and frictions along the spine with the camphorated spirits of turpentine. After repeating full doses of calomel, tartar emetic and morphine every two hours for three times, he was given three tablespoonsful of castor oil and one tablespoonful of spirits turpentine and left without other medicine for the night.

August 21st. The operation on his bowels was very slightly more than a natural evacuation, and he was put upon the use of nitrous powders in 20 gr. doses, repeated every two hours, with the use of tobacco injections at intervals of six hours. In the afternoon, finding but little alteration in the tetanic convulsions, he was again subjected to the warm bath at full length for more than an hour, with considerable mitigation of the spasms for several hours, but without any permanent advantage. He was again given oil and turpentine, and while awaiting its action he used inhalations of chloroform to the point of producing anæsthesia repeatedly, with the effect of suspending the spasms but not preventing their return. He then used injections of lac assafœtida with infusion of tobacco, which eventually induced free evacuation of the bowels, but still without any material change in the tetanic symptoms.

Upon attempting the further application of the camphorated turpentine liniment along the spine, it was ascertained that the skin had already been removed for a considerable length by the saturated flannel which was left on the lower dorsal vertebra, and hence little more could be done in the way of counter irritation on this part. The lac assafœtida was repeated with the tobacco in the form of injections, with a very marked prostrating effect and great distress, with free perspiration, but the clonic spasms continued to appear from time to time, with only that mitigation resulting from the enfeebled condition of the patient. Nutritious diet kept up.

In this state of my patient, it was the only recourse left to attempt the control of the paroxysms by a free use of ardent spirits in pure strong rum. He was given a wineglassful every ten minutes until he took a half pint, and evidently with improvement of his now almost desperate state, when I retired, leaving the further administration to be continued in the same form by his owner. After a lapse of three hours I ran to look after my patient to find that his owner, who had been left in charge, had gone to bed after giving a single portion, and that the symptoms were again more aggravated. At this stage he was brought again under the influence of chloroform, with a suspension of the spasmodic action, and the use of the rum was resumed until he took another half pint.

August 22d. He was ordered injections of chicken soup with lac assafœtida, and to continue the use of the rum, but the owner being impressed with the conviction that he would certainly die, dispatched a messenger for a priest to have him confessed, and I took my leave to learn that he died about ten o'clock of the same day.

Thus out of nine cases of tetanus treated in Brazil, two only have died, but these two were placed in my care at an early stage, and appeared quite as likely to progress favorably as some that recovered; yet similar treatment failed to avert a fatal result.

In the year 1859, an aggravated case of traumatic tetanus was treated successfully by me in Columbia, South Carolina, and reported in the Charleston *Medical Journal*, with a detail of the various agents employed, of which the chief were chloroform, opium and lobelia. The editors of the *United States Dispensatory* in noticing that case, attribute the favorable result to the lobelia; yet the cure was perhaps due as much to the general management of the case as to any specific influence of either remedy.

Further experience satisfied me that the virtue of therapeutic agents in this affection depends upon their operation on the various secretions quite as much as upon their influence on the nervous system, and a combination of their action with general regimen is essential to its successful management. Any disturbance of the nervous supply to an organ will lead to derangement of its function demanding relief.

There is a greater development of tetanus in Brazil than in the United States, owing, perhaps, principally to the influence of the cool nights and warm days of this latitude, as compared with the more equably warm temperature of summer and the more equably cool temperature of winter which prevail there. It is one of the most characteristic differences observed between these two sections, equally distant north and south of the equator, that the nights here in South America are very decidedly cooler than in a corresponding latitude in North America, while the days in summer are of nearly the same heat in each. The climate here doubtless also modifies the character of this affection, as it does, indeed, most other diseases, and it is usually accompanied with greater derangement of the various secretions than is observed even in the more southern portions of the United States corresponding in latitude north, to that of this region south of the equator.

The very peculiar phenomena of the nervous system and the muscular organization that are presented in this disease, create a strong presumption of an origin entirely different from any other element yet elucidated by science; and the extraordinary magnitude of the effect which at times springs from so slight a cause invites the pathological research of professional men. Scientific investigation has done much in determining the parts involved in this disorder, but little has yet been accomplished in fixing its seat or in understanding its origin, and the disease can not be. considered in the category of well defined pathology. Even the precise nature of the lesion which gives rise to tetanus is not properly ascertained, and the abnormal state of the cutaneous capillaries and minute nerve fibres in punctured and other wounds giving rise to this disease, should be studied carefully with a view to elucidate the mysteries of its pathology. There are certain characteristics which usually accompany the wounds that precede tetanus, indicating a loss of natural sensibility in the part, and the absence of inflammatory susceptibility in the tissues. It is observed that neither union by first intention nor suppurative action occur in such wounds, and hence they are excluded from the list of proper inflammations. The irritation of the nerves is not usually attended with pain in the part nor in the general nervous system, but is manifested prominently in the violent agitations of the muscles of extension.

Tetanus may be regarded as a peculiar disturbance of the equilibrium of the nervous system resulting from a local lesion in the traumatic cases, and dependent perhaps in all cases upon the arrest of the function of the capillaries and the minute nerve fibres of some particular part. It is doubtless a stasis in one part which induces disturbance in others. The morbid impression is conveyed through the efferent nerves to the spinal column, and from thence returned through the afferent nerves to different portions ot the organization. The pathological condition of the nervous system in this disease is a striking illustration of that reflex action of the spinal nerve centres suggested by Marshall Hall, and it goes very far towards demonstrating that close relation of the capillaries and the minute peripheral nerves with the functions of the various internal organs to which it was my object to draw attention in a paper read before the South Carolina Medical Association in the year 1860. The recognized office of the sympathetic in preserving the tone or natural tension of the capillaries is doubtless interfered with by any injury of the capillaries of a part, so that a reciprocal impairment of the organic nervous system and spinal nerves may result from the slightest infliction of injury upon the surface of the body, and especially in the extreme development of the nerves and capillaries, as in the hands, feet and scalp, in which part wounds are more liable to produce tetanic disturbance.

Glanders in the Human Subject. Reported by W. BARTON, M.D., Salado, Texas. √

Case. Mr. A. Russell, aged about 60, and living five miles from Salado, Texas, when opening an abscess upon, (as he supposed, an epizootic) horse, on the 17th March, 1873, punctured the palmar portion of his hand as the knife came from the abscess. The punctured spot in six or eight days became inflamed, with a red, hard base. A purulent sanious discharge soon followed. This was shortly succeeded by two similar tumors upon the back of his hand, and one upon the upper lip extending to the right ala nasi. These were discharging the same sanies as the first, on the 29th, the day I first saw the case. Three others and much larger tumors were now forming upon his legs, and other spots were becoming tender and painful. These tumors presented a red, shining appearance; some of them became livid; all sooner or later discharged an offensive sanies.

At first the nervous and circulatory systems were very slightly affected, appetite moderately good, and at no time much thirst. But as the disease steadily and gradually increased, exacerbations of fever and delirium came on every evening, followed by morning remissions. The appetite now failed; a muco sanious expectoration appeared, with a slight similar discharge from the nostrils. There were tremors of the whole body, and the last two days of life constant delirium. Death on the 6th of April closed the scene.

The horse had already died, the discharges from his nostrils and tumors being similar to those in this case. Dr. McKie, a very skilful physician, attended the case with me. We agreed that it was glanders, and having no treatment to rely upon, thought it best to try to sustain the patient with quinine and mild stimulants.

We also made a trial of the internal use of carbolic acid, and dressed the tumors with weak solution of same, but all without any appreciable benefit.

The period of incubation was about seven days; the time from first appearance of disease to death, 13 days.

Report of a Case of Death from the Effects of Lead Poisoning, Fifteen Years Previous, with its Pathology and Physiological Bearings. By U. R MILNER, M.D. Published by request of the Medical Association of New Orleans.

MR. PRESIDENT: Some fifteen years previous to the death of Mr. T. Von La H., an eminent pianist of this city, five members of his family, consisting of himself, his wife, Miss Eva, his oldest daughter, and two younger daughters, one about three and the other four years of age, were all taken about the same time with cramps in the stomach, bowels and extremities. Prof. James Jones, of the University, was called to attend them, and pronounced the malady to be lead poisoning. On inquiry and examination, his diagnosis was confirmed. The water for cooking purposes had been drawn for years from an elevated cistern, through a lead pipe, four or five feet long, having two brass faucets, one at the cistern and the other at the extremity of the pipe. The one at the cistern was usually left open so that the pipe was always full of water, and the family's coffee, at morning meals, was made from water that had stood in the pipe all night. Prof. Jones had the pipe removed, and examined the water chemically. It was found to contain a large quantity of the salts of lead.

The daughter four years of age lived two months in a paralytic condition, and died. The one three years old lived eight years, with great debility and other lead symptoms, and died paralyzed.

Miss Eva, not improving under regular medical treatment, was placed under the care of a distinguished homœopathist, of this city, who gave her morphine to relieve her sufferings, and the young lady informs me that she soon began to see double. The morphine was continued, however; and she awoke one morning perfectly blind; paralysis soon followed. The doctor was called in and said she was dying, and left. A regular physician was again called. For three months she could not move hand nor foot, and was confined to her bed comparatively for three years.

Her supinators have dropped three or four times, but always, after a time, recovered again. She now enjoys tolerable health, and recognizes daylight, which shows that her condition of amaurosis is not perfectly hopeless.

Mrs. La H. was sick three years with lead colics, cramps in the extremities, and intense debility, but was never paralyzed, except an "agitans" of the hands. She yet bears the marks of the terrible effects of the poison upon her blood. Three of the children, two sons and a daughter, were not affected with the poison.

I have not attempted to give a minute history of these cases, nor to follow the symptoms to show that all those of lead poisoning existed, for the fact that all were poisoned with lead was indisputably established by Prof. Jones at the time; and the abridged account given is sufficient to show the lingering and terrible consequences of that poison when once taken into the blood.

Prof. Carson, of Philadelphia, says of it: "That it produces a watery condition of the blood; and serous apoplexy may occur;

or oppressions of the brain with flushes, and restlessness, and dullness of the mind. The blood corpuscles, as well as the fibrin and albumen, are diminished. The serum of the blood becomes of a dirty yellow color. The heart becomes flabby and feeble," etc.

The object of this paper is to record the case of Mr. La H., as I deem it to be very remarkable, and of special importance in a physiological point of view.

Mr. L. suffered intensely from the beginning, and the dropping of his supinators followed soon after his first lead colic; and although he recovered strength enough to pursue his profession, he was never afterwards well. He had been long under treatment for an affection of the heart previous to his fatal paralytic stroke; and had long suffered with occasional momentary aberrations of mind, and often spoke of his imperfect and failing memory.

I was called to see him on the 22d of September, 1869. He had arisen from bed feeling as well as usual, and was dressing himself when suddenly he gave way, and would have fallen had not his wife caught him and helped him into a chair. He was insensible. They thought he was dying, and friends came in and got him into bed. I found him with laborious breathing, accompanied with loud mucous râles, and a fluttering and violently agitated heart. I applied a blister to the back of his head and neck. He passed the day and night insensible.

At my morning call, the 23d, there was slight evidence of returning sense in his attempting, apparently, to speak, and his apparent recognition of persons around him.

He was paralyzed—the tongue and muscles on the right side being partially involved, and the right arm and right leg completely. Deglutition was difficult. Pulse was rhythmical, but the heart's impulse was violent.

His breathing was now observed to be intermittent. He would breathe from nine to eleven times, and would then cease to breathe from forty to forty-five seconds. During the intermissions of respiration he lay as if asleep. His respirations were at first hurried, loud and panting, and then two or three slow and almost noiseless breathings, and he became as quiet as if dead, except the jarring of his body by the violent impulse of his heart.

At my request, Prof. Jones was sent for. We examined his urine, and found it largely albuminous. The doctor returned once.

I put him on a supporting treatment. I gave him a mixture containing the pyrophosphate of iron, strychnia, and phosphoric acid, and directed all of the beef-tea he could swallow, and ale and porter *ad libitum.*

He gradually recovered his intellect, and in two weeks his tongue and muscles of his face were restored, and he became quite hopeful, and continued in this improved and hopeful condition for two or three weeks more.

I visited him daily; generally twice, and sometimes three times a day, for sixty days, not because I had any hopes of his recovery, but to gratify him and his family, and to palliate and relieve as much as possible his sufferings. I watched him closely, and noted faithfully at each visit the remarkable phenomena of intermittent periods of respiration. I have already alluded to this. I first thought it was syncope; but I was mistaken, for the heart's rhythm and impulse were unchanged during even the longest respiratory intermissions; and the pulsations in the radial, temporal, and anterior tibial arteries were synchronous with the heart's action; and there was no failing of the circulation until towards the close of the period when the lips became blue, the muscles of the pulse quickened, and respiration was resumed with a most alarming sense of oppression on the part of the patient, which oppression he always referred to the heart, and never knew that he had not breathed for a time. This state of things continued, I say, for sixty days, whether awake or asleep. I watched it in every phase, and tried in every way to see if I could prevent the respiratory intermissions, but in his best and most hopeful hours they would come on in the midst of conversation and his utmost efforts to keep on talking. The eyes would then become fixed in a steady gaze, and generally remain open.

The average time of his respiratory intermissions was about forty-five seconds; I never counted less than thirty seconds. Forty-five to fifty-five seconds were common, and in the latter part of his illness I often counted seventy seconds. To be perspicuous: there were two periods—one the respiratory, and the other the non-respiratory period. It was not for a day or a week that this state of things continued, but for sixty successive days and nights. The number of respirations ranged from nine to sixteen, not per minute, but per respiratory period. The longest respiratory periods marked the shortest non-respiratory periods, and vice versa. In his best conditions the time consumed in the two periods was about one minute. Then he had comparatively refreshing sleep; and his respirations resumed without so much panting, and he would not generally be awakened.

He lived almost on forced air, or what is called the complimental volume, as there was no healthy or regular tidal breathing, except the two or three slow, quiet respirations that always preceded the intermission.

The lungs were well distended during the respiratory period; the thorax expanded, and all of the respiratory muscles seemed to be active. The violent ingress of air, and the violent effort to get it, muffled the vesicular murmur which could only be heard at the close of the respiratory period, and was louder than normal, and accompanied with more or less of mucous râles. Percussion sounds were usually resonant, except in the region of the heart and liver. A few days previous to the death of the patient, however, the lungs were evidently greatly congested, and he finally died with a gush of blood from the mouth containing large coagulated clots.

The heart was evidently enormously large. It was impossible to lay the patient on his left side on account of it, as any pressure on that side could not be borne for a moment. His greatest suffering was a sense of pressure upon the heart, feeling, as it were, imprisoned by the thoracic walls. But it maintained its rhythm through the whole period of respiratory intermission, becoming at the beginning of the period slower, and falling to 100 or 105 beats per minute, holding that for a time, and then rapidly increasing in number until he breathed, when every available muscle was brought into violent exercise to give him air.

When we consider that ordinarily we cannot hold our breath for more than twenty seconds, it is wonderful indeed that this man should have lived two months with a persistent intermission of respiration varying from a half to a full minute. To account for this phenomenon, and the fact that the heart maintained its rhythm, performing its functions through the whole attack, is an interesting inquiry, and we have to regret that there was no post mortem investigation. But the light of clearly demonstrated physiological facts, in connection with the palpable symptoms of the case, can but lead to a conclusion as to the pathological conditions almost as satisfactory as could have been reached by an ocular demonstration, although the conclusion at last has the value only of a probable fact. We propose thus to investigate it.

What were the pathological conditions of this patient?

Generally he was anæmic. His blood was no doubt deficient in albumen, fibrin, and red corpuscles, the effect of the slow ravages of the poison. He had not for years been well nourished, because of the antagonism to life set up in the blood by the poison. His heart was enormously large, the effect of the watery and weakened state of the blood. And all of the tissues of his body were no doubt weak and flabby, on account of the inefficiency of the blood to maintain them in a healthy and vigorous state. But no tissue perhaps suffered so much as the nervous, and the palpable symptoms of the case direct us to the encephalic centres and medulla oblongata.

The sensorum commune constitutes the centres of voluntary movement, and of all consciousness, "each ganglia having the power of rendering the mind conscious of the impressions derived from the organ with which it is connected." With regard to the thalami optici, and corpora striata, Dr. Carpenter says: "That experiments which have been made for the purpose of determining their functions have not yielded any very satisfactory results." Again, he says: "The greater proportion of the fibres that constitute the various strands of the medulla oblongata may be traced into them; and they seem to stand in the same relation to the nerves of touch or those of 'common sensation' that the olfactory, optic, auditory, and gustative ganglia bear to their several nerve trunks."

The experiments of Longet affirm that if either thalami be removed, both sensibility and motion are destroyed on the opposite side of the body. We would expect, therefore, to find the cause of the hemiplegia in this case in disease of the left thalamus. But in this patient the right arm was paralyzed and insensible, while the right leg was paralyzed, but acutely painful; and the integument on the right side of the body was numbed but not entirely insensible. Now, could these different effects have resulted from disease of the same sensory centre? Would different grades of pathological changes in the thalami alone account for them? It appears that the difficulty in reconciling the phenomena in this case of hemiplegia with the results of experiment may be somewhat overcome by accepting the doctrine advocated by some eminent physiologists, and denied by others, viz: That the thalami administer specially to the anterior extremity, and the corpora striata to the posterior extremity. If this be the case, the abolition of both sensibility and motion in the arm might be referred to disease of the thalamus, and that of motion in the leg to disease of the corpus striatum; but either one or the other—the thalamus or the corpus striatum—must have registered the pain which was felt in the leg, and why, therefore, would not the limb respond to the will? Evidently no motor impulse was reflected to this painful member. And, moreover, this explanation would imply the abolition of the motor tract of the corpora striata whilst the energy of its sensory tract was rather exalted than diminished, the leg being painfully sensitive without the power of voluntary motion. And Dr. Carpenter says, that sensory fibres cannot be traced into the corpora striata with the same distinctness that motor fibres issue from them. And again, the motor tract of the crura-cerebri not only connects the corpora striata with the medulla oblongata, but with it are connected the roots of the spinal-accessory, hypoglossal, and of all the encephalic motor nerves, so that with such injury of the motor tract of the corpora striata, so many of these nerves could not have escaped. Of these nerves we can only certainly affirm that the hypoglossal and the portio dura of the seventh pair, or facial, were affected. Their participation in the diseased structures being evinced in one case by partial paralysis of the tongue, and in the other, by partial paralysis of the muscles of the face. Deglutitoin, it is true, was at first difficult, but that function was restored simultaneously with recovery of the tongue, and there are many motor filaments administering to it

But the application of the doctrine above alluded to is wholly without force to explain the difficulty, as it is completely annulled by what is affirmed of the corpora striata by Longet, Schiff and Lafargue, that the results of their removal, even together with the anterior part of the cerebral hemispheres, are, for the most part, negative, the animal remaining in profound stupor, yet capable of being aroused.

With the lights before us, we are justified in attributing the hemiplegia mainly to disease of the left thalamus opticus, although we cannot explain the phenomenon of loss of motion in the leg without loss of sensibility; loss of both sensibility and motion being co-incident in the arm, we would naturally expect the same co-incidence in the leg.

We shall now proceed to account for the phenomenon of the patient's intermittent periods of respiration, the persistent rhythm of the heart, and the prolongation of life under so many unfavorable cirumstances.

"The medulla oblongata presides over the vital domain of respiration." F. G. Smith's Oral Lectures. "The pneumogastrics are the main inspiratory nerves, and are excited by impressions made upon their peripheral extremities produced by the presence of venous blood in the capillaries of the lungs."—Dr. Carpenter. That ganglia of gray matter in the medulla oblongata, between the olivary and restiform bodies from which the pneumogastric nerves arise, must have been in a torpid condition almost amounting to paralysis; and the patient must have been dependent upon auxiliary centres of respiration for the maintenance of life for so long a time. Dr. Carpenter says: "That there is probably no part of the automatic centres concerned in the movements of respiration that may not be excited to action by the extraordinary stimulus which results from a prolonged interruption of aeration of the blood." And further, "that it may be fairly surmised from the close dependence of nervous activity upon the oxygenation of the blood, that a 'lesion de respirer' may originate in the circulation of imperfectly aerated blood in the nerve centres themselves, and may become the direct excitor of respiratory movements; and that even the sympathetic nerve, which derives many filaments from the cerebro-spinal system, and which especially communicates with the pneumogastric nerves, may be one of the excitors of this function; and this, perhaps, not only through its ramifications in the lungs, but also by its distribution on the systemic vessels; so that it may convey to the spinal cord the impression of imperfectly aerated blood circulating through these, such as the pneumogastric is believed to transmit from the lung."—Carpenter's H. P., pages 291, 292.

Thus we see that the provision for exciting the respiratory actions are not only extensive, but very beautiful in its display of Divine wisdom for the preservation of life. But the provision, extensive as it is, would have failed in this patient if the pneumogastric centre had been perfectly dead to impressions. It is in the fact that it was not dead, but nearly so, that the remarkable phenomenon of the patient's intermittent periods of respiration is to be attributed. The pathological condition of the patient required that the blood should be surcharged with carbonic acid before this most important respiratory centre could be aroused at all, it was so nearly dead; and hence the respirations were intermittent. As soon as the blood became thoroughly oxygenized the patient ceased to breathe, and the act was not again excited until the blood was again surcharged with carbonic acid; and thus the patient was kept alive by an extraordinary "lesion de respirer," which originated throughout the whole system and which finally aroused not only the auxiliary nerves of respiration, but the torpid pneumogastrics themselves. It was certainly the last and crowning act of the medicatrix naturæ, where alternating pathological states of the blood were absolutely necessary for the prolongation of life. Strange as this may appear it was evidently true; and it is easily comprehended when we consider that carbonic acid in the blood in health, within certain limits, is a normal product fulfilling an important mission in the economy; but its accumulation in health to the amount which was necessary to arouse the respiratory centres in this patient, would soon destroy life.

That the intermittent periods of respiration are to be attributed to a very torpid condition of the pneumogastrics, is made more probable by the results of Dr. Reid's experiments, which have shown that when the pneumogastrics are severed, the inspiratory movements become exceedingly slow.

Auxiliary modes of support: When we consider that the nervo-muscular apparatus was comparatively at rest in this patient, and that the disintegration of these tissues are in proportion to their activity, and consequently this source of carbonic acid, and this demand for oxygen, was, in a measure, cut off, does it not seem probable that the heart, in its active and labored effort to send out the life current, absorbed more oxygen and gave out more carbonic acid than it would have done in a normal state of the system, and thus, in a measure, maintained its motility? And, indeed, may not the respiratory muscles have been, in a measure, sustained in the same manner? Moreover, if one of the largest sources of carbonic acid was thus diminished, it required less oxygen from the air to displace it, and therefore the patient could live with less air than he could have done in a normal state of his organism. Every one, for instance, knows the difference between feeding three laborers and a dozen; or the difference between what is required to sustain a hard working and thinking man, and one who neither works nor thinks. And we regard oxygen as an element of nutrition. In this patient's case the heart and the respiratory muscles worked hard, while the locomotive system of muscles were all inactive, and a large part of the nervous system was dormant. Is it not natural, therefore, that these active tissues should have drawn from the blood that surplus of nutritive material which was not needed by the inactive and dormant tissues, and thus out of the comparatively small supply, to have obtained enough to sustain their organic and vital functions?

Thus it is that what at first impression of this remarkable case appears to be not only incredible, but impossible, becomes easily explicable by the light of physiology.

This case so corroborative of the correctness of the theory which attributes the rhythmical action of the heart to the stimulating influence of the carbonic acid of non-aerated blood, that I will make special allusion to it. It was observed that the heart's actions increased rapidly just before the resumption of respiration in every case, showing that it was stimulated by the non aerated blood. "This influence," says Professor F. G. Smith, "is exerted upon the heart through the coronary vessels, and not through the medium of the blood circulating in its cavity."—Oral Lectures.

It is equally opposed to the ingenious and long popular theory of Dr. Wm. B. Carpenter, which I believe the author has now abandoned, attributing the rhythmical action of the heart to a "higher degree" of motility of the organ itself. Yet the heart's motility was no doubt sustained in a measure in the manner above stated; it worked hard and appropriated to itself a large share of that surplus of nutriment which the idle and inactive tissues did not need.

Four Cases of Albuminuria Complicating Pregnancy. By S. M. BEMISS, M.D., Professor of Theory and Practice of Medicine and Clinical Medicine, University of Louisiana.

Case I. The first of these cases was a young primaparous female who had been under my care for a year prior to marriage, for catalepsy. Nothing regarding her family history could be obtained, as both her parents had died of cholera, upon a river steamboat, in 1848, or 1849, and the little orphan was taken charge of by some good people who chanced to be upon the same boat.

She was of spare form, with thin, delicate skin and light hair. For her catalepsy, chalybeates, tonics, open air exercise, and travel were recommended; but the prescription whose use brought the greatest apparent benefit was ten drops, twice daily, of Marshall Hall's Solution of Strychnia. (℞—strychnia gr. j, alcohol ʒj, acetic acid dil. gtt. xx, distilled water ℥vij; m. ft. sol.) For several months before her marriage no cataleptic attacks occurred, nor did I ever hear of their recurrence after marriage.

About the middle of the eighth month of gestation I was asked to visit her to prescribe for dropsy of the lower extremities. I found a very uncomfortable degree of swelling of the feet and legs, and some puffiness of the face. Testing by heat determined the urine to be largely albuminous. No symptoms of eclampsia, or indications of nerve disturbance, are mentioned as being at this time manifested. A pill composed of one grain each of blue mass, jalap, digitalis and squills, was given every night for several succeeding nights, to be followed each morning by a saline cathartic. After free catharsis, pursued until a sufficient mitigation of the oedema had resulted, mur. tinct. iron was given methodically. By alternating these remedies to meet their respective intentions, the patient was ultimately brought to the completion of her full term without accident.

I had much apprehension with regard to her safe delivery, and obeyed the summons, well provided with chloroform, opiates, and such other remedies as are usually brought into requisition for the treatment of puerperal convulsions. I found a vertex presentation, and within seven hours the labor had terminated without the slightest mishap of any description. The placenta was thrown off by a spontaneous uterine contraction, and no unusual hemorrhage attended its expulsion.

Probably about thirty minutes after the completion of delivery, while giving the nurse some instructions with regard to the management of the child, the patient attracted my attention by a peculiar sound, produced either by a sudden spasm of the glottis, or an abortive effort at vocalization. I found her in a violent convulsion. Chloroform was given by inhalation, until pretty nearly complete anesthesia was induced, and this condition maintained for about two hours. After this, sulph. morphia gr. ss. dissolved in camphor water ℥j was given, and the patient was carefully watched for twenty-four hours, but received no other medication. No other convulsions occurred. She made a good recovery.

The child was a feeble girl but survived. When last under my observation it exhibited decided marks of scrofulosis. but neither parent being robust, we cannot with any certainty charge the child's feeble health to the state of maternal blood induced by interruption of renal function during gestation.

Case II. This patient was also a primapara, probably 22 years of age. She was a woman of very short stature, but otherwise remarkably well formed, and of healthy constitution. There was no history of any tendency to convulsive seizures, either as it relates to her family or self.

I was requested to visit her duting the thirty-second week of her pregnancy, and found her suffering from an unusual degree of general anasarca. The infiltration was greater in the lower extremities, but also affected the upper extremities and the face. Respiration was hurried and shallow, and the patient unable to remain in a recumbent posture. She had a cough with some frothy expectoration. She had disorders of vision and vertigo, but no cephalalgia, or decided indications of eclampsia. The urine was highly albuminous. A five grain dose of sub-muriate of mercury was given, to be followed by comp. jalap powder, until full catharsis was procured. The treatment from this time to the completion of her term consisted in the administration of occasional hydragogues, and in exhibiting in the intervals tinct. iron and other reconstructive remedies.

Under this course the patient's symptoms were so mitigated that she was far more comfortable, but the œdema of the lower parts of the body and lower extremities was not cured. When called to her delivery, I found such enormous infiltration of the labia that it was necessary to permit its escape by free punctures with the lancet.

At the initiation of labor the patient was brought under the influence of chloroform and kept in a state of partial anesthesia until its termination, occupying a period of near twelve hours. The child was living, and survived. The patient's recovery was very tedious, and for a long time apprehensions were entertained that phthisis would ensue.

Case III. Was a lady of spare form and of a highly endowed nervous system, but with no history of family tendency to convulsions. She was delivered of her first child in the month of May, 1870. The labor was unusually rapid, for at the moment the accoucheur entered the room the fœtus was expelled, still enveloped with unbroken membranes. The bag was ripped open and a living child extracted. By the mother's reckoning, and the child's imperfect development and small size, the conclusion was well established that it was delivered a month before the normal period of utero-gestation.

On the 27th of March, 1872, her husband came to ask a prescription for a headache of which she was complaining. Some pills of blue mass, rhubarb and castile soap were ordered. This was about the beginning of the 35th week of her second pregnancy.

At 11 o'clock on the morning of the 28th she was seized with a very violent convulsion, followed in quick succession by others, the patient during the intervals remaining wholly unconscious.

At my request Dr. A. C. Holt was joined with me in the treatment of the case, and to his skilful assistance the successful result is in a due degree ascribable. The patient's feet were swollen, but there was no discernible puffiness of the countenance, we, however, felt assured the case was one of convulsions, associated with albuminous urine, and succeeded in getting a scruple dose of calomel into the stomach by placing it upon the tongue shortly after the first convulsion, and following it with spoonfuls of water. We determined to effect delivery as early as possible, and if necessary, as we then supposed it would be, to attempt forcible dilatation, turn the child and deliver by the feet. Preparatory to these measures a catheter was introduced into the bladder, and a sufficient quantity of urine brought away to enable us to determine that it was loaded with albumen.

Notwithstanding the patient's insensible state we were soon able to perceive by her automatic efforts at straining, and the coincident uterine movements, that labor pains were already inaugurated. These spontaneous efforts were greatly aided by a manual dilatation of the cervix, an early rupture of the membranes and especially, also, by a carefully regulated, but tolerably firm downward pressure exerted upon the fundus uteri, at each contraction. Delivery was accomplished by the middle of the afternoon. A small and feeble female child was the result, which yet survives, and is reported to be healthy. No difficulty attended the expulsion of the placenta, and the uterus was well contracted afterwards. The patient was brought under the influence of chloroform at the earliest practicable moment after the first convulsive seizure, and this influence was maintained during the whole time of labor. After delivery was effected the convulsions still continued to recur at intervals, seldom greater than thirty minutes, as they had done during the labor. The treatment pursued was, to give chloroform rapidly whenever muscular twitchings announced the approach of a convulsive seizure, and to suspend its use as soon as the convulsion had ceased. In this manner we were able to mitigate the violence of the seizures with a good deal of certainty, and quite frequently succeeded in preventing their occurrence. Happily, both for the physicians and the patient, however profound her insensibility was, fluids placed far back on the dorsum of the tongue were in part swallowed. This enabled us to medicate and nourish her. We determined first to make trial of the efficacy of bromide potash in calming nervous excitability, and gave twenty grains every two hours. Three doses were given without benefit, after which it was omitted and twenty grains of hydrate chloral given, to be repeated as often as the patient's condition demanded. The chloral exercised a more obvious control over the convulsive seizures, and was repeated at intervals of from three to six hours. In the mean time the patient's bowels were well acted upon by the calomel and an enema of castor oil emulsion. The kidneys also appeared to be in active exercise of function, but as the evacuations were all emptied into the bed, it was not possible to determine with regard to urinary abnormities. During the 30th; the only changes in treatment were four enemata, each containing bromide potash ʒss. and tinct. digitalis ʒij; also by mouth four five-grain doses of valerianate of quinine. This medication took the place of the chloral, which was omitted. A blister 6x4 inches was placed on the back of the neck. The patient exhibited indications of very great nervous exhaustion, with a rapid, extremely feeble and irregular pulse, and on this account, as well as from the marked mitigation in violence and frequency of the spasms, the above changes were considered proper. For the same reasons the chloroform was almost wholly discontinued.

On the morning of the 31st the convulsions ceased, and did not again return. No precise reckoning was kept of the number of convulsions the patient endured, but it could scarcely have fallen short of fifty. The patient lay in a comatose state for more than a week, and did not become conscious of the fact of her delivery until one week after its occurrence. Indeed, for several months she continued to complain of loss of memory, and hesitated in conversation, with a vacant expression of face altogether unusual to her. The after treatment of this case consisted of iron, with small doses of nux vomica, liberal diet, and a sea shore residence. A careful examination of the urine two weeks after delivery proved it to be non-albuminous.

This patient has removed from this city, but I learn that she was very recently delivered of her third child without convulsions.

Case IV. This was a primipara of very diminutive figure and quite young, but up to the time of marriage suffering with no disease except painful menstruation. Her family history presented interesting points with regard to puerperal convulsions. Her mother died after giving birth to a second child, which was stillborn. At the period of the mother's death the patient was old enough to remark that she had "dreadful convulsions and was very dropsical." A maternal aunt also died during childbirth, with precisely analogous symptoms.

Some months after her marriage, the patient had an abortion at about the sixth week. Within twelve months two others had ensued, at from the sixth to the eighth week. I was then asked to visit her, and found retroversion of the uterus. The uterus was without difficulty restored to a normal position, and recumbency with warm vaginal douches ordered. After a few days of this treatment, a Hodge's bar pessary was introduced and the patient set at liberty. Her menses were observed for the last time October 5—10, 1872.

I was requested to see her on the 26th of May, and found that she had been suddenly awakened in the latter part of the preceding night with pain in the head. This she described as being tensive, terrible and unbearable in character, obliging her to spring to her feet instantly. The subcutaneous areolar tissue was quite generally infiltrated. The feet and legs were very large, and pitted on pressure. The face had the peculiar waxy, anæmic look of Bright's disease. The conjunctiva were red, and when a cheek was pressed for a time upon her hand, or even the pillow, a crimson flush remained for a long period. There was no trouble with the sight. The patient was greatly annoyed with frightful dreams, but her intellection was perfect. The bowels had been a little more inactive than usual, but it had not been thought necessary to take anything to relieve them. The urine was scanty, and almost wholly coagulable by heat. Its specific gravity was 1.012. The pulse beat 64 to the minute. The patient's husband stated that within the three days prior to my visit she had increased in weight 5 lbs. For some day or two there had been anorexia. The child's movements were sufficiently vigorous; no other uterine phenomena. I ordered f r her small doses of calomel and jalap, to be repeated every two hours; but as these were rejected, two doses of calomel, each five grains, were placed upon the tongue and washed down with spoonsful of ice water. These were followed by bitartrate potash in cold water, and by comp. jalap powder. Vomiting frequently occurred, and very great quantities of a dark yellow and greenish fluid were thrown up. Notwithstanding the irritability of the stomach, the above named purgatives were urged upon the patient, for it appeared to me that the indication for hydragogue catharsis was too urgent to admit of any delay.

In the afternoon very free watery purging occurred, and was attended with complete relief to the pain in the head. The vomiting also ceased; the patient's complexion seemed more natural, and her whole condition was bettered. She was now left for the night, with instructions to take ℈j of chloral hydrate in the event that she suffered pain, or from sleeplessness.

May 27th. The pain came on during the night, about the same hour that it had occurred on the previous night. The chloral had not been given, the patient insisting that the cephalalgia was less severe, and that walking the floor would relieve it. It passed away in less than an hour, and at the time of my visit she was free from pain. The puffiness of the face was less marked, the urine very albuminous but increased in amount; specific gravity 1.015. She was ordered a teaspoonful three times daily of mur. tinct. iron; and simple syrup aa ʒiv, mix; at night xxx grs. of bromide potash, in camphor water ℥j. The bromide was ordered as a substitute for the chloral, as the patient was found to have some prejudice against the latter. Bitartrate potash was dissolved in the water which she drank, in such amount as to keep up some hydragogue action of the bowels. The appetite being a little improved, milk, eggs, and the juices of a quickly cooked mutton chop were directed as food for the day.

May 28th. Headache again last night, secretion of urine still increasing; less albuminous; bowels free. Thinking that quinine might exercise some control over the headache, I ordered twelve grains in three doses; to continue the iron, and take the bromide potash at bed-time.

May 29th. Cephalalgic pain very violent during the latter part of the night. The quinine had been in part rejected. Urine scanty, loaded with albumen; specific gravity 1.011. Pulse 48 to the minute. Gave calomel grains five, to be followed in three hours by a powder containing ten grains of jalap and ten of bitartrate potash. This produced free catharsis with liquid stools, after which ℈j of bromide of quinine was dissolved in ℥iv of concentrated extract of coffee, by the addition of citric acid, and a teaspoonful ordered every fourth hour. At night fifteen grains of chloral were given, with orders to repeat the same quantity during the night, if restlessness or pain rendered it necessary. The iron was discontinued until otherwise directed.

May 30th. The patient passed a better night, having experienced a very slight return of the pain. After this, her improvement was uninterrupted. The urine steadily increased in quantity and specific gravity, until, on June 7th, it was 1.023; the deposit, after submitting it to heat, was scarcely one-tenth. Chloral was taken in doses of from 7½ to 15 grains nightly. The bowels were kept free by ptisans of bitartrate potash. The iron was taken twice daily, whenever the patient's stomach was in such a state as to enable her to take it without annoyance. At this date it was not thought necessary to continue my daily visits.

Previous to this date, however, I requested a consultation to decide in regard to the propriety of inducing labor for the safety of the child. The patient was very intelligent, and fully aware of the danger, either as it respected herself or offspring, and being intensely anxious to bear a living child, was willing to encounter an increase of hazard to herself to accomplish this end. She daily reported that the fœtal movements were becoming more feeble. Dr. A. C. Holt met me on the 1st of June. The result of the consultation was, that in view of the decided improvement in the maternal system it was better to trust the case further, in the hope that if the viability of the child had not already suffered irreparable injury, it might share in the benefits of the mother's improved nutrition. On the 13th of June the patient's urine was so abundant as to cause a fear on her part that some new form of disease was impending. It contained but little albumen, and had a specific gravity of 1.007. The patient's feet and legs were still very œdematous, and the pits from pressure persisted for a great while. Still her complexion was improved, and her appetite and digestion satisfactorily good.

One symptom was present which gave me considerable uneasiness. Her breasts were relaxed and pendulous, and on the under surface there were red patches, only in part effaceable by pressure. The superficial capillaries were the seat of a blood stasis which at many points had resulted in rupture and extravasation. This seemed to indicate a degree of systemic innutrition more profound than that ordinarily coincident with mere serous infiltration.

The patient was seized with light labor pains on the morning of June 22d, and was delivered in the early part of the evening without the least difficulty or complication, so far as it respects herself. The fœtus was dead, macerated, the cuticle separating wherever much pressure had been made during delivery. The bones of the head were movable, and the cranial sac pouched to such an extent during delivery, and had such a fluctuating, fluid character of touch, that I believed hydrocephalic effusion had commenced prior to the child s death. The patient states that the last date of fœtal movement was Saturday, June 14th. This is now the 21st day after delivery, and the patient's recovery has progressed satisfactorily. The only anomaly, indeed, which has occurred, has been a violent pain in the right eye, followed by disturbance of vision. This has occurred twice, and in each instance followed rather prolonged use of the eyes in reading. These symptoms were temporary. I did not see her during their continuance, and at the periods of my visits nothing unusual could be observed in the appearance of the affected eye.

No examination has been made with the opthalmoscope.

REMARKS.

These cases do not throw any additional light upon the controverted points of pathology of puerperal convulsions. All, except the third case, have occurred in small primiparous women, whose abdominal walls were unyielding. Consequently the doctrine, that pressure is the morbid starting point, is in the aggregate supported. But those who are willing to admit pressure as the pathologic factor, are divided as to the manner in which it works the mischief. The greater number hold that it is exerted upon the vascular system, and the albuminuria is the result of congestion, but Tyler Smith, Fordyce Barker, and others equally excellent as professional authorities, believe the injury is from nervous irritation. The symptoms in these cases all developed themselves in the latter half of pregnancy, while it is a known fact reflex disturbances in pregnancy belong peculiarly to the earlier months. I have no doubt that much of the disagreement in opinions regarding the pathology of puerperal convulsions is due to the fact that different causes may determine them. When different diseased states are grouped under one name, we become prone to consider the nomenclature and pathology as being alike unvarying. That they are not uncommonly due to the hysterical diathesis is undeniable. That the irritation of the uterine nerves may give rise to them in women who have never exhibited hysterical manifestations is extremely likely. All constitutions, under certain circumstances, are impressible to those causes which excite reflex disturbances. I have at this moment a lady under observation whom I have treated in quite a number of hysterical convulsions. She is now far advanced in the ninth month of pregnancy, and has had two very violent attacks of convulsions during this state. The urine has not a trace of albumen. But even if deprived of opportunity to make observations of the urine, or of a history of previous hysteria, we could confidently assert a diagnosis, basing it upon the condition of the patient in the intervals between the seizures. There is no coma. When she recovers from the exhaustion of her excessive muscular exertions, she is free from morbid manifestations. In another class, as those cases detailed in this paper, the convulsions are ascribable to some morbid process which is, with great uniformity, associated with albuminous urine. The most consistent explanation is, that the same pathological conditions which produce the albuminous urine, at the same time embarrass the renal functions, and hinder depuration of the blood. We must not, however, conclude that these two pathological states are inseparably connected. It is altogether probable that obstructed renal depuration may occasionally exist in sufficient degree to produce convulsions without albuminous urine, and the latter very often occurs without convulsions. It is also not at all improbable that other derangements of the fluids of the system may give rise to convulsive seizures besides those due to any form of uremic poisoning. Indeed, Professor Brickell's suggestion, that "vitiations of the blood incident to pregnancy" which may in no wise depend on crippled kidney function, are yet sufficient to produce convulsions, seems altogether probable. But even in those cases, where the relation between the lesions of renal function and the convulsions is fully established, the gross pathology is very essentially different from that of Bright's disease. The uremic poisoning—the general tendency to serous infiltration, the liability to convulsive seizures and the demolition of blood constituency, show great parallelism. But putting out of view the chemical differences in the albumen in the two states of disease, one radical distinction rests upon the difficulty and tediousness of cure in Bright's disease, contrasted with the rapidity with which the albuminuria of pregnancy gets well when delivery occurs. No doubt it sometimes happens that the puerperal state entails in some manner or other, permanent disease of the kidneys. Four years ago I attended a lady of this city who had suffered several abortions at very short intervals. After the last, she remained anæmic, complaining of unusual fatigue after physical exertion. She had light rigors, with loss of appetite, and a tendency to menstrual returns more frequently than in health. With these symptoms she had headache and was nervous. She was treated with quinine, chalybeates and cod liver oil. Very soon the debility increased so that she kept her bed. Her respiration became hurried, the heart's action was weak, and the pulsations irregular as it respects force. No morbid chest sounds could be detected. I thought the anomaly of the symptoms was properly explained by a strong hysterical tendency manifested in the early part of her case. There was no dropsical infiltration any where. No indications of uremia, unless the above named symptoms were such, and no statements on her part calculated to call attention to the urine. Nevertheless, desiring to use every means of acquainting myself with her case, I obtained a specimen of her urine and submitted it to chemical and microscopical examination. It contained in abundance, albumen, casts, and blood corpuscles. In less than two days from this time, she died very suddenly, and without convulsions. No post-mortem.

I remember to have read with great interest, but have lost my references to it, a paper published in a French Medical Journal, giving an account of five cases of acute albuminuria occurring so shortly after abortions, as to afford indubitable evidence of the connection of cause and effect. It is impossible for me to aver, in the case just related, that the albuminuria may not have antedated the last abortion, which was only some six weeks before the patient's death. My belief, however, is, that it did not precede but followed it, and was determined in a great measure, if not wholly, by extension of the grave uterine lesions to the kidneys.

Whatever remarks upon treatment are made may be confined to the fourth case upon the record. A physician's successes, like those of a general, are commonly commended, even if shown to be in contravention to the rules either of science or common sense. In respect to the last recorded case, the treatment directed for the safety of the mother need scarcely be discussed. The indications for elimination—for hydragogues, were so pressing that the physician could make but little question concerning his measures of treatment. But it is not so irrelevant to enquire whether it might not have been better to have attempted something more than was done for the safety of the child.

The only possible step to be taken to save the child was the induction of premature labor. In the earlier progress of the case, I think there are two counts, which concurring, established the measure as unwarrantable. In the state of system the mother was in during the earlier stages of her illness, the danger of convulsions, and danger to her life therefrom were too imminent to justify induction of labor. The same considerations, touching the child were also to be weighed, in connection with the possible occurrence of convulsions.

The fierce, intolerable cephalalgia, and slow pulse, with which the patient suffered, are so generally the precursors of convulsions, that the physician incurs increased danger and assumes a grave responsibility if he attempts to incite labor in the face of such admonitions.

The arguments which led us to defer any procedures to induce labor, later in the progress of the case, have already been mentioned.

Diphtheria Treated by Medicated Inhalations. By S. S. Herrick, M.D., New Orleans.

The solubility of diphtheritic membranes by various agents is no longer a novelty. The experiments of Brichteau and Adrian are referred to in the October number of the *American Journal of Medical Sciences* for 1868, who found lactic acid dissolved in water to be a rapid solvent, and the same acid dissolved in lime water to operate still more effectually. These experimenters accordingly recommended the above solution as a topical application in diphtheria.

Aitken, in his "Science and Practice of Medicine," recommends "the local application of lime-water by frequent gargling or gentle brushing," but does not explain the mode of action.

Professor Flint, in his work on Practice, mentions that Küchenmeister and Biermer, having discovered that pseudo-membranous exudations are rapidly dissolved in lime-water, resorted to the inhalation of spray from lime-water in the treatment of true croup, and found it successful in a number of cases.

During the first four months of the present year, having had under treatment twelve cases of diphtheria, I have had an opportunity to test the value of this method, and have subjected six to the inhalation of vapor medicated with lime-water. The other six were treated by a topical application of chloride of zinc, grs. iv—viij to the oz. of water, with a camel's hair brush; and all took internally a mixture containing the muriated tincture of iron and chlorate of potassa.

The earliest cases were treated without inhalation, and the first of all was the only fatal one; but this child had been sick four days before I saw it, and complete aphonia showed that false membrane had already been deposited on the larynx.

The vapor treatment was first used with a young man who had first been treated with the topical application of the chloride of zinc for about two weeks. The medicated inhalations were followed by an early disappearance of the false membranes from the tonsils and pharynx. The same result was obtained with his sister, who was subjected to this treatment from the beginning. Another sister was successfully treated on the other plan by the family, under my direction, they thinking that they understood the matter pretty well themselves by that time. Of four other cases treated by lime-water inhalations, two were vaporized five successive days, one for three days, and one only once. All four came to my office for this purpose once a day (one individual in one instance twice the same day), and the inhalation was continued each time from five to ten minutes.

The instrument used was that of Codman and Shurtleff, by which steam is generated in a boiler, and, while projected into a funnel, is mingled with a medicated fluid. This apparatus is preferable to any hand-ball instrument, inasmuch as the vapor is inhaled while still warm, and the arrangement secures an intimate admixture with the medicated liquid. With infants this plan generally involves the inconvenience of forcibly holding the face to the extremity of the funnel for a considerable time—a proceeding which some weak-minded parents are not willing to adopt; but I have used it with a child less than a year old, which had already begun to learn its first lessons of obedience to parental authority.

It may be premature for me to pronounce a decided opinion upon the merits of lime-water inhalations in diphtheria and true croup, but I can safely say that my trials have been thus far quite satisfactory, and excite a hope that other practitioners may find the plan equally successful.

EXCERPTA.

Intra-uterine Medication in the Treatment of Chronic Uterine Catarrh

Dr. Playfair commences a series of lectures, in the new volume of the *Lancet*, on this subject, in which he describes the various means usually adopted. It is evident, he says, that by this means any topical remedies that may be deemed suitable can be very effectively and readily applied to the uterine mucous membrane, but due care should be taken both in regard to the mode in which the injection is made, and the nature of the solution or other material injected; and many cases are on record where most serious results have immediately succeeded their incautious use. It has been suggested that dilatation of the cervix with laminaria or sponge tents should first be adopted. But Dr. Playfair remarks that to treat effectually an old-standing case of uterine leucorrhœa we require to renew our applications at intervals for weeks or months. To suppose that under any circumstances it would be justifiable to repeat the dilatation of the cervix, say once a week, is an absurdity, since this is in itself a formidable operation, apt to be followed, even when most carefully done, by serious inflammatory mischief. If, then, dilatation be an essential preliminary to intra-uterine injection, as by common consent it seems to be, that method of treatment is at once put out of court in cases of uterine catarrh, although it may still be admissible in other conditions, such as menorrhagia, where their frequent repetition is not necessary. The danger of intra-uterine injection has suggested the application of various solids to the uterine mucous membrane. Sir James Simpson occasionally employed for this purpose fine intra-uterine pessaries made of some soluble material with which nitrate of silver or sulphate of copper was mixed. Dr. Braxton Hicks also uses points made of sulphate of zinc, which are passed into the cervical canal and allowed to melt there. Dr. Thomas, of New York, recommends medicated tents of sponge of sufficient size to fit the cervix, and saturated with nitrate of silver, tannin and the like. The use of sponge tents is strongly recommended by Dr. Emmett and others, as in itself of great value in certain conditions of chronic hypertrophy of the cervix combined with a granular state of its villi. Dr. Playfair thinks that such applications are not likely to prove of much benefit, since if weak they will have no action, and if strong they are likely to set up violent inflammation. Professor Courty, of Montpelier, however, states that he has had great success in cases of uterine catarrh from the introduction of a small piece of nitrate of silver into the cavity of the uterus, which is allowed to melt there. He recommends certain precautionary measures, as that several days should have elapsed since the last menstrual period, the absence of any flexion of the uterus, which might prevent the escape of the discharge saturated with the melted caustic, and the absence of any marked congestion or inflammation of the uterus. Dr. Playfair appears to disapprove of this proceeding as being coarse, violent, and uncontrollable, and also because there is some risk of producing induration and contraction of the cervical canal. Mr. Clay, of Birmingham, has recently proposed to medicate the interior of the uterus by means of the insufflation of powders. He combines the remedial agent with finely powdered wood charcoal; the powder being introduced by a special instrument contrived for the purpose. The last mode of intra-uterine medication, and that of which Dr. Playfair most approves, is the use of fluid applications—such as tincture of iodine, a solution of nitrate of silver, chromic acid, and the like—which are applied to the uterine mucous membrane by some contrivance which admits of its surface being covered by the applications, without any amount of fluid being left *in utero*. This method is strongly and was early advocated by Dr. Miller, of Louisville.—*Lancet*. Jan. 11, 1873.

Blister Treatment of Rheumatism.

In some remarks on the blister treatment of rheumatism, Dr. Peacock states that, as the result of the analysis of the cases that have come under his care in St. Thomas' Hospital, he finds that (1) Rheumatic fever is of very variable duration and intensity, and that there is no certain means of ascertaining, at the commencement of an attack, what will be its character. The patient may at first present active symptoms, which may soon subside; or the disease may at the commencement assume a mild form, and subsequently become severe; or an attack, though never of any great intensity, may be very much prolonged. (2) The proportion of cardiac and other internal complications which obtains in any given set of cases, and which at first sight would appear to be a very fair test of the success of the different kinds of treatment adopted, is very variable, without reference to the circumstances in which the patient is placed whilst under care. In a large number of cases, the evidences of complication are present to a greater or less degree before any treatment whatever is employed. Dr. Peacock then proceeds to point out that in order to determine the value of any particular line of treatment, the patients subjected to it should first be kept at rest for a day or two under favorable circumstances, then divided as far as possible into two classes, the mild and severe, and finally treated in exactly the same mode. He has endeavored to comply with these conditions in 233 cases that have come under his care for several years past, and has systematically adopted the blister plan. At first he tried it only tentatively, one, two, or three blisters being applied at the same time, or in succession, and in conjunction with other remedial means; and the general impression which he formed was not very favorable. Subsequently he was induced to apply the blisters much more freely, three or four, or even six at the time, and in rapid succession a still larger number; and he was then led to form a high opinion of their value, and to confirm what has been said in their favor by Dr. Davies. The blisters are generally two or three inches wide, and sufficiently long to encircle the limb. They are placed above the chief joints that are affected, and are usually put on in the after part of the day: in the morning, or when they have risen sufficiently, the serum is let out, and the surfaces are covered with warm linseed poultices, and these are continued for several days. Sometimes there is contemporary increase of pain when the blisters begin to draw, and the temperature rises, and the patients are restless at night, but generally there is very marked amendment in the morning, both the swelling, tenderness and pain being reduced, and the constitutional disturbance relieved. Generally, with local means constitutional remedies, especially the bi-carbonate and nitrate or tartrate of potash, are given more or less freely, according to the severity of the symptoms.—*British Medical Journal*, Jan. 18, 1873.

Treatment of Typhoid Fever.

The following is the treatment of typhoid fever adopted by M. Péter, Prof. Agrégé ot the Hôpital de la Charité:—Every other day he gives a glass of Seidlitz water, and morning and evening an emollient injection. The injection he considers to be useful in removing putrid matters The glass of aperient fluid, without exhausting the patient like a daily purge, also keps the intestinal canal clear from disintegrated matter. He uses the sulphate of quinine in quantities amounting to from seven to fifteen grains per diem as a febrifuge, increasing the dose in proportion to the intensity of the attack. He places great reliance on alcoholic stimulants, prescribing every day four or five ounces of quinine wine, which is made into a lemonade so as to make from two to three pints of fluid, by which means the vegetable acids are freely and easily administered. These, he thinks, remove the crusts of the tongue, and the symptoms produced by putridity are removed. If the case goes on from bad to worse. if the fever becomes more intense, the temperature increasing, and nervous phenomena supervening, he willingly has recourse to the action of cold, but does not adopt either baths or even cold affusion, which require, he thinks, great circumspection in their application, but contents himself with simply sponging the surface of the body with a sponge dipped in vinegar. Two assistants are required: one lightly passes the wet sponge over the skin, whilst the second rapidly rubs it dry with a soft cloth and quickly covers it. He considers one washing per diem to be enough.—*Journal de Médecine*, No. 10, 1872.

On Enlargement of the Tonsils as a Cause of Nightmare.

J. Warrington Haward, F.R.C.S., Assistant Surgeon to the Hospital for Sick Children, in the *British Medical Journal*, for June, remarks as follows: "It is worth while, therefore, I think, when a child suffers from night terrors, to inquire into the state of the tonsils as a possible cause. The kind of nightmare thus produced seems to differ from that having its origin in gastric irritation or dentition chiefly in this: that whereas this last kind occurs, as a rule, only once in the night (as Dr. West points out), and the child then sleeps quietly, that due to enlarged tonsils, especially when the attacks are worse, often recurs several times in the same night, and is invariably observed to be aggravated by the child catching cold."

Medicine for Children.

In prescribing for children, the proper dose of a medicine cannot always be calculated according to the age of the child, and does not in all cases bear the same proportion to the quantity suitable for an adult. For certain drugs children show a remarkable tolerance, while to the action of others they show as remarkable a susceptibility. Thus opium, it is well known, acts upon a child more powerfully than would be expected, judging from the mere difference of age. It should, therefore, be given to infants with a certain caution, especially if the child be enfeebled by disease. It is, however, a medicine which is of especial value in the treatment of the diseases of infancy, and may be given without fear if care be taken not to repeat the dose too frequently. Belladonna, on the contrary, can be taken by children in large quantities. A child of two or three years old will bear without inconvenience a dose which in an adult might produce very uncomfortable symptoms. Lobelia, again, is a remedy which is very well borne by children. Dr. Ringer has given it to "very young children" in doses of five minims every hour, and in no case has he noticed any ill effects to follow its administration. Arsenic should be given to children over five years of age in the same dose as that used to adults, and infants of a month or two old will take one drop of Fowler's solution three times a day with great benefit in cases of gastric catarrh. The influence of mercury upon young children deserves remark. It seldom in them produces stomatitis or salivation; but an excess of the drug is not, therefore, harmless; its influence is seen in the irritation of the alimentary canal which it so often excites, and in the profound anæmia which it induces. The anæmia which is so common a sequence of constitutional syphilis in infants is no doubt often a result of too long-continued mercurial treatment.—*Med. Times and Gazette*, London, April 12, 1873.—Dr. Eustace Smith, of London.

Aspirating Puncture in Strangulated Hernia.

At the last meeting of the Société de Chirurgie, Dr. Dieulafoy communicated a paper on the above, in which he investigated successively these three points: 1. Is puncture of the intestine in strangulated hernia harmful, or of a nature to cause accidents or to compromise the success of other and ulterior curative means? 2. In what cases and at what time should aspiration be practised? 3. What should be the *modus operandi?* In answer to the first question, Dr. Dieulafoy stated that out of twenty-four cases now known, and including herniæ of all kinds, umbilical, crural and inguinal, of more or less recent date, in not one instance had there occurred the slightest accident, and when kelotomy had been practised on the spot, the pricks made with the needle could scarcely be found out. As to the question of opportunity or seasonableness, the author said that, aspiration being the most direct and efficacious auxiliary of taxis, rational treatment of strangulated hernia should, with some rare exceptions, invariably begin with puncture. In the twenty-four cases extant, and which had resisted forcible taxis, or repeated taxis with the aid of chloroform, aspiration had afforded sixteen cases of cure, and had in no way interfered in the other cases with the performance of kelotomy. As to the *modus operandi*, it was of the simplest; the needle (No. 1 or 2) is introduced through the skin after vacuum has been established, and aspirates all the liquid and gaseous matter which it meets, those of the intestine as well as those of the sac. The tumor collapses, and reduction is most readily accomplished. When the hernia is not reduced it shows that there exist adhesions; then it is needless to prolong taxis, and kelotomy must be practiced.—*London Journal*, May, 1873.

The Connection between Laceration of the Perineum and Prolapsus Uteri. By Alexander Milne, M.D.

We associate these two articles together, as evidence of the entirely opposite views held by careful observers upon the action of the vagina, sustained by the perineum in giving support to the uterus, the former teaching that rupture of the perineum "is not a cause of prolapsus, or procidentia uteri;" that "the perineum has nothing to do with the maintenance of the uterus in its natural position," and that the only influence a rupture can have is to favor a more direct procidentia, in cases where the causes for the displacement are in action. Dr. Milne takes a directly opposite ground, maintaining "that the perineum in its normal state does aid in supporting the uterus, and when lacerated, favors the descent of that organ," and "that rupture favors prolapsus uteri by destroying the curvature of the vaginal canal, and making it approach the perpendicular." Various arguments are adduced by each writer in proof of his own particular views and opinions, and the Society appears to be very much divided upon the question—Drs. Keiller, Bell, James Young, and Cuthbert, rather favoring the views of the former, and Drs. Ritchie, Gordon, Murray, and Bruce, those of the latter.—[Transactions of the Edinburgh Obstetrical Society.]

Criminal Abortion.

Professor T. Gaillard Thomas, in the *American Journal of the Medical Sciences* for April, 1873, reports an interesting case in which a wire 17½ inches in length, apparently a portion of an umbrella, was in a criminal attempt passed through the roof of the vagina, traversing the abdominal cavity, entering the lung and causing death, with pulmonary symptoms. The position of the wire was only detected after death. Shocking to relate, the husband of the woman claimed to be a physician, and was no doubt cognizant of, if not an actor in, the criminal procedure. We are interested to know if the culprit has been turned over to the prosecuting State officer.

Flexions and Versions of the Uterus, with Mechanical Treatment of Uterine Deviations.

In an exhaustive article published on the above, by Dr. B. S. Schultze, in the *Archiv fur Gynækologie*, the author puts down various conclusions, which may be summed up as follows: 1. The normal position of the empty uterus is anteflexion or anteversion. When a woman is in a standing position, the posterior surface of the uterus is turned upwards. 2. Anteversion and anteflexion must be regarded as pathological conditions only when the uterus is fixed in its vicious position, or limited in the movements which are communicated to the organ. 3. Thickness and shortness of Douglas's ligaments (the habitual consequences of parametritis) constitute the usual causes of the persistence of anteversion or abnormal exaggeration or anteflexion. 4. On the other hand, the lengthening of the same ligaments (through muscular weakness of the retractores uteri) necessarily leads to retroversion and retroflexion, of which it is the most frequent cause. 5. The line of flexion of the uterus follows exactly the primarily anterior or posterior surface of the organ. If the body of the flexed uterus is more or less deviated to the right or left, almost always there exists at the same time a rotation of the organ on its axis. 6. Pressure exerted on the abdominal viscera increases the following deviations: normal anteversion, or anteflexion of the empty uterus, abnormal flexion backwards (through posterior fixation), retroversion and retroflexion through laxity of Douglas's ligaments. 7. Uterine catheterism does not suffice for recognizing the normal situation of the organ, and the direction of its deviations. Palpation with both hands, properly effected, is a safer way of making out the diagnosis. 8. Persistent anteversion and anteflexion of the uterus can be combated with benefit only by the help of revolving agents that tend to cause the disappearance of the exudata which maintain the uterus in its vicious position. 9. Retroversions and retroflexions, whilst they are yet reducible, must be treated by means of the hand, and not of the uterine sound; but in the greater number of cases it becomes necessary to have recourse to mechanical means for maintaining the uterus in its normal position—namely, slight anteversion. 10. The only rational means of overcoming displacements of the uterus backwards is retroposition of the vaginal portion. The innumerable intra-uterine pessaries used for the purpose do not generally contribute much to that effect; but the use of Dr. Schultze's modified vaginal pessary produces this result: when the vaginal portion is fixed behind, intra-abdominal pressure maintains the uterus in a position of normal anteversion. 11. Pressure exerted by the abdominal viscera is not capable of modifying flexion. When in such cases of flexion pain is abated by retroposition of the vaginal portion, it may be necessary to add an intra-uterine sound to the vaginal pessary.—*London Lancet*, May, 1873.

Diseases of Children—Scarification of the Gums.

Dr J. Lewis Smith, in his "Treatise on the Diseases of Infancy and Childhood" (of which the second edition was lately published in Philadelphia), says that the gum-lancet is now much less frequently employed than formerly. It is used more by the ignorant practitioner, who is deficient in the ability to diagnosticate obscure diseases, than by one of intelligence, who can discern more clearly the true pathological state. Its use is more frequent in some countries, as England, under the teaching of great names, than others, as France, where the highest authorities, as Rilliet and Barthez, discountenance it. It is well to bear in mind the remark of Trousseau, that the tooth is not released by lancing the gum over the advancing crown. The gum is not rendered tense by pressure of the tooth, as many seem to think; for, if so, the incision would not remain linear, and the edges of the wound would not unite as they ordinarily do by first intention within a day or two. If there be no symptoms except such as occur directly from the swelling and congestion of the gum, the lancet should seldom be used. The pathological state of the gum which would, without doubt, require its use, is an abscess over the tooth. As to symptoms which are general or referrable to other organs, as fever and diarrhea, the lancet should not be used if the symptoms can be controlled by other safe measures. All coöperating causes should first be removed, when, in a large proportion of cases, the patient will experience such relief that scarification can be deferred. If the state of the infant be such that life is in danger, as in convulsions, or there be danger that the infant will be permanently injured or disabled, as by paralysis, every measure which can possiby give relief should be employed without delay. In these dangerous nervous affections, therefore, the gums, if swollen, should be lanced.—*Charleston Medical Journal.*

Antagonism between Opium and Belladonna.

Dr. Johnson (*Hospital Reports*, Shanghai, March, 1872) has had great experience of opium poisoning and the ill effects of opium eating. During the last seven years, he has treated upwards of three hundred cases of opium poisoning. He first employed atropia in 1869. He employed it hypodermically in the severer cases, where the patient is profoundly comatose. In milder cases, emetics, the stomach pump, cold douche and constant exercise are generally sufficient. It is in the worst cases that atropia displays its wonderful effects; for instance, where the pupils are firmly contracted to a pin's point and immovable, the conjunctiva and cornea insensible to touch; the face pale, the lips, eyelids and nails livid; the pulse weak and irregular; the breathing slow and stertorous; the extremities cold. In such cases, he usually injects hypo-dermically half a grain of atropia. Within ten or twenty minutes the pupils begin slowly to dilate, and, after an hour or more, the face becomes flushed; the breathing soft, without stertor; and the pulse stronger. Within two hours, the full effects of the drug (atropia) are manifest, viz., widely dilated pupils, flushed face, hot skin, tranquil slow breathing, diminished frequency and increased strength of pulse, followed by calm and tranquil sleep, from which the patient is easily awakened after three or four hours. If, within two hours, the first dose fails to dilate the pupils, flush the face, and render the breathing slow, steady and tranquil, he repeats the injection. In cases where the coma is not profound, he first employs a quarter of a grain of atropia, repeating the dose if the first be insufficient. He says, "I have observed very sudden and very unfavorable changes set in rapidly, even in the mildest cases of opium poisoning. This has happened so frequently, that I have come to the conclusion, whenever there is contraction of the pupil, and great drowsiness, after the evacuation of the contents of the stomach, it is always advisable to administer a small dose of atropia. I may remark, that in no instance have I seen any bad effects following the subcutaneous injection of atropia."—*London Medical Record*, April 9, 1873.

Female Doctors.

The *Pharmaceutical Journal* quotes the following couplet from the "Nugæ Canoræ Medicæ," where the poet laureate of the Edinburgh New Town Dispensary predicts—

> "An' when the leddies git degrees,
> Depen' upon't there's nocth 'll please
> Till they hae got oor chairs an' fees,
>   An'there's an en' o' you an' me,
> For a' that ken the woman craiter
> Maun own it is her foremost faitur
> To tak' to lecturin' by natur';
> An' hoo she'll do't ye sune 'll see."

Beneficial Influence of Ammonia in Silvering Establishments and others where Mercury is used.

According to M. Meyer, ammonical gas has exerted a most happy effect on the health of the workmen in the great looking-glass factory of Chauny. Having observed by chance that the penetrating odor of this gas modified the suffocating odor of the workshops, he has directed, since 1868, that the floors of the various rooms be watered every evening with liquor ammoniæ. About half a litre is found to be sufficient for the purpose. The explanation is not very clear, but he vouches for the good that results from it.—*La France Médical*, March, 1873,

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Lecture on Puerperal Fever. Delivered at Bellevue Hospital, by Fordyce Barker, M. D.

Gentlemen: We have now had two cases die in this hospital of puerperal fever. We have no more of the disease at the present time. [January 23.]

One woman has shown some symptoms of it, but has seemed to respond to the precautionary measures which have been adopted for its arrest.

The question for our consideration now is; what is puerperal fever?

It is that question which I propose to answer. I shall not enter into a detailed account of all the various opinions which have been presented with regard to its nature; for hardly any two authors agree.

There is, perhaps, no department of pathology in which the productions have been of a higher intellectual order than those we already have in our possession upon this one subject.

I already have upwards of 30,000 pages upon this subject in my own library, and yet variation in opinion is characteristic of the whole.

At one time it was believed to be a peritonitis; at another a phlebitis; another class of observers have believed it to be an inflammation of the peritoneum associated with an inflammation of the veins of the uterus and its lining membrane, each or all combined.

In short, a vast number of authors, who are men of the highest intellectual order, and have had the greatest opportunities for observation, have taken the ground that the fever was a local inflammation of some of the tissues, or some of the organs connected with the uterus, occurring during the puerperal period, and that the constitutional symptoms were due entirely to these local inflammations.

The more recently expressed views, which are the currently accepted ones by a great majority of the profession of Germany and France, and to a certain extent in Great Britain, are, that it is an error to suppose that it is a purely local inflammation, but that it is a constitutional poison resulting from the absorption of pus, and carrying it into the circulation, undergoing a peculiar degeneration or decomposition, constituting what is known as septicæmia.

Then, again, there have been a class of men, to whom I belong, who regard puerperal fever as an essential and distinctive disease, having a special poison, the nature of which has not been determined, but which is just as distinct in its character as is the special poison of the scarlet fever, typhus fever, small-pox, erysipelas.

My own belief is that it has a special poison, characterized by certain general phenomena which always belong to the disease, with anatomical lesions which take the epidemical type of the seasons or of the locality in which it occurs; that it may be or it may not be accompanied with any of the local lesions; that it differs from inflammations in its nature and its results, but any and all of the inflammations may be present.

We are aware that it produces purulent deposits, and if they have an external manifestation anywhere, it is to be regarded as an effort of the system to elimininate the poisonous element, and the prognosis is more favorable; but when the deposits take place in the internal organs it must be inevitably fatal; that it may be or may not be accompanied by septicæmia; but more frequently in prolonged cases, such as those which last for five or eight days, it is accompanied with septicæmia, but in other cases it is not.

Now, as these views are contrary to the current opinions of the day, I am bound to give my reasons for them. You must not accept them unless they are satisfactory to you. You will do well to examine all the arguments *pro* and *con*, and form your own distinctive personal conclusions and opinions upon all medical subjects, for there is no greater barrier to the progress of medical science than to accept the opinions of medical authors simply because they are regarded as medical authorities.

The principal reasons for the views which I hold with regard to puerperal fever may be embraced under four heads.

First.—That puerperal fever has no special characteristic anatomical lesions.

In one epidemic you will find one lesion, perhaps it may be peritoneal inflammation; this probably is more frequent than any other, and at the same time the epidemic has shown itself where no peritoneal inflammation has existed. In another epidemic all of the lesions may be referred to the thoracic cavity, and purulent or sero-purulent deposits will take place in the cavities of the pleura and pericardium. This shows to us that the peritoneal lesions are not an essential characteristic of the disease.

In the year 1862 we had an epidemic of puerperal fever in this hospital, in which the patients exhibited all the general characteristic symptoms and phenomena, but autopsies showed an entire absence of all lesions in the peritoneum, uterus, uterine sinuses or ovaries. There were found the same kind of pathological lesions in the pleura and pericardium as are seen upon the peritoneum when the lesions are manifested there.

Sometimes the lesion is found principally in the plugging up of the veins of the uterus.

Virchow teaches that it is always so; that the open mouths of the sinuses become blocked up by little thrombi; that these thrombi degenerate, become purulent, and, secondarily, produce inflammation of the lining membrane of the veins, from which pus is carried into the circulation, and constitutional disturbance is the result.

While, however, this may characterize one form of epidemic, it may be absent in nine others. So again you will find all these entirely absent, and the uterus itself will be broken down in its structure, and there may be evidence of gangrenous degeneration of the walls themselves; but this, too, shows itself only in connection with certain epidemics, and is not characteristic.

In still other cases, and such epidemics have been seen in this hospital, the patients have died, but there was n*o lesion* to explain the death. Some authors assert that the lesions are not present because they are not looked for, and that pus can always be found. Pure pus alone, however, will produce no serious disturbance in the system in many instances, as is well known, if it does not pass into the circulation.

Second.—These lesions are not sufficient to explain the cause of death or the progress of the disease. I think that this may be safely asserted as a fixed law with reference to this disease. The more intense and rapidly fatal the disease, the fewer are the lesions that are found. Just in an inverse proportion to the violence and severity of the disease is the amount of the anatomical lesions. The cases are not very infrequent in which the patients have manifested the first symptoms and died within twenty-four, thirty-six, or forty-eight hours, and the more violent the disease is, the more rapid and violent its course, the less of anatomical lesions are found at post-mortem; and from this we have a demonstration that it is not the lesions which cause the death. I became convinced of this fact many years ago, and I arrived at that conclusion by the most minute examination in the way of pathological lesions in the most violent cases. I would not detract from its value in the least by any experience which I possess to-day, and I think it is a very common mistake to regard these results as the original cause of the disease.

The intense violent poison kills the patient before there is any time for these distinctive changes to take place, which constitute in the minds of many the characteristic features of the disease.

Third.—We may have the most intense inflammation of the pelvic organs, and the disease not be puerperal fever. The autopsical lesions and symptoms in such cases are very different from what is associated with these inflammations when connected with puerperal fever. The patient may have all the violent symptoms described as characteristic of peritonitis, such as intense pain, flexure of the thighs upon the body, exquisite tenderness, etc., and yet only have peritonitis modified simply by the condition of the woman in a puerperal state, following its usual course and terminating in the same way, and no puerperal fever at all. This patient has had puerperal fever, but has had none of the exquisite tenderness which requires the knees to be drawn up, yet has had some pain and some tenderness upon pressure. The same thing is true of phlebitis. This may occur after or previous to confinement, and may not be a severe disease.

Fourth—The lesions differ essentially from those produced by inflammation. In an ordinary case of peritonitis the result is an intense capillary injection of the surface of the peritoneum, and the production of plastic lymph.

If the peritoneal lesion is the predominant feature in puerperal fever, we have no bright scarlet hue, but the dark hue from venous and capillary congestion. The effusion, instead of being an adhesive fluid, is commonly so only in a very slight degree, and is generally made up of broken-down pus, flakes of lymph, a pus always sanious and sometimes colored with blood. In the same manner I might go through with the lesions of phlebitis and point out their distinguishing characteristics, but my time is now too limited.

The next characteristic of this disease which shows that it is dependent upon a special constitutional poison, is the fact that it is contagious. I believe the evidence is complete which proves that puerperal fever is contagious. This is not so with regard to special inflammations.

This character, that of the contagion, is sufficient of itself to protect it from being considered as a pyæmia or septicæmia. There are numerous illustrations where some physicians, who have been exposed to puerperal fever, with or without hospital practice, and who have exercised the greatest precaution, have had every woman die with whom they were present during their confinement, with puerperal fever; while another physician in the same locality will not lose a single patient with the disease. Has it ever been known that one surgeon exposed to septicæmia or pyæmia has thus rendered himself more dangerous to his other patients, while all other surgeons of the same neighborhood were exempt? This alone is sufficient to demonstrate that there is something distinct between the poison of puerperal fever and that of pyæmia or septicæmia. At the same time I not only admit, but assert, that pyæmia and septicæmia do very often occur in connection with puerperal fever.

Some thirty years ago an epidemic of erysipelas broke out in a town some twenty miles from where I was then practising medicine. During the prevalence of that epidemic every woman who was confined in that vicinity died of puerperal fever. The association of erysipelas with puerperal fever has been very often noticed, and some writers have spoken of the poison of the two as being identical; but I do not think there is sufficient proof that they are identical. In this epidemic, however, there was one circumstance which was sufficient to illustrate at least the close affinity which the two poisons bore to each other.

I also believe, contrary to the assertion made in special text-books, that puerperal fever is not confined to hospitals in large cities.

I have just referred to one epidemic where it was associated with erysipelas, and can refer to other epidemics in the country where it has been associated with exanthematous diseases, or entirely independent of any of them, yet all occurring in rural districts, which does away with the idea that it is a hospital disease.

Why it is untenable to suppose that the poison of puerperal fever produces sepiticæmia, while we know that erysipelas produces septicæmia and pyæmia, and that we also have them occurring in connection with the blood-poisons, as typhus, scarlet fever, erysipelas, etc.?

I will recur to my original points in answer to this, viz.: that puerperal fever is a constitutional, specific disease, having its essential poison, which acts through the medium of the blood, producing its local lesions, its specific forms of development according to certain elective affinities, dependent on the nature of the epidemic surrounding it.

This is my gospel, and I only ask you to consider the question for yourselves.

The clinical history and treatment will be considered at our next lecture.—*The Medical Record.*

Reinfection in Constitutional Syphilis.

In a recent number of the *Berliner Klin. Wochenschrift* (46, 1872), Köbner has collected 45 cases of syphilitic reinfection, and has added to them eight others which have come under his own observation. He believes thoroughly that syphilitic persons may be liable to fresh infection, but thinks that the proof of it lies in fresh induration, with its proper characteristics, attended by an incubation of several weeks' duration. In several cases the diagnosis could be confirmed by confronting the infecting with the infected person. Among other conclusions the following are drawn from his investigations:

1. Constitutional syphilis is entirely curable.

2. He does not agree with Diday that there is any definite period, as 22 months, at which time the disease may be eradicated from the system. Nor does he approve of inoculation with syphilitic virus to determine whether the original disease was cured or not.

3. Many of the inveterate or so-called tertiary affections, as sarcocele and exostoses, are only to be regarded as local products or the remains of a previously existing disease, and not as symptoms of a general infection, and their significance is not of so much importance for the general system as for the special parts affected. This may explain a fact which is frequently observed, viz.: that sound children may be born of parents who have tertiary syphilis.

4. In more than two-thirds of all these cases where the cure was so complete as to render them liable to a second infection, the treatment was mercurial, and internal preparations were employed rather than the inunction method. The author therefore concludes that mercury is one of the best curative agents in syphilis —*Schmidt's Jahrb.*, 2, 1373.

Thrombosis of the Cerebral Arteries.

Dr. John A. Lidell, of New York (*Am. Jour. Med. Sciences*, April, 1873), records ten cases of *thrombosis* of the cerebral arteries, which have been met with much less frequently than *embolism* of these arteries.

Old topers are liable to be carried off by thrombosis of the cerebral arteries, because their habit of drinking to excess increases the coagulability of the blood, and, at the same time, renders the cerebral blood-vessels liable to the occurrence of vaso-motor paralysis with dilatation of their calibre, and stagnation of their contents—a circumstance which strongly favors the formation of blood-clot. Thrombosis of the cerebral arteries must, therefore, be looked upon as an occasional consequence of chronic alcoholism.—*The Medical Record*.

Hernia.

Thomas Bryant, F.R.C.S., Surgeon to Guy's Hospital, in his

"Practice of Surgery," remarks that where a hernia can be kept up by a truss, and the patient is likely to remain in a civilized country, where trusses can be obtained, any operation for the radical cure is an unjustifiable one; to risk the life of a patient on a theory of a cure, with the probability that the patient will be rendered less liable to its descent, when a truss has to be worn subsequent to the operation as a matter of safety, is a practical delusion.—*The Medical Record.*

Iodide of Potassium in Syphilitic Skin Diseases.

Dr. McCall Anderson (*Med. News and Library*) lays down the following rules with regard to the employment of iodide of potassium in the treatment of syphilitic skin diseases:

1st. The longer the interval which has elapsed between the contraction of the syphilitic taint and the development of the eruption, the more confidently may we substitute it for mercury.

2d. If the patient is cachectic, it is, as a rule, to be preferred to mercury, except in recent cases of syphilis, when the mercurial vapor bath, or some such treatment, is more likely to prove successful.

3d. The more extensive the tertiary eruption, the more certain it is to yield to the iodide of potassium, although to this rule there are numerous exceptions.

4th. If there is any tendency to syphilitic disease of the nostrils or neighboring parts, iodide of potassium should be withheld, or given with great caution; for, if it produces coryza, it is very apt to aggravate the morbid condition of the parts.

5th. It should be given in full doses.

It is generally advisable to prescribe it in combination with a bitter, and, in cachectic patients, a little iron is a valuable addition, as in the subjoined prescription: Ammonio-citrate of iron, ʒiij; iodide of potassium, ℥i; syrup of ginger, ℥vi; comp. inf. of gentian, ℥viij; water to ℥xxiv. A table spoonful in a large wineglassful of water, thrice daily.—*The Medical Record.*

Combination for Chronic Diarrhœa.

Rayer (*Union Medicale*, No. 73) advocates the combination of cinchona, charcoal and bismuth, in the management of chronic diarrhœa, in these proportions: Subnitrate of bismuth, ʒj; cinchona, yellow, powdered, ʒss; charcoal, vegetable, ʒi; M. chart. xx. S. Two or three times daily during the intervals between meals.—*The Medical Record.*

Is Salivation Desirable in Syphilitic Iritis?

Dr. A. D. Williams, St. Louis, Mo. (*Med. Archives*, March, 1873), protests against the following remark of Ricord, made in his speech before the British Medical Association, in 1872, on the treatment of syphilis: "There is but one case in which I approve of salivation, and that is where there is iritis. When this occurs and salivation is brought on, the inflammation of the iris subsides." Dr. Williams expresses his disbelief in even the *desirableness*, much less *necessity*, of salivation in the treatment of specific iritis; so far as he can judge, *mercurialism* is a hindrance to the progress of the cure rather than a benefit. Mercury, even to the extent of salivation, will not prevent the formation of those adhesions between the pupillary margin of the iris and lens which always interfere materially with vision. "Mercury," he says, "is necessary in the treatment, but never to the extent of salivation—certainly not to severe salivation. The local treatment is all-important. This consists in the *energetic* use of atropine in the eye, so as to dilate the pupil to the fullest extent."—*The Medical Record.*

Mortality of Various States of the Union.

The highest death-rate in the United States, according to the table, was given by Memphis, viz: 46.6 in each 1,000 inhabitants; in Savannah, the mortality was equal to 39.2 in each 1,000 inhabitants; in Vicksburg, 36.5; in Troy, 34; in Hoboken, 32.9; in New York, 32.6; in Newark, 31.6; in New Orleans, 30.6; and in Boston, 30.5. These were the highest figures of mortality. The other principal cities furnished the following death-rates: Philadelphia, 26.1; Brooklyn, 28.1; St. Louis, 20.1; Chicago, 27.6; Baltimore, 25.1; Cincinnati, 20.5; San Francisco. 17.2.

Of the larger British cities, Dublin yielded the greatest death-rate, viz.: 29.9 each 1.000 inhabitants; that of Manchester being 28.6; of Glasgow, 28.4; of Leeds, 27.9; and of Liverpool, 27.1. The death-rate of London was as low as 21.4—less than that of any other important British city.

On the continent of Europe, the highest death-rate was noticed in Prague, Bohemia, viz.: the enormous one of 48.9 in each 1,000 people. It was excessive in Cadiz, Spain, where it was equal to 44.7; in Munich it was 41.8; in Rome, 36.7; in Naples. 35.7; in Florence, 35.1; in Athens, 33; in Berlin, a city with little less population than New York, it was 32 3, or nearly equal to our own; in Bologna, Italy, it was 32.2; and in Vienna, Genoa, Stockholm, and Nice, 31.8. The large mortality of the last mentioned city is owing to the many deaths of invalid strangers sojourning there. High death-rates prevailed also in Havre, Rotterdam, Leghorn, Venice and Milan, ranging between

31 and 30. In Paris it was stated as only 21.1—but all deaths by strangers and travellers are there excluded.

The lowest mortality was given by the Swiss cities in Zurich, Geneva, and Basle—13.9, 19.4, and 20.9 respectively—and Christiania, Norway, 20.7 Algiers, Africa, grve a death-rate of 33.6. That of the Indian cities of Bombay and Calcutta was by no means high, being 29.2 and 25. In Madras, however; it was 35. In Montreal it was 37.3, and in Havana 35.1. The highest known death-rate prevailed in Valparaiso, Chili, viz.; 66.9 in each 1,000 inhabitants, This was the only South American city heard from.—*The Medical Record.*

Davis on the Treatment of Cerebro-Spinal Meningitis.

Dr. Nathan F. Davis, of Chicago (*Clinical Lectures on various Important Subjects*, J. Spalding & Co., Chicago, 1873), writes concerning cerebro-spinal meningitis, of which he seems (according to the *Boston Medical Journal*) to have had much experience, that he has been "unable to gather any evidences of the contagiousness or communicability of the disease." He believes the Calabar bean to be a most valuable remedy in this disease, having more apparent effect in controlling it than any other remedies which he has tried. He says he was led to employ it on account of its apparent succ ss in tetanus, and because he had used it with benefit in several cases of muscular rigidity from irritation of the nervous centres. He employs a tincture of the bean, in combination with the fluid extract of ergot. He does not inform us what is the strength of the tincture, but it evidently differs from that of Dr. Fraser, since the dose for a child eleven years old is about twelve drops.—*London Medical Record.*

Digestive Power of Saliva and Pancreatic Juice During Infancy.

The recent experiments of Korowin, of St. Petersburg, upon the saliva of newly-born infants and sucklings, in regard to the time of its very earliest appearance and its fermentative power at different ages, well deserve the careful attention of all interested in the dietetics of children. Korowin (*Centralblatt*, 1873, Nos. 17 and 20) adopted the plan of giving to infants pieces of compressed sponge to suck, and then squeezing from these whatever saliva, if any, might be collected. In this way he was able to determine that saliva may be obtained from the mouth of a child only a few moments born. The secretion is, however, very scanty; indeed, during the first two months of life collecting the saliva is a most difficult process, and demands great perseverance, not more than one cubic centimetre being obtained at one time (fifteen to thirty minutes) in any experiment. From the end of the first month of life, and especially after the sixth week, the amount of saliva which may be removed increases much. In the third month as much may be obtained as in the first months in one-tenth the time. In the fourth month one to one and a half cubic centimetres can be collected in from five to seven minutes, and it is at this age that the saliva begins to flow visibly from the mouth of the child.

The saliva of the child possesses its diastatic or fermentative property from the time of its appearance—that is, immediately after birth. The action of the saliva, however, is not always equally powerful; on the contrary, it increases steadily and rapidly with age up to a certain point, as Korowin was able to determine by watching children for months. It seems certain that while the diastatic power of saliva increases up to the eleventh month of age, it then reaches its maximum—that is, a given amount of saliva of a child of eleven months and of an adult respectively, decomposes equal quantities of starch-paste.

Korowin has also turned his attention to the pancreas and its secretion in newly-born children and in sucklings. The pancreas was removed from the bodies of children who had died of various diseases—at various intervals post-mortem. An artificial pancreatic juice was then prepared in the usual manner, and the amount of glucose formed estimated quantitatively. The results obtained are very important: In a child of one month the action of pancreatic juice upon starch is absolutely *nil;* it is first demonstrable in the second month, but very feeble; at the end of the third month of life it has become sufficiently powerful to make a quantitative estimation possible of the sugar formed, The diastatic action of the pancreatic juice, once acquired, steadily increases in intensity with age, and reaches its maximum at the end of the first year of life.—*Med. Times and Gaz.*

Thoracentesis.

At a recent meeting of the New York Academy of Medicine, Dr. Leale read a paper "On Thoracentesis," based on the cases that had been recorded during the last eight years. He concludes as follows:

"After carefully considering the subsequent histories of all the patients on whom I have performed thoracentesis during the last eight years, I find that it has proved successful in every instance, by preventing death preceded by the most agonizing symptoms that the physician is called on to witness; and in the majority of instances we may confidently hope for a restoration to at least very good health. As in tracheotomy and abdominal paracentesis, we prefer the scalpel to open the chest. 1. As a safer procedure. 2. An incised wound is known to heal, if required, with greater certainty. 3. By using a long male silver catheter the most dependant part of the chest can be emptied of its fluid contents, and there is no danger of pricking the lungs from change of position or movement of the patient while the liquid is being withdrawn. 4. When pus has commenced to undergo change preparatory to absorption, the probabilities are that very little, if any, will be reproduced after the operation, if the wound be immediately closed. 5. In closing the wound under the above circumstances, the little air admitted and the small quantity of pus left behind are very soon absorbed. 6. If pus should again accumulate in the chest, the operation is so easy, the pain so slight, and the closure so rapidly accomplished, that a repetition is nowise to be feared, and really causes less prostration than sometimes where a large incision is made, and perhaps pus formed with greater rapidity. 7. Atmospheric air, pus and blood, even to the extent of about eight ounces, may be absorbed, and the compressed lung can again resume its normal condition. 8. When unhealthy decomposition has commenced, the wound should be left open, and the parts carefully disinfected. 9. Thoracentesis should oftener be performed for the quick removal of fluid from the chest, even in far advanced phthisis, when relief may be obtained, life prolonged, and painful death averted."

Dr. Eliot said that he had notes of twenty of the cases he had met with. In one of these the operation was performed five times, in another three times, and in eight cases twice. Of these cases nine were fatal; but even in these the operation gave relief. In no one case did it fail to do this, and never was it followed by bad effects. He thought that the operation was useful in some cases of phthisis, giving expansion to the lungs. If we knew that the patient had pneumo-hydrothorax, it would be questionable whether the operation should be performed unless a great deal of dyspnœa existed.—*Med. Times and Gaz.*

Therapeutical Value of Phosphorus.

In an interesting paper on the physiological action and therapeutical effects of phosphorus, published in the *Bulletin Général de Thérapeutique*, M. Gubler states that phosphorus is a diffusible stimulant of great energy and of dangerous activity. It should therefore only be prescribed with the greatest possible caution, and certain contra-indications may in the first instance be laid down. Thus it should not be used in any affection characterized by nervous, circulatory, or trophic excitation, as in tonic and clonic convulsions, contractions, neuroses having a hypersthenic origin, diffuse peri-encephalitis with general paralysis, phlegmasiæ of all forms, fevers of every kind, exanthematous affections, etc. The indications for its use are the existence of disease unaccompanied by inflammation, fever and nervous excitation, and especially in such cases as are characterized by depression of the circulation, either local or general, diminished power of generating heat, exhaustion or local asthenia, with paralysis of sensation and movement. Hence its value in cachetic states consecutive to long and exhausting diseases, marsh fevers, protracted convalescence, tabis dorsalis, paralyses of old date, and of cerebral, medullary, or peripheric origin, when there are no signs of irritation; in hemiplegia, paraplegia, amaurosis, and other partial paralyses. Phosphorus again is sometimes useful in making chronic eruptions advance or recede; but it is especially as a remedy for impotence that it has been praised, though it has often disappointed the expectations of those who have prescribed it, and has either proved of no value at all, or its effects have been only ephemeral. Hence it would appear that the real remedial power of phosphorus is considerably restricted, and that it can only be regarded as of great value in paralytic affections. Dr. Delpech, who has studied so deeply the effects of sulphuret of carbon, praises phosphorus highly as an agent to remove the paralysis and loss of power which accompany intoxication by that substance. It is also of service in the so-called rheumatismal and hysterical paraplegiæ, or in other words those forms of paraplegia which are not caused by organic lesion, as well as in cases of cerebral disease in which all irritation has ceased and cicatrisation has taken place. It is still more strongly indicated in cases of asthenic and diffused paralysis, consequent on diphtheria or some other acute affection. Gueneau de Mussy, Isambert, and Féréol have all found it efficacious in the treatment of mercurial tremor; it is also believed to be so in paralysis agitans and in the various forms of medullary sclerosis affecting the antero-lateral cords, and above all in sclerosis of the posterior columns, the symptomatic expression of which is summed up in the term locomotor ataxy, which has been applied to it by Duchenne. Dujardin-Beaumitz is he who has most strongly recommended the plan of treatment by phosphorus in this and similar affections; but it is questionable, M Gubler thinks, how far many of the successes attributed to its use are really due to its remedial powers. We forget, he says, the natural processes of cure that often take place. Phosphorus is an active agent that may momentarily re-illumine the fading spark and revivify the languishing powers of life; but as it brings no energy with it, it impoverishes rather than enriches, and can do little for a nervous system exhausted by a chronic affection. The amorphous phosphorus is perhaps the best mode of prescribing it, as this possesses no exciting or irritating action. Externally, it has been chiefly employed in squamous affections of the skin as a parasiticide in itch, and as a caustic in the place of moxa. Recently Tavignot has declared that it will render the cataractous lens transparent, but the negative facts obtained by MM. Gosselin and Maisonneuve render this more than doubtful. In regard to the mode of its administration, solutions are usually preferable to pills. Amongst the former are the ethereal tincture, which contains one part in sixty, and of which ten drops are a dose; the solution in chloroform, which is now almost abandoned; and the solution in oil, which is by far the best, and especially that prepared by Méhu. Here the oil is dehydrated and decolorized by exposure to a heat of 250° C., and the phosophorus is added when it has cooled. A twentieth part of ether is then added. The proportion is one part of phosphorus to 500 of oil, and it contains two milligrammes in fifteen drops. Each capsule contains one milligramme.—*London Practitioner.*

The Use of Nitric Acid in the Treatment of Uterine Disease.

Dr. Lombe Atthill, of Dublin, observes that most British gynecologists are convinced of the advantages to be derived from the application of remedies to the inner surface of the uterus when the mucous membrane lining the cavity of the organ is in a diseased condition. Careful consideration of the various cases, and of the remedies that have been proposed, renders it probable that no single method and no single agent can be satisfactory in all cases. In the paper from which this extract is taken, he endeavors to point out the advantages in certain cases of the application of fuming nitric acid. The first case he mentions was one where the patient, a young woman, suffered from profuse menorrhagia. The cervix uteri was soft and swollen, the vaginal surface deprived of its epithelium and covered with large vascular papillæ, the os uteri patulous, and the mucous membrane lining the cervical canal being also evidently in a diseased condition. The solid nitrate of silver was repeatedly applied without any improvement following. Then, suspecting that the disease extended into the uterine cavity, Dr. Atthill introduced a sea-tangle tent, on withdrawing which he passed up to the fundus a stilette armed with a film of cotton saturated with the fuming nitric acid. No pain was experienced, but improvement immediately commenced, and resulted in perfect recovery. He describes other cases of profuse menstruation in which he applied the same remedy with more or less advantage. He has found this plan of treatment to be very valuable when applied with the view of checking or preventing the occurrence of hemorrhage after the removal of intra uterine tumors, or of exciting healthy action in the mucous membrane lining the cavity of the uterus which has been the seat of polypoid growths. In Dublin nearly all obstetric practitioners now mop out the interior of the uterus with the fuming nitric acid after the removal of tumors. In one case, however, which Dr. Atthill records, it caused occlusion of the os and cervix uteri. He thinks the fuming nitric acid very useful in those forms of imbedded fibrous tumors of the uterus in which, hemorrhage being profuse, surgical interference seems called for. His experience in the use of the fuming nitric acid has led him to the following conclusions: 1. That when tenderness on pressure exists, it should, before the acid is applied, be removed, or at least materially lessened, by local depletion. 2. That when this precaution has been taken, fuming nitric acid may be applied with safety to the interior of the uterus. 3. That when the cervix has been previously freely dilated, its application does not cause any pain. 4. That in some instances it seems to exert a directly soothing effect upon the nerves of the uterus. 5. That when applied through a canula pain is sometimes produced, but less severe in character than that caused by the use of the solid nitrate of silver. 6. That its use is in some cases followed by hemorrhage of moderate amount, which, however, does not influence the resultof the case. 7. That if applied to the *healthy* cervix, it may produce contraction and possibly obliteration of the cervical canal, and that consequently means should be adopted to guard the cervical canal, when *healthy*, from its action. 8. That in cases where imbedded fibrous tumors exist, the fuming nitric acid exercises a marked influence in controlling hemorrhage and allaying pain. When it has been decided that nitric acid shall be applied after previous dilatation of the cervical canal, Dr. Atthill seizes the anterior lip with a vulsellum, and thus draws down and steadies the uterus. He then introduces the blades of his intra-uterine speculum to the depth of about an inch, and expands them slowly to an extent sufficient to permit a pair of fine forceps holding a roll of cotton to be introduced. With the cotton he dries the inner surface of the uterus, and, withdrawing the cotton, passes through the speculum a probe armed with a roll of cotton saturated with the fuming nitric acid. A second probe, similarly armed, is passed to insure thorough cauterization. The blades of the speculum are now closed. A pledget of cotton, soaked in oil, or, better, in glycerine, is placed in the vagina, and the patient kept quiet in bed for some days.—*Obstetrical Journal*, No. 3, June, 1873.

Importance of Physiological Knowledge in every-day Medical Practice.

Our attention has been drawn to the discussion which took place, very lately, at the College of Physicians, respecting examinations for the minimum qualifications to practice medicine, and to the comments of sundry medical journals thereupon. We regret to say it is evident that the authorities who are arranging the scheme for a conjoint Examining Board have never taken the trouble to think seriously about the problems which are involved in the daily work of the general practitioner. They seem to suppose that to him physiology is a matter of trivial importance, while the mere distinguishing one disease from another, so as to be able to hang a label round the patient's neck, and punish him for being ill by giving a particular kind of physic, is everything. We hope to have an early opportunity of showing, in some detail, what a monstrous inversion of the facts is involved in this idea; but as the seniors of the College of Physicians have in their wisdom thought fit to ridicule the idea of the importance of accurate physiological knowledge to the practitioner who is absorbed in practical work, we shall confront them, at once, with a few plain questions. We ask, in the first place, whether a sound knowledge of the main divisions of food, the manner of their digestion, the kind of effect which particular morbid states have on the digestibility of particular aliments, and the difference between the digestive functions of children and of adults, is not of the very first importance? Secondly, whether the real nature, that is, the chemical composition, of the excreta, and their relations to the different sorts of work done in the body, is not an absolutely essential piece of knowledge for *any* practitioner? There are a score of similar queries which we could readily suggest, but we must leave this to a future occasion. As promoters, in our humble way, of the progress of therapeutics, we could not allow so barbarous a doctrine as that which is tacitly laid down in the Conjoint Examination scheme, as interpreted by the committee of reference, to pass unchallenged for a moment; and we hope that the profession at large will repudiate it with energy.—*London Practitioner.*

Nitric Acid in Uterine Disease.

I have now given the result of my experience in the use of nitric acid as applied to the interior of the uterus, and in doing so have adhered rigidly to facts. I am not blindly wedded to the use of this one agent. On the contrary, I am at the present time giving a full and fair trial to the carbolic acid, as suggested by Dr. Playfair, and to other agents. As yet, I have obtained more satisfactory results from the use of nitric acid than from any other caustic, but I am satisfied that it is not suitable to all cases, and trust we shall yet be able to define clearly those cases to which the various agents are most suitable. In concluding this paper, I should add that I almost invariably employ nitric acid in the treatment of granular ulcerations of the cervix uteri and cervical canal with the best result. Space does not permit, however, to enter into details on the present occasion.—*Atthill—Obstet. Journ., Great Brit.*, June, 1873.

Transfusion of Milk in Cholera. By Edward M. Hodder, M. D., Toronto, Canada.

Previously to the last advent of cholera, twelve or fourteen years ago, I suggested to my friend and colleague, Dr. James Bovell, the propriety and probable success of transfusion of blood. He at once met me with the objection that the supply would most likely fail, inasmuch as few persons would like to part with their blood during an epidemic of the kind, and if they did we could not be sure that the blood itself was not diseased. This appeared to knock my scheme on the head at once, but I began to reflect, and to ask myself, What is the nearest analogue of the blood? and milk came to my mind. The next question to be decided was, whether milk had ever been injected into the veins of man or animals, and what was the result? I found that Donné had injected it into the veins of dogs, rabbits and birds, and that it did not kill them, but, on the contrary, he, with Wagner, Gulliver, and others, were of the opinion that the white corpuscles of the milk were capable of being transformed into red blood-corpuscles.

I then decided on the transfusion of milk into the human veins, should cholera pay us another visit.

At length the true Asiatic disease made its appearance, and found the City Fathers as unprepared for it as if such a disease had never existed. Dr. Bovell and myself volunteered our services, and an old shed on the hospital grounds (used as a small-pox ward) was made the temporary cholera hospital. The first two or three cases were moribund when brought in; but the next day, about noon (the hour at which the medical officers of the hospital made their rounds), a stout-built farmer, who had come to Toronto on business, was admitted, He was in a state of collapse, cold, pulseless, blue and shrivelled; the secretion of the urine was arrested; there were vomiting and purging of rice-water fluid—in fact, he seemed dying.

I immediately got everything ready, and then sent a message requesting consultation with any of the medical officers who might be in the hospital, when four gentlemen came, and I asked them the following questions: "Do you consider this a genuine case of epidemic Asiatic cholera?" "Certainly, and a very marked one." "Do you think anything can be done to save him?" "Nothing; he is dying." "Would any medical treatment be likely to be of any use?" "None." "Then he must die?" "Yes." "Then, gentlemen," I said, "I am about to try the experiment of transing milk into his veins." "If you do, you will kill him," was the reply Thereupon I invited them to be present at the operation, but three out of the four left the building; the fourth remained but would not assist. Everything being ready, I ordered a cow to be driven up to the shed; and, while she was being milked into a bowl (the temperature of which was raised to about 100° Fahr.) through gauze, I opened a vein in the arm and inserted a tube, and then filled my syringe (also previously warmed) and injected slowly therewith. No perceptible change, either for better or for worse, took place; so, after waiting two or three minutes, I again filled the syringe, and injected seven ounces more. The effect was magical: in a few moments the patient expressed himself as feeling better; the vomiting and purging ceased, the pulse returned at the wrist. the surface of the body became warm—in fact, the man rallied, and speedily recovered without a bad sympton.

The next day a woman, an habitual drunkard, was admitted in the same condition as the above described man. I transfused fourteen ounces of milk in a similar manner, and in a few minutes the vomiting and other symptoms ceased, and she improved; but towards evening collapse came on, when I injected fourteen ounces more milk, and she also recovered, but after secondary fever.

The third case was admitted almost *in articulo mortis*, but he rallied for a time, then collapsed, as the woman did, and died during my absence from the shed. Had I been present I should have injected more milk into his circulation, and he might have rallied again.

Dr. Bovell and myself then applied to the corporation for a good cow, and a few articles indispensably necessary for the comfort and well-being of the patients; these were refused, and we thereupon sent in our resignations.—*Extract from a Letter to the Editor of the London "Practitioner."*

Mercurial Treatment of Syphilis.

A Discussion took place at the Medical Congress of Lyons at the end of September last, which, from the importance of the subject, the competence of the speakers, and the exclusively practical nature of the arguments advanced, is worthy of attention. The Congress of Lyons shows that syphilographers are divided into three classes—the mercurialists, the non-mercurialists, and the eclectics. Amongst the first were included MM. de Méric, Pacchiotti, Clerc, Drou, and Rodet; amongst the second, MM. Armand Deprés and Drysdale; and amongst the third. MM. Diday, Gailleton, and Clément. Experience, it was argued by M. Clément, teaches us that if mercury does not attack syphilis, it at least affects its manifestations to an extent indeed that it may be said to abolish its effects, so that a syphilitic man may procreate perfectly healthy children. To this view many of the speakers were inclined, but considerable difference of opinion existed as to whether mercury should be given to a man who had simply a chancre. M. Diday adduced 74 observations directed to this point. Of these, 25 had been at once submitted to mercurial treatment, whilst 49 only had general treatment during the primary period. Amongst the 25, secondary affections appeared on the average forty-nine days after the appearance of the chancre, whilst in the 49, secondary affections appeared forty-three days after the *début* of the chancre, that is to say six days sooner than the others. The effect of the mercury would therefore appear to be very slight on the secondary action of syphilis. M. Diday, however, further found that in the patients non-mercurialized at the outset, slight secondaries occurred in 34 per cent., and severe in 10 per cent.; whilst in those who had taken mercury during the period of chancre the ratio of slight cases was only 24 per cent., and of severe, 20 per cent. M. Diday concludes that the intensity of syphilis depends less on the treatment adopted at the outset than upon the constitution of the patient and the extent to which the general principles of hygiene have been observed. M. Clerc, who is a strong mercurialist, pointed out various circumstances that in his opinion explain the want of success frequently met with in the use of this remedy. First, it is given in insufficient doses: there is nothing to fear in producing slight stomatitis. Secondly, there are often defects in the mode of administration. Thirdly, hygienic conditions are often neglected: insufficient exercise, the abuse of wine and tobacco, debauchery, often obviate the good effects of a mercurial course. M. Clerc commences the administration of mercury as soon as the chancre appears, because from this date the system is affected. He does not believe or anticipate that it will arrest its development entirely, but he thinks it exerts a material influence in retarding their appearance and reducing their violence. M. Gaileton, a partisan like M. Diday, of the doctrine of *poussées successives obligatoires*, or of successive developments and extensions of the disease, employs the mercury only when secondary symptoms have manifested themselves; there he thinks it stops. M. Rodet (of Lyons) commences the use of mercury at once after the chancre has made its appearance; he pushes the remedy vigorously, and changes the preparation frequently, to get a speedier and more prolonged action. Commencing generally with bichloride in increasing doses, he exchanges it for a time after the protiodide, and finally, gradually diminishing the quantity of this, replaces it with iodide of potassium. M. Pacchiotti thought that mercurial frictions had been too much neglected; whilst M. Drou alluded to the employment of the method of subcutaneous injections, which he was of opinion might sometimes be advantageously employed instead of other plans.—*Journal de Médicine*, Chaillou and Lucas-Championnière, Nov. 1872.

On the Treatment of Enteric or Typhoid Fever.

Dr. Little remarks that the standard text-books on the treatment of this disease are not sufficiently explicit, and in fact all is not stated that can be done in cases of typhoid fever. The opinions that he now expresses are founded on treatment of his own cases. Next to early confinement to bed, which perhaps more than anything else lessens the severity and risk of the fever, he ranks the rigid exclusion of animal broths and jellies from the food, as tending to keep the disease mild. In this point he finds himself at variance with the text-books, in which such articles as beef-tea and Liebig's essence of meat are recommended. Milk should be the chief article of diet in enteric fever. Thirsty patients sometimes object to its mawkish taste, and in that case ice should be added, and a little lime-water in cases where it returns curdled. Junket or renneted milk, given before it has separated into whey, and curd, rice milk, custard, baked custard in small quantities, rusks and hot milk, and blanc-mange, generally afford sufficiently varied ways of giving milk. Freshly made chicken jelly is less liable than beef-tea to increase the abdominal symptoms, in those cases where milk even with lime-water disagrees; but Dr. Little finds that this is a very rare occurrence, and when encountered is usually in a person chronically dyspeptic. For years he has made the administration of two or three cups of really good tea or coffee, between day-break and two in the afternoon, a regular part of the treatment in every case of fever, unless there was in the state of the nervous system some evident contra-indication. This he recommends in consequence of the well-known observations of Dr. Parkes on the effect of coffee in increasing the elimination of urea in fever; and Dr. Little finds that both it and tea lessen drowsiness and prostration, and increase the secretion of urine. Once or twice in the day they may be given, poured upon a well-whisked egg, and thereby an additional means of nourishing the patient is obtained. Dr. Little considers that alcoholic stimulants in any quantity are seldom needed. Cold baths he thinks serviceable: three, or at most four, may be given in the twenty-four hours. In severe cases he has used them with great benefit, where cooing and wheezing râles exist in the chest, and where deficiency in the percussion-resonance posteriorly and muco-crepitus indicated postural stasis in the lungs, but not when there was hemorrhage from the bowel, or such pain as to justify the fear that peritonitis existed. Where there is slight chilliness in the extremities after a bath, and shivering, this indicates that it should not be a prolonged one, but does not forbid its use. Twice Dr. Little has considered it unsafe to continue the baths—once because a marked shivering followed, and once because the patient was alarmed by it. In cases of the disease running a mild course, it is not necesary to have more than one bath in the day, at the height of the usual evening paroxysm of fever. By a dietary such as has been described, and the systematic employment of baths, the severity and danger of enteric fever may be greatly diminished, and the occurrence of any of the serious accidents incidental to the complaint rendered very rare, but the period of duration is not shortened. Besides these means, Dr. Little has found others beneficial under certain conditions. When during the first eight days the face is flushed, and there is headache, a high temperature, and a thickly coated tongue, and when the evacuations, three or four in the twenty-four hours, are neither very large nor very liquid, a dose of calomel, from four to six grains, perceptibly lessens the heaviness of the fever. He has sometimes given the calomel a second time after an interval of a day or two, but never oftener. In enteric fever it is not uncommon to find a patient lying on his back, perceptibly impeded in his breathing, his abdomen tumid and projecting, but markedly tender; and on inquiry it will be found either that the bowels have not acted for twelve hours, or that, though the stools are frequent, only a very little fæcal matter with wind passes each time. In these cases much relief may be obtained by giving a draught containing two drachms of castor oil with one or two of turpentine. Poultices and fomentations he has not found useful. By keeping patients rigidly to the diet mentioned, it is not found necessary to give medicines to check looseness of the bowels: when it is necessary to interfere, the most useful remedy is a pill containing one-sixth of a grain of carbolic acid, one-sixth of a grain of opium, and three grains of bismuth. Another remedy is sulphuric acid. Hemorrhage from the bowels is rare when milk diet and cold baths are employed; when it occurs, gallic acid, a scruple every second or third hour, and turpentine, were the remedies upon which he relied. Since ergotin has been shown to possess the power of arresting hemorrhage, administered hypodermically, Dr. Little has tried it in one case successfully. There is a group of nervous phenomena sometimes present in typhoid fever, for which the remedy is a full dose of quinine. For delirium and wakefulness with severe headache, cutting the hair and leeches are the remedies. Nauseau and persistent retching may be relieved by an emetic of ipecacuanha or ice, or a draught containing ten grains of bicarbonate of soda, ten grains of carbonate of bismuth, and four minims of prussic acid. Scantiness of urine requires dry cupping of the loins, and the internal use of the salts of potash and spirit of nitrous ether. Indications of pulmonary congestion, which are sufficiently common in enteric fever, are best relieved by a turpentine stupe.—*Dublin Journal of Medical Science*, No. 5, 1872.

The Treatment of Boils by Alcohol.

M. Nélaton has for more than twenty years prescribed the use of alcohol for the prevention of these smaller abscesses which are so common amongst young people, and which so seriously impair the beauty of the face. It appears that this treatment is now extending, as some interesting details are to be found in a communication of M. Simon de Forges, of Sainte-Fourtaine, which appeared in the *Revue de Thérapeutique*. In speaking of boils, small outward abscesses, and other inflammations of the epidermis and of the derma, he observes that as soon as the characteristic circular redness appears on any part of the body, whatever may be its size, with a point rising in the middle, making it a greyish white, a thimbleful of camphorated alcohol should be poured into a saucer; the palm of the hand should be wetted with it, and this should be rubbed with gentle friction over the affected place. The fingers should be again steeped, and the friction continued as often as eight or ten times every half minute. The place should be well dried, and before covering it up, a little camphorated olive oil should be applied to prevent the evaporation of the fluid.—*Journal de Médecine,* October, 1872.

Therapeutic Value of Carbolic Acid.

A long and well-written paper on carbolic acid, or carbol, as he prefers to term it, appears in the *American Journal of Medical Sciences*, by Dr. Bill, of the United States army, and the following are the conclusions at which he has arrived: 1. It is not proven that carbolic acid is a general disinfectant. 2. It is of the greatest use to disinfect wounds. 3. It accomplishes this (*a*) by destroying pus, &c.; (*b*) by preventing inflammation. 4. Its use in wounds moderates pain. 5. Its use on the skin relieves itching, and produces an anæsthesia sufficient for minor cutting operations. 6. It seems to be of use internally, in certain cases, in scaly skin diseases; and at least as a moderator of pain in cancer. 7. It has not proved of decided use in other diseases.

From his experiments with carbolized catgut passed through the comb of a cock, he finds—1. That carbolized catgut is more easily decomposed by contact with living structures than non-carbolized catgut. 2. The "living ligature" is merely the capsule which (at first thrown around the foreign body, possibly for its removal) has contracted into a firm cord.

Lastly, he states as the results of his researches upon the effects of the internal administration of carbolic acid in doses of from six to eight grains dissolved in a wineglassful of water, that there is: 1. A loss of sensibility in the mouth and throat, or a feeling of numbness, as when aconite is applied to the lips; this is followed by a cooling sensation like that of mint. 2. Slight nausea, especially if the stomach is empty. This is succeeded by an uneasy feeling in the abdomen, like that before an attack of gravel. 3. Slight vertigo, ringing in the ears, and partial deafness, judged by the ticking distance of a watch. This vertigo is so great if the carbolic acid be taken just after rising (and of course on an empty stomach) as to compel the resumption of the horizontal position. 4. Loss of heart-beat, the pulse from repeated observation on different individuals losing from four to eight beats in a minute, failing also in fulness. The temperature under the tongue undergoes no noteworthy alteration, 5. Diarrhœa. This is not invariable, and does not appear until several doses have been taken. If present, it usually disappears on the third or fourth day of the continued administration of the medicine. 6. After long-continued use of the medicine, feebleness of heart-beat, muscular debility, and loss of flesh occur. On omitting the medicine after it has been taken for several days, flatulence usually occurs, accompanied with a feeling of depression like that felt after the stimulating effects of morphia have ceased.—*London Practitioner.*

Treatment of Parotitis.

Dr. Record observes that writers generally treat of mumps as a very trivial disease, hardly worth consideration, and that no doubt where it does not attack other organs by metastasis, it is very trivial. In the cases, however, which have happened to fall under his care during a recent epidemic, metastasis occurred in at least seventy-five per cent. In fifty per cent. it was transmitted to the testicles; in the others it went to the stomach, brain, &c. He did not witness its metastasis to the mammæ. He tried the treatment usually recommended, and obtained but little success. He then changed his plan, and if his advice were sought early, directed the patient to go about his usual avocations as if nothing was wrong, and *not* confine himself to the house, or tie up his jaws, or use any embrocations, liniments, or medicines whatever, as heretofore ordered, but just to consider himself safer with his mumps uncovered and uncared for, than he would be while confined to a warm room, sweating himself with hot flannels, fomentations, or greasy compounds applied to his neck. In all cases where these directions were followed there was only simple parotitis, with no metastasis. In the later stages, when the treatment recommended in books has been already adopted, he proceeds to treat symptoms. If there is great pain in the head, a blister is indispensable. Where there is much fever he prescribes sedative diaphoretics, and uses fomentations to the scrotum. These, however, he regards as mere placebos, and places his chief reliance on turpentine. In every case, without a single exception, where this was administered, the disease was shortened, and his patients were happy and comfortable in from twelve to thirty-six hours.—*Cincinnati Lancet and Observer.*

A Certain Sign of Death.

Dr. Hugo Magnus, assistant physician in the hospital at Breslau, has arrived at the following conclusions in his interesting essay published in *Virchow's Archiv* for Aug. 1872. The signs of death generally given by authors, such as incipient putrefaction, occur too late to be of any practical value. But indications of death drawn from the circulation of the blood and from the respiratory movements are of the utmost value, since if these have entirely stopped it is impossible that life can be maintained. Dr. Magnus recommends that a ligature should be tied tightly round some member of the body—a finger is well adapted for the purpose—when, if the slightest trace of life remain, increased redness will be observed in the part beyond the ligature. The tint gradually becommes darker and deeper till ultimately it assumes a bluish red, and this tint is uniform from the tip to the point where the ligature is applied, except that in the immediate proximity of the ligature is a white line. This test appears to be a good one, and is founded on physiological facts.—*Aerzliches Literaturblatt*, No. 9, 1872.

Fibroid Tumors of the Uterus.

Alfred Meadows, M.D., London, England (*American Journal of Obstetrics*), in his "Remarks on the Diagnosis and Surgical Treatment of Fibroid Tumors of the Uterus," says that, having determined the situation of the tumor and its interstitial character, one is justified in attempting the removal of these tumors, even though they be not intra-uterine or submucous, but are situated in the substance of the uterus itself, provided a proper canal be inaugurated. His plan is, first of all, to prepare the passages for the expulsion of the growth; and, secondly, to detach the tumor from as much of its surroundings as possible; so that, by making of it a foreign body, nature may aid in its removal, as she would in the case of a dead fœtus or a mole-pregnancy, or even a uterine polypus. Lastly, when nature has been given fair play, the ecraseur should come to the rescue, and remove at once what might otherwise be the work of many months or years. He had recently under his care a case in which the tumor was completely imbedded in the substance of the uterus, so much so that the os was not dilated in the very least; and he had the satisfaction, after three or four operations, of completely removing the tumor, which was of the size of a small cocoa nut. The patient is now perfectly well.

At the date of writing he had two other cases of the same kind, but in both the tumor was much larger. He had commenced with the same plan of treatment in these cases, and he had every reason to believe that a cure would be effected.

The first step in the process is to prepare the passages for the removal of the tumor. For this purpose he recommends free division of the cervix uteri in one or more directions. The next step is breaking with the finger through the capsule, and little by little detaching the tumor from its bed. During the intervals efforts should be made, by the administration of ergot, borax, cinnamon, and other so-called oxytoxics, to secure contraction of the uterus, so as to favor nature's method of expulsion. Galvanism is also another agent of great power in this respect, and a firm bandage is of service in cases where the tumor is large and projects well into the abdominal cavity.—*Medical Record.*

Treatment of Whitlow.

Dr. J. B. Mattison (*Medical and Surgical Reporter*) writes:

"Early incision is the one above all other remedial measures, on the urgent necessity for which we desire to lay particular stress. But when and where are we to make it? Pus gives early indication of its presence by throbbing, pulsating pain. The moment, therefore, such an event declares itself, if not before, surgical assistance should be sought, and the affected part thoroughly incised. Thoroughly, we say, for no half-way measures are admissible under such circumstances. The knife must be handled boldly, and the pent-up pus allowed free exit, if we would effectually relieve suffering, save structure, and conduce to a speedy, favorable termination.

"We think that among the unprofessional there is a lack of correct information on this point which physicians could and should supply. Common enough—too much so, in fact—it is to see patients suffering for days the agonizing pain of a felon, and yet absolutely refusing to submit to the knife under the ridiculous plea that it is 'not ripe.' Now, this is altogether wrong—wrong, in a measure, on the part of the physician, in allowing his patients to entertain such an opinion, unless he has utterly failed in a determined effort to disabuse their minds of such an erroneous idea; and entirely wrong on the part of the patient. Practitioners ought, in each and every instance of whitlow which comes under their observation, to forcibly impress upon the mind of their patients the transcendant importance of this procedure, and instruct them carefully upon the earliest indication for its employment. It is only by such action on the part of physicians that this wide-spread error can be corrected, and an immense amount of suffering, which would otherwise necessarily ensue, be averted.

"But where is the incision to be made? Huetter answers this question. According to Dr. Proegler, he takes a fine probe and touches the central part of the panaritial swelling, asks the patient where he feels by this first palpation the most intense pain, and makes there the incision. This point covers in the beginning of the panaritum not more than a quarter of a line, but if taken for the incision no one will be misled.

"Huetter asserts, by following this plan, he never made a useless incision. This is a most important statement, and if his success extends to the same operation in the hands of other surgeons, it becomer an infallible guide, and one of which we can by no means refuse to avail ourselves."—*Southern Med. Record.*

Apparent Death.

Dr. W. H. Lathrop, Professor of Diseases of the Brain and Mind in Detroit Medical College (*Detroit Review of Medicine and Pharmacy*), in his paper on "Apparent Death," reports one of the most remarkable and best authenticated cases of trance on record, that of William (afterwards Rev. Dr.) Tennent. While studying theology at Princeton, New Jersey, he had a fit of catalepsy, being in a very weak state from close application to books, without proper attention to physical exercise. After a short illness he was regarded as dead, and the day was fixed for the funeral. His physician, however, believed him to be alive, and succeeded in having the funeral postponed from day to day for three days. The brother of Mr. Tennent then insisted that it was folly to suppose that he could be alive, and ordered that at a certain hour the burial service should occur. When the appointed time arrived, and the company were assembled, the doctor stood over his patient and asked for still another hour. At the At the end of that time the patient suddenly uttered a groan, and soon after gave other signs of life. His recovery was slow, and at first was attended with a loss of memory. He commenced anew the study of Latin with as much difficulty as if he had had no previous acquaintace with the language. After a considerable time his memory suddenly returned. This case is fully authenticated. The witnesses were educated persons, and all the particulars have been carefully described. Such cases, therefore, are possible, though extremely rare.

In conclusion, Dr. Lathrop observes: 1. That trance is extremely rare. 2. That apparent life in those really dead is much more common. 3. That in doubtful cases we should wait for the appearance of decomposition before allowing the burial to take place.—*Medical News and Library.*

Reid's Cholera Syrup.

℞. Chloroform, ℥j; gum camphor, ℥iij; tinct. opium, Oj; best French brandy, Oij; tinct. cloves, ℥viij; simple syrup, cong. ss. "As soon as bowel complaint makes its appearance, take a teaspoonful of the syrup and go to bed; repeat the dose every time the bowels are moved, increasing it if the first proves inefficient. Children should be dosed in proportion to age."—*Southern Medical Record.*

Induction of Premature Labor.

Dr. Clement Godson (*London Lancet*) gives the following method: "The means I advocate operates by surely and safely coaxing the uterus into an action which only differs from natural labor in being artificially initiated, and which is maintained and completed under all the conditions of labor spontaneously occurring at a corresponding stage of pregnancy. Each of the methods in general use is, according to my experience, more or less formidable, in virtue of the amount and the kind of the manipulation which it involves. Most of them are practiced in such a manner as to force on too hurriedly the uterine contractions; and that which consists in the evacuation of the liquor amnii stands self-condemned, as depriving the womb at the very outset of the all-important dilator provided by nature. My mode of procedure consists in insinuating, night and morning, between the cervix uteri and the membranes, sponge tents of gradually increasing size, the first and each succeeding one being as large as the parts will admit. On removing each tent, and before replacing it by another, a warm douche, containing Condy's fluid, is administered. I have found the use of one, two and three tents to be sufficient, and have never had occasion to employ more than four."—*Southern Medical Record.*

Impotency.

Professor D. Hayes Agnew, of Philadelphia (*Medical and Surgical Reporter*), in a clinical lecture on impotency, after stating that the treatment must be largely moral, and urging the abandonment of onanism or excessive venery, says that there is no better internal treatment than phosphorus and strychnia—1-50 grain of the former, and 1-30 of the latter—made into a pill, and administered three times daily.—*Clinic.*

On Seatangle Tent. By J. Braxton Hicks, M.D., F.R.S, F.R.C.P.

Of all the materials used for dilating the cervix uteri there are none so cleanly, efficient, and convenient as those made from the *Laminaria digitata.* Although now largely employed by many, they are not so well known as they deserve to be; and therefore allusion to the subject may not be altogether useless, nor some practical hints unacceptable to some readers.

This material can be made into tents of various forms and sizes, but as the dried stem of the alga usually employed does not exceed half an inch diameter, [As other larger varieties of algæ will hereafter probably be found equally useful with the *Laminaria digitata,* it is desirable that investigations be made in this direction.] tents required of a larger size must be made by fastening together a sufficient number. They may be grouped in three, five, seven, &c. But perhaps it will be found most convenient for the very large size to combine groups of three in one large bundle; they may be tied together by twine at the base, but at their apex it will be best to employ a small elastic band. These can be obtained ready made up.

Some are made in two halves pegged together. Some are made tubular to permit of the introduction of a stillet, which, passing two inches beyond the end of a catheter, forms an easy contrivance for reaching the os without the speculum, and also to permit the secretions to flow through it. The smallest sort, from 1 12 to 1-8 inch in diameter, are used for dilating the rigid or contracted os and cervix, either alone, or preparatory to the use of the hysterotome. The tubular form cannot be made below a certain size, as it is found impossible to drill a hole through them if too attenuated.

I have found that they distend to about three times their original diameter, and that in an ordinary state of the secretions they reach their full distention in about fifteen hours; of course some variation will be found in this respect, especially between the different sizes, for the larger they are, the longer the time occupied for them to become wet in their interior, and therefore, generally speaking, the large bundles produce their effect quicker than if made of one piece of an equal diameter to the combined. These two points are important to bear in mind, because where we have to dilate the cervix to a considerable size, and we require to follow in succession, it is best to introduce the next sized tent as soon as the previous one has attained its full dilatation. To leave it in beyond that time not only delays the operation uselessly, but adds much to the chances of uterine irritation. We must therefore have at hand a series of three for general purposes. For instance, when we wish to dilate the cervix in order to pass the finger in easily into the cavity, supposing we begin with one of $\frac{1}{8}$ inch diameter; the next size should be nearly $\frac{3}{8}$ inch, and the last (if another be required) should be nearly 1 inch diameter: as this would expand to nearly three inches at its fullest, it would not be requisite to allow it to remain in—unless in a case of pregnancy or imperfect miscarriage, where we want the fullest expansion—so long as to its complete expansion, say for ten hours. Where slight dilatation only is required, then one is sufficient, and it should be removed in twenty or twenty-four hours at the longest. For dilating further, we may group the smaller bundles in any numbers we like, but it will seldom be required to go beyond an inch diameter for the last one. If we wish the tents to be more rapid, then it is best to soak them in cold water a short time before introduction.

The purposes for which they can be applied for obstetric purposes are numerous. They can be employed to dilate the smallest os and cervix uteri, either alone or in preparation for the hysterotome; they can for this purpose be made as small as required. In the case of a traumatic closure of the os uteri, I have employed it with complete relief. In closures of the vagina from injury, also where the opening is reduced to a pin-hole, they may be employed to dilate up the stricture, preparatory to some more radical operation, or in some cases they may be employed entirely. The effect of the latter plan, however well it may succeed at the first, is liable to pass off, and the contraction to resume its sway. I have found that the bistoury lightly drawn over the contraction, in numerous places, attended by much more satisfactory results ultimately. After operation for opening either vagina or os uteri, these tents may be employed from time to time to prevent the closure recurring. They may be employed to dilate the cervix to a size sufficient to permit us to explore the interior of cervix or the body of the uterus, in cases where polypus is suspected, or where the remnants of an imperfect abortion is supposed to exist. For the same purpose they are of great value to permit us to diagnosticate between polypus and fibroid tumor of the uterus, where the hemorrhage is so great as to require interference.

In cases of flexion of uterus they will assist to straighten out the canal of the cervix, and for a time relieve the patient of the dysmenorrhœa which frequently accompanies it.

Again, in cases of dysmenorrhœa and sterility in married women from contraction of cervix, they can be with great advantage used, because it is clear if the sterility be owing to the occlusion of the cervix, then its expansion should be attended by immediate relief; otherwise we may conclude that other causes exist which give rise to these states, and if after this dilatation the patient conceive, then a permanent cure results. In the single woman, however, the effects are less permanent, and in cases of severe obstruction will be frequently the only means of giving anything like permanent relief.

In some cases, as in malignant disease of cervix where the resistance is considerable, I have employed this substance to dilate, in order to deliver prematurely. These cases, however, are rare where much resistance exists, and in general it will be better to employ a softer material, as sponge tent, or elastic dilating bag, because they are less likely to scratch and abrade by their extremities than the more rigid seatangle tents.

They can be introduced into the cervix uteri in various ways.

First, they may introduced by a long pair of forceps. The patient being placed on her left side, the fore-finger of the left hand, or still better, two fingers if possible; are to be passed to the os uteri. The tent, held by the forceps, is carried along the finger to the os, into which it is introduced. The handle of the forceps should be then brought well against the perinæum, so as to throw the tent into the axis of the uterus (in case of normal position) and very gently pressed forward; after it has passed in nearly its whole length, the forceps should be detached, and the fore-finger presses gently against the end of the tent to keep it *in situ.* In order to retain it there, it is well to pass a plug of sponge with a tape tied round it so as nearly to fill the vagina. It is well to see the urethra is not pressed on, or retention of urine might ensue, causing trouble and alarm. In multiparæ there is no trouble in employing this plan, but in some, particularly in virgins, there is much difficulty in introducing the tent in consequence of the rigidity and drawing up of the perinæum. Besides, unless the serrations of the forceps are carefully rounded off at the edges, the vulva and vagina may be scratched, not only causing pain, but adding to the difficulty of introduction in consequence of the movements of the patient.

Another, and in my experience a better plan, in cases where the extremely small tents are not required, is to employ an elastic catheter with a stillet. A portion of the end of the catheter not quite so long as the tent should be cut off. This will leave the stillet protruding, On this the tubular tent should be passed, care being taken to see the stillet does not extend beyond the end of the tent. The string which is attached to the lower end of the tent being carried down by the side of the cathether, is held by the same hand. The arrangement is then introduced as an ordinary uterine sound: and when the tent is properly within the cervix, the stillet is withdrawn, thereby leaving the tent in the cervix. The finger which is in the vagina should be placed on the lower end of the tent to prevent it sliding out and the sponge introduced as usual. A very convenient little instrument based on this principle has been made by Messrs. Weiss.

There is another mode which will be convenient in some cases, namely, to pass a speculum. Having introduced the tent into the cervix as far as possible by a forceps, the speculum can be withdrawn carefully. A finger is then passed up to the tent, and gentle pressure being made the tent slides in. This plan is good in cases where retro- or ante-flexion exists, but then of course it will be necessary when pressing the tent in with the finger to vary its direction, either forward or backward according to the axis of the body of uterus. In these cases the tent is ultimately placed in the transverse diameter of the vagina. In the cases where the inner cervix will not permit the tent to pass, I have managed to do so slowly, by lodging the lower end against the fold in the posterior wall of the vagina, and then plugging that canal as usual. The little irritation produced by this has caused the levator ani to act, so that a gentle pressure is exerted for some time against the inner os, which has ultimately yielded. For the larger groups of tents, it will be found that the forceps will introduce them most readily; for in most of the cases where we wish to use the large tents the vagina is so well relaxed, difficulty is rare.

It is very important in order to effective dilatation that the tent should pass the inner os, in all cases where the cavity of the uterus is to be explored. Tents of all kinds may fail in this particular, for two reasons: one because they may not have been introduced so far; and another, because they slip out. This is particularly the case with the seatangle tents, but as they can be made smaller than any other kinds there is no reason why, if one will not pass, a smaller should not be tried. But it must be also remembered that the cause of inability to pass a tent may be from a flexion of the organ; this point, of course, should be first made out before we commence to pass the tent.

One means of preventing these tents from slipping out, at least after they begin to swell, is a plan adopted by some makers of tying the string round the lower end, so that it cannot expand so much as the upper: and this reminds me of a fault in many, namely, the shortness of the string attached to the lower end, and the imperfect security of the knot: so that it is difficult on the former account to withdraw it, and on the latter the cause of much trouble and sometimes pain when we wish to remove it,

Before the introduction of these, as of course with all tents, it is important that the bowels be well open the day previous, and the bladder evacuated immediately before. Otherwise the disturbance caused by the action of the bowels is sufficient to cause expansion of the tent; with regard to the urine, its passage will of necessity be requisite twice at least during the twenty-four hours the tent is dilating; but as it is advisable that the patient should not rise up, she should be directed to pass urine without rising; or still better, if the catheter can be employed, that it should be used.

Upon your visit at the end of twenty or twenty-four hours, the sponge plug is to be removed first, and then the tent, and the vagina syringed with warm water, to which a little of Condy's solution should be added. By this means any absorption of the unpleasant discharge (which is almost always present) through any abrasion is prevented. This is especially useful where a series of tents have to be introduced. It is not a bad plan to soak the sponge plugs in a lotion of permanganate of potass before introduction. Some sponge tents are made enclosing antiseptics, so that when they expand by the melting of the wax this material is set free. The same plan might be adopted in the tubular seaweed tents, but the quantity set free would not be so much. But the tent itself, independent of the plug, does not produce much unpleasant odor, while the sponge tents do so.

After the process of dilating the cervix by the tent, I consider it important, indeed I may say imperative, that the patient should keep quiet. In hospital practice I always enjoin a week's rest, and this plan I adopt in private, unless a couch can be substituted after a few days for the bed. The vagina is washed gently out with warm water twice a day, to prevent accumulation of the discharges, and irritation resulting from them.

Too much care cannot be taken after the employment of the tent, especially if done rapidly and to a considerable extent. The irritation in and around the uterus does not subside for some days: I should say a week or more, and if excitement of any sort arises, especially by exercise, this is apt to increase and become a matter of serious import. I have seen a case end fatally where there had been dilatation a week previous; mental shock suddenly lighting up the inflammation and extending it to the peritoneum. I would therefore treat dilatation of the uterus as an operation of much more importance than it is by some practitioners, who, having introduced the tent at their own house, have sent the patients home, with directions to remove it in so many hours. In one such case the string broke away and the patient could not remove the tent. Severe cellulitis and metritis followed, which laid her up for many months.

But with the care above enjoined, this unpleasant result is obviated to a great extent. Probably in the slight dilatation produced by the use of the tent for a few hours, the risk in this respect is perhaps considerably less, and perhaps it is less when softer materials are used than the seatangle tent; but where free expansion of the cervix has been produced, the risk of subsequent trouble is readily seen if care be not taken, and this risk is much increased proportionately to the time occupied in tenting. I would say that the patient should never, if at all avoidable, be under the continuous action of these tents for more than two and a half days, at outside three. For this reason the tents should follow one another as quickly as consistent with efficiency.

During the presence of the tent in the cervix, it is not unfrequently found that the uterus becomes irritable, and expulsive pains occur. To prevent this, as well as the consequent extrusion of the tent, it is well to give an opiate, especially should the pains appear. This will also lull the bladder and rectum, and thereby prevent their influence extending to the uterus.

In conclusion, I may point out the special advantages of tents made of seaweed.

1st. They can be made of any size, particularly much smaller than sponge tents.

2d. They have more distending power. The rigidity of the inner os uteri is sometimes so great that even these tents are distinctly marked by it; but the sponge tents not at all unfrequently are unequal to produce any marked impression on the constriction.

3d. They do not retain the secretions so as to produce so much offensiveness, consequently there is less risk of irritation locally or generally.

4th. By their greater rigidity they can be more readily applied, especially in a tortuous canal.

They have, however, some disadvantages:

Their rigidity makes them not so suitable in cases where the uterus is readily bleeding, or very tender; nor in cases where the os is somewhat dilated by a polypus or growth distending it.

Here a sponge tent is best, unless the os and cervix are very rigid.

Their great distensive force makes them less acceptable where the uterus is very irritable.

They should be in all cases so made that no sharp edge be noticeable. In the tubular tents this is a point liable to be overlooked.

And for the dilatation of the os uteri in a natural state for purposes of induction of premature labor, these tents are not by any means so suitable as the sponge tents, or as the india-rubber bags.

With these exceptions, in cleanliness, certainty of action, ease of introduction, and minuteness, they are certainly not equalled by any other material at present in use.

Means of Correcting the Bitter Taste of Medicine.

Concentrated saccharine solutions modify the taste of most bitter medicines, rendering them more acceptable to the palate. The infusion of gentian is extremely disagreeable, while the syrup may be readily taken, provided no water is added to enfeeble the action of the sugar. The substance, however, which possesses this curious property in the highest degree, is glycyrrhizine, the sweet principle of the liquorice-root. If, after taking quinine, colocynth, aloes, quassia, or other bitter medicines, a piece of liquorice-root be chewed in the mouth, the bitter taste will quickly disappear. No chemical change takes place, but the effect seems to result from an incompatibility of taste An analogous action takes place between bitter-almonds and musk, between anise and valerian. If, for instance, we attempt to clean a mortar impregnated with musk, by adding the essence of bitter-almonds, the odor of the musk promptly disappears, but returns in its primitive force as soon as the former has evaporated. The essence of bitter almonds, therefore, masks for the moment the odor of musk without destroying it, and the same result may be said to follow when glycyrrhizine acts on bitter substances. Owing to the insolubility of quinine in alkaline fluids, the saliva would remove it from the mucous membrane very slowly, and glycyrrhizine, to be effectual in destroying its bitter taste, should be kept in contact with the gustatory organs as long as any particles of the quinine remain there.—*Le France Médicale*, March 12, 1873.—*London Practitioner.*

The Pestiferous Fly.

Professor Leidy, in the course of some remarks made before the Academy of Sciences of Philadelphia, which are reported in a late number of its "Proceedings," substantially supports some statements which we made in the summer of last year in a short annotation entitled "The Fly in its Sanitary Aspects." *Appropos* of small-pox, which was at that time prevalent in Philadelphia, the professor remarked that flies were probably a means of communicating contagious diseases to a greater degree than was generally suspected. From what he had observed during the late rebellion, in military hospitals, where there was much gangrene, he was led to the conclusion that flies should be carefully excluded from wounds. More recently he had noticed some flies greedily sipping the juice of certain fungi belonging to the well-known *Phallus impudicus.* Having caught several, he found that, on holding them by the wings, they would exude from the proboscis two or three drops of a liquid which was found, when subjected to microscopic examination, to swarm with fungoid spores. The stomach was also found to be filled with the same liquid, which likewise swarmed with spores. Whether or no the fungus in question, which, as botanists well know, is as offensive to the smell as it is to the sight of any but a phallic worshiper, be poisonous, all that one need do is to substitute in imagination for the juice of such plant the secretion of an unhealthy wound.—*London Lancet.*

Hysterotomy versus Dilatation.

It is not many years since the introduction of the hysterotome, or some cutting equivalent, for the treatment of mechanical dysmenorrhœa and other uterine disturbances. And never was operation so popular. Every woman who could get up a uterine sensation—and very few were unable to do so—was content only when her womb was under daily training with glittering instruments of cunning form. Fashionable ladies divided their time between the the milliner and the gynæcologist, and this latter gentleman, when he had forced his way through the entrance of the matrix, *vi et armis*, felt that he had done his country as much service as a United States soldier who should scalp a Modoc. Then came rumors of hemorrhage, and of cellulitis, and peritoneal inflammation. Then came doubts and misgivings, and a disposition to back down from the knife to the old method of dilatation—Simpson, we believe, leading the way, and confessing that he had shed needless blood. So the hysterotome was threatened with ignominious discharge, like the lancet.

Now comes Dr. Percy Boulton, and reads to the Harveian Society of London (*Obstetrical Journal* for April) an elaborate paper in defence of cutting as against dilatation. He adduces 900 cases operated on by Sims, Emmet, Greenhalgh, Tanner, and himself, with only one death, and that in a patient who had tubercular peritonitis previous to the operation. The danger is from hemorrhage and cellulitis. In 100 cases operated on by

Dr. Tanner and himself, hemorrhage occurred but once, and was easily arrested, a good recovery following; cellulitis never occurred. In 500 operations by him and Emmet, cellulitis occurred but once. In 300 cases by Greenhalgh, one had profuse hemorrhage, which was relieved by plugging; five had cellulitis, and one fatal peritonitis, as already referred to. Inflammation, says Dr. Boulton, is no more likely to follow cutting than dilatation. On the contrary, the parts being in many instances congested, irritated, or inflamed, incision is the appropriate remedy, and gives relief where dilatation would increase the difficulty and danger. Besides, simple dilatation often fails of a permanent cure, just as the extreme dilatation of childbirth is followed by a return of stricture. Dr. Boulton related six cases in which he had cured both dysmenorrhœa and sterility by hysterotomy, after the failure of the other method. In conclusion, he stated that he did not consider the process as a universal panacea for every ailment of woman, and should not run into the extremes that Dr. Henry Bennett had lately indicated as possible, he was nevertheless of opinion that in proper cases of mechanical dysmenorrhœa, hysterotomy was the most satisfactory mode of cure.—*Pacific Medical and Surgical Journal.*

Hydrate of Chloral in Puerperal Convulsions, by Alexander Milne, M. D.

A woman in labor with her fourth child, and progressing towards conclusion, was frightened by the noise of a falling body, and went into a convulsion. The child was born, and uterine action finally terminated, but still the fits continued at short intervals. Sixty grains of the remedy were given, and no cessation of eclampsia took place until about fifty minutes were passed, when the patient fell into a heavy sleep which lasted eight hours. She awakened confused, but free from headache or sickness, and made a good recovery.

Sir James Y. Simpson believed that this was the first case of puerperal convulsions in which hydrate of chloral had been employed.—*Am. Journ. Med. Sciences.*

On some of the Dangers attending the use of Tangle Tents. By Lauchlin Aitken, M.D.

The *Laminaria digitata* was recommended first, in 1862, by Dr. Sloan, of Ayr, and was brought extensively into use by the late Professor Simpson. Dr. Aitken says of it, in regard to its employment in contracted and strictured cervices: "We are frequently compelled, in such a case, to accept the tangle tent as an unavoidable necessity." He specially refers to the fact that many authors, such as Grily Hewitt, Churchill, Courty, of Montpelier, and Scanzoni, make little or no reference to the dangers to be met with; whilst others, as Gaillard Thomas, of New York, speak particularly of them, the last reporting a fatal case of tetanus following the employment of two tents, and other severe complications which had come under his notice:

"I may point out that what has seemed to me the most common of all the evil consequences arising from the use of the tents, has been the development of inflammatory action in the pelvic serous membrane or cellular tissue; next the production of endometritus; and finally, the causation of a number of what may be looked upon as accidental complications, such as hemorrhage from the uterus, pelvic hæmatocele, laceration of the cervical wall, spasmodic contractions of uterine muscular tissue, hysterical convulsions, and other minor mishaps. * * * I have never known a fatal case in which I could directly attribute the death to the use of the tent, although I have certainly seen patients succumb to the effects of uterine operations for the performance of which the cervical cavity had necessarily been enlarged." (p. 188.)

To avoid the dangers mentioned, Dr. Aitken lays down the following very important rules, which he says have reduced the results, in his hands, to the production of slight and transient forms of cervical catarrh. (See No. of this Journal for October, 1870, p. 559.)

In the introduction of tents, Dr. Aitken dilates the vagina with a Sims speculum, preferring this instrument, because it enables him to draw forward the anterior lip of the os with a tenaculum when required, and to make use of other appliances, such as probes, etc., which may be found necessary.—*American Journal of Medical Sciences.*

Influence of Belladonna on Secretion.

Keuchel (*Das Atropin und die Hemmungsnerven.* Inaug. Diss. Dorpat, 1863) found that the dryness of the fauces, which followed the use of belladonna or atropia, is due to paralysis of the chorda tympani, which is the nerve regulating the secreting function of the submaxillary gland. This nerve contains two sets of fibres, one of which, as Ludwig has shown, acts on the gland-cells, and causes them to secrete; while the other set, according to Bernard, induces dilatation of the arteries of the gland, and thus supplies more abundant material for secretion to the cells of the gland. Keuchel did not determine whether atropia arrested secretion by paralyzing the true secreting fibres in the chorda, or by destroying the power of the vaso-inhibitory fibres, and thus preventing a sufficient quantity of blood to supply the increased secretion from being furnished to the gland. Heidenheim (*Pflüger's Archiv*, v. 40) has investigated this question, and finds that, when the chorda tympani is irritated after the injection of atropia, no saliva is secreted by the submaxillary gland, but its vessels become dilated as usual. This shows that the arrest of secretion is entirely due to paralysis of the true secreting fibres in the chorda tympani, and not of the vaso-inhibitory ones. The experiment also affords a convincing proof of the separate existence of these two sets of fibres. Irritation of the sympathetic caused secretion after the injection of atropia, and the termination of the sympathetic filaments in the gland must therefore have a different relation to the secreting cells from those of the chorda tympani. When the paralysis of the chorda tympani which atropia produces is removed by physostigma, irritation of this nerve will again cause secretion. Sometimes, however, the secretion again stops, but this is due to quite a different cause from its arrest by atropia. The physostigma, as has already been said, restores the power of the secreting fibres, but it at the same time causes such contraction of the vessels that they do not dilate when the chorda tympani is irritated; and the supply of blood to the secreting cells is therefore too scanty to supply them with sufficient material for secretion. Physostigma also stimulates the roots of the chorda tympani in the brain and causes salivation, which ceases when the chorda tympani is divided. Nicotia and digitalin also stimulate secretion in the same way as physostigma, but large doses of nicotia paralyze the chorda. Dr. Sidney Ringer (*Practitioner*, August and October, 1872) finds that belladonna or atropia can prevent or check sweating, whether this be due to external warmth or disease. When it is the result of disease, the subcutaneous injection of 1-200th of a grain of atropia is generally sufficient to arrest it for one night. The dose does not dilate the pupils, but it produces dryness of the fauces. Stramonium has a similar effect.

Ringer also mentions (*Handbook of Therapeutics*, 2d ed., p. 361) that belladonna arrests the secretion of the mammary glands. It would thus appear probable that there may be special secreting nerves of the sudoriferous and mammary glands, of a similar kind to those contained in the chorda tympani, although the existence of such nerves has not yet been demonstrated. The fact that the secretion of these glands is arrested by the local application of belladonna, seems to indicate that the arrest is due to paralysis of the ends of the nerves in the gland, just as in the case of the chorda tympani.—*London Med. Record*, Jan. 15, 1873.

The Combined Effects of Opium Alkaloids and Chloroform.

The statement of Claude Bernard and Nussbaum (see No. of this Journal for January, 1870, p. 240), that by administering morphia and chloroform in combination, very complete anæsthesia may be obtained with a quantity of chloroform greatly less than is required when chloroform is alone given, has received confirmation and extension from the observations of MM. Labbé and Guyon and Dr. Rabuteau. The former observers mention (*Journal de Pharmacie et de Chimie*, Mai, 1872, p. 308) that among their other results they found that this combination produces an anæsthesia of long duration, which may be prolonged still further by successive small doses ot chloroform. They believe, therefore, that by this combination the risk of fatal accidents is greatly diminished. Dr. Rabuteau, towards the termination of his paper on the opium active principles (*Journ. de l'Anat et Phys.*, No. 3, 1872, p. 302), expresses his adherence to the statements of previous observers, and adds that nearly all the opium alkaloids, even those which are not soporifics, are able to continue the analgesic action of chloroform, because nearly all of them possess the power of lessening sensibility. Narcotine, however, is not able to do so; but he has found that narceia is nearly as efficient as morphia, while codeia and papaverin only feebly continue the action of chloroform.—*Journ. Anat. and Phys.*, November, 1872.

Phosphorus in Neuralgia.

Dr. S. M. Bradley, of Manchester, states (*Lancet*, November 9, 1872) that he has frequently employed a solution of the phosphorus in ether, and found it of signal service for the cure of neuralgia. The dose is five drops, which contains about one-twentieth of a grain of phosphorus, ether dissolving about one per cent. of phosphorus. This not only relieves the pain but lessens the attacks. Dr. B. has found it most serviceable in subjects who add to a highly nervous temperament some cause of nervous waste.—*Amer. Journ. Med. Sciences.*

On the Artificial Dilatation of the Anus and Rectum, for Exploration and Operation.

Dr. G. Simon has shown that it is possible to introduce the whole hand even into the male rectum, and to explore and perform operations without inflicting any injury on the walls of the bowel. The dilatation may be effected with or without incision of the sphincters. In the adult, under chloroform, by gradual dilatation, the fingers, half the hand, and then the entire hand and forearm may be introduced if there be no obstruction in the pelvis. In most cases, if the hand does not exceed 9½ inches in circumference, there will not be occasioned more than a slight tearing of the anus, and only very exceptionally a rupture of some of the fibres of the sphincter. When the hand has penetrated the rectum as far as the sacral promontory, three or even four fingers may be carried on up the sigmoid flexure, and then, through the walls of the gut, the whole abdominal region as far as the kidney and umbilicus can be examined without danger. Thus a more precise diagnosis may be made of affections of the uterus, ovaries, and even the stomach and spleen. With the introduction of only half the hand, the base of the uterus and even the ovaries can be reached; in men the bladder can be felt with precision, and the presence of calculi, their number and size, can be ascertained.

In two cases of ovarian cyst, Dr. Simon was able to determine, by this method of examination, the length and thickness of the pedicle, the absence of adhesions in the pelvic cavity, and lastly, the presence in the fundus of the uterus of two fibrous growths, each as large as a cherry-stone. The operation allowed the verification of this diagnosis. Dr. Simon thinks that full dilatation by the whole hand should be employed in many affections of the rectum; it permits the ready removal of foreign bodies, and in ulceration of the rectum it favors cure by allowing a free discharge of all matters; in fistula it permits the introduction of a speculum analogous to that of Marion Sims, so that internal openings can be seen, and operations upon fistulæ, situated high up the bowel, can be performed with certainty.—*London Medical Record*, Feb. 12, 1873, from *Archiv für Klinische Chirurgie,* vol. xv., part 1, 1872.

Ovariotomy followed by Twin Pregnancy.

Dr. Ollier, of Orleans, relates a remarkable case of a woman who had been four times pregnant, who had been three times tapped for ovarian dropsy, and afterwards subjected to ovariotomy; the tumor had no adhesions. Three months after the operation this woman became pregnant, and at full term was delivered of fine twins.—*Gaz. Hebdom.*, 21 Feb., 1873, from *Revue Méd. Française et Etrangère*, 28 Dec., 1872.

Treatment of Poisoning by Hydrate of Chloral.

Dr. Erlenmeyer, Jr., remarks that the quantity of hydrate of chloral required to produce poisonous symptoms is undetermined. The smallest quantity known to have produced poisoning is two and a half scruples; while, on the other hand, as much as 460 grains has been taken without danger. The symptoms of poisoning by chloral are, diminished frequency of respiration, redness of the conjunctivæ, contraction of the pupils, lividity of the lips, and falling of the lower jaw: the state of the pulse has varied very much in several cases. The most important indication is the removal, as quickly as possible, of the chloral remaining in the stomach, or its dilution by water containing tea, coffee, or rum. The second indication is to restore the respiration. Not much benefit is to be expected from the use of strychnia, physostigma, morphia, camphorated ether, or ammonia, which are supposed to act as antidotes to chloral. Transfusion of blood may perhaps be found useful, as it has already been in poisoning by chloroform.—*Brit. Med. Journ.*, Nov. 9, 1872; from *Med. Chir. Rundschau*, October, 1872.

The Treatment of Whooping Cough by Quinia.

Prof. Binz, in a paper on "The Use of Quinia in the Diseases of Children," published in the No. of the *American Journal of Obstetrics* for May, 1870, advocated the use of quinia in pertussis, and stated that in his hands it had accomplished valuable results. Prof. B. laid down the following rules for its administration: "It should be given in solution; the dose should not be too small, and should not be administered in a vehicle that will prevent it coming in contact with the mucous membrane, in its passage through the pharynx;" and the neglect of one or all of these rules he considers the reason why other observers have seen no positive results from the use of this drug.

Letzerich, of Germany, advanced in 1871 the fungus theory of pertussis, and asserted that he had discovered in the expectorated mucus a form of fungoid growth which vegetates in the epithelium of the air-passages, and by its irritation causes the convulsive attacks of coughing. This theory seems to have additional strength given to it by the effect on the cough of therapeutic measures directed against the development of the fungus.

The statements of the efficacy of quinia in whooping-cough, made by Binz, have been indorsed by Breidenbach and Steffin (see *Am. Journ. of Med. Science* for Jan., 1871, p. 268, and Oct., 1871, p. 544), and Dr. B. F. Dawson, of New York, reports (*American Journal of Obstetrics*, Feb., 1873) eighteen cases in which this remedy was used with very satisfactory results in curing the "whooping" chiefly; the cough, in many of the cases, lasting for some time after the whooping ceased, and which required the usual treatment for bronchial catarrh. He gives the following rules for the administration of the drug:

1. Give the quinia (sulphate or hydrochlorate) dissolved by acid in pure water only. For children under 3 years, from gr. v to gr. viij, and for older children and adults, from gr. x to xij to the ounce.

2. Give not less than a teaspoonful *every single* or, at the longest, every two hours during the day, and whenever cough comes on in the night.

3. Give nothing afterward, for some minutes, to destroy the taste or to wash out the mouth.

4. Continue giving it, notwithstanding the first doses may be vomited.

5. Be sure that the quinia is pure and thoroughly dissolved.—*American Journal of Medical Sciences.*

Enucleation of Uterine Fibroids.

Dr. T. Gaillard Thomas exhibited to the New York Obstetrical Society (Oct. 3, 1872) a mass the size of a cocoanut, consisting of three fibroids which he had recently removed by enucleation. The woman, who was a patient of Dr. H. Moeller, had suffered for some months from excessive menorrhagia. When seen by Dr. Thomas, the uterus was found to be as large as at the fifth month of gestation; the cervix was found well dilated, and a large fibroid presenting, which, on examination, proved to be sessile, and attached posteriorly. The patient lying upon her back upon a table, Dr. Thomas proceeded to enucleate by cutting through the capsule of the tumor with scissors, and then insinuating a grooved steel sound under the capsule, which he separated as far as possible from its attachments. Traction was then resorted to, combined with powerful expression from above, which resulted in the extrusion of a large mass in about forty minutes: another mass was felt above the one extracted, which was in like manner removed; traction then being made upon the capsule, it came away, having attached to it a still smaller tumor. There was very little hemorrhage. Opiates were given, and intra-uterine injections of carbolic acid were daily used. The patient did well for four weeks, though she now has a mild attack of phlegmasia dolens, from which she has suffered once before as a sequel to parturition. This is the sixth case in which Dr. Thomas has resorted to enucleation, in all of which the recovery has been perfect. He has, however, lost two cases in the preparatory treatment by sponge-tents. Dr. Thomas considers the operation in its results more formidable than ovariotomy.—*Am. Journ. Obstetrics*, Nov., 1872.

Trial of Mrs. E. G. Wharton.

We have been favored with some early sheets of a new edition of Dr. Alfred Taylor's work on Medical Jurisprudence, which is now in the course of republication here, and extract from it the following remarks, which have a bearing on the trial which has excited so much attention in this country:

"Criminal trials for poisoning with tartar emetic in the *acute* form are rare. It is a poison which cannot easily be given in a large dose without producing speedily well-marked effects; and as vomiting is a common symptom, the poison is thus early ejected from the stomach. An extraordinary trial for murder by alleged poisoning with this substance took place at Annapolis, U. S., in December, 1871. Mrs. E. Wharton was charged with poisoning her friend, General Ketchum. The trial lasted fifty-two days, and an astonishing amount of scientific evidence was brought forward for the prosecution and defence, apparently owing to the high social position of the parties; for there is nothing, medically speaking, in the case itself that might not have been settled in forty-eight hours. The General died after a short illness, but the symptoms, taken as a whole, bore no resemblance to those observed in poisoning with antimony, and but for the alleged discovery of twenty grains of tartar emetic in the stomach after death, no suspicion of poisoning would have probably arisen. (See Guy's Hospital Report for October, 1857, in which thirty-seven cases of poisoning with antimony are recorded.) The appearances in the body proved nothing for or against antimonial poisoning, and some physicians of experience deposed that symptoms and appearances were consistent with disease affecting the membranes of the brain and spinal marrow.

"On examining the chemical evidence, it appears that the process by sulphuretted hydrogen alone was employed, and a red-brown sulphide, resembling that of antimony in chemical properties, was obtained; but the quantity obtained as sulphide was only four-tenths of a grain, estimated as equivalent to *eight-tenths of a grain* of tartar emetic. Thus the chemical analysis brought out only a fraction of a grain, not amounting to one-twentieth part of the quantity said to be present; and no separation of antimony in the metallic state was made to corroborate the inference drawn from the precipitate produced by sulphuretted hydrogen. No chemical results were produced in court, although twenty grains would have allowed of the production of metallic antimony in a few minutes by copper, tin, zinc, and platinum, or by Marsh's process. The evidence that antimony was really there was not satisfactory, and that twenty grains were present in the stomach was wholly unproved. The chemical evidence does not, therefore, conflict with the pathological evidence, for it failed to show with clearness and distinctness the presence and proportion of poison said to have been found. The jury upon such weak evidence properly acquitted the prisoner."

Again, Dr. Taylor says:

"Antimony *in the metallic state* is so easily procured from a small quantity of material, by one or other of the above mentioned processes, that on no account should this be omitted. The procuring of the metal may be made subsidiary to the procuring of the sulphide, as the metal can be easily oxidized and converted into the sulphide in a pure form, and obtained entirely free from organic matter. A reliance on a small quantity of a colored precipitate from sulphuretted hydrogen alone would be most unsatisfactory as chemical evidence."

It must be highly gratifying to professors Reese, Genth, and McCulloch, that the ground they took in the above mentioned trial of Mrs. Wharton has been so fully sustained by one of the highest living authorities on the subject.—*American Journal of Medical Sciences.*

On Retroflexion of the Uterus as a frequent cause of Abortion.

J. J. Phillips, M.D., remarks, that numerous observations had convinced him that the chief cause of frequent abortion, was a displacement of the uterus backward.

"It is not very uncommon to notice the ascent above the pelvic brim about the third or fourth month of a previously retroflected uterus, especially when certain precautions are observed by the patient, and indeed occasionally under conditions apparently most unfavorable for its restitution. Nevertheless, making due allowance for cases terminating thus favorably, retroflexion of the uterus appears to be so efficient a predisposing cause of abortion that it should occupy a leading position in an enumeration of the local disorders tending to the production of this accident.

"A not unimportant factor in the production of abortion may be found in the interference with the uterine circulation in some cases of marked retroflexion, tending to the effusion of blood between the uterus and the placenta, and this in its turn exciting uterine action, or leading to the death of the ovum."

"*Case* 1. Age 30, six abortions between end of second and end of third month, in three years: uterus found retroflexed; Hodge's pessary employed: woman became again pregnant; pessary worn until end of sixth month; patient delivered at full term.

Case 2. Age 35, mother of 6 children at term; aborted twice in one year, tenth week; uterus larger than natural and retroflexed; treatment and result as in the former instance."

Where pregnancy has occurred before the commencement of treatment, the author recommends the resort to a horizontal position either upon the face or side, and attention to the bladder and rectum.

The presentation of this paper gave rise to a very long discussion, the general opinion being in concurrerce with the views of the author, both as to cause and treatment.

On Post-mortem Parturition, with reference to 44 *Cases.* By J. H. Aveling, M.D.

This is a record of cases which belong to the curiosities of medical experience; many of them, especially the more ancient, savoring very much of the fabulous, particularly as to the duration of the life of the fœtus in utero, after the decease of the mother. That a fœtus may be expelled with its secundines, some hours after death from labor, and generally by gaseous force cannot be questioned; but that such children are ever born alive may well be doubted, particularly when there is abundant evidence to prove that the fœtus, only in very rare instances, survives even as long as half an hour. The late Prof. Chapman, of this city, once attended a lady who died in labor, in whose abdomen there were evidences of fœtal life for half an hour after death. He was very anxious to open tke woman and deliver the child, but the husband and family opposed the resort to the knife upon her. In cases of very sudden death, as from apoplexy during labor, occurring in the height of summer, rapid decomposition may, by gaseous evolution, force the fœtus from the uterus at a comparatively early period, but scarcely so early as to make it at all probable that in any instance the child should still be alive. We cannot endorse Dr. Aveling's sixth conclusion, page 225, viz., "that after the death of its mother, a child may continue to live in the uterus for many hours," unless we have better authority for it than any he has given us. This appears by the discussion of the paper to have been the opinion prevalent at the meeting at which it was presented. The history of post-mortem Cæsarean operations sustain us in our opinion.—*The American Journal of Medical Sciences.*

Phosphorus in Certain Forms of Disease of the Nervous System.

Dr. Dickinson has recently been experimenting clinically with phosphorus in cases of affections of the nervous system characterized by deficiency of nervous energy, and has obtained decided evidence of the value of this remedy (see *The Practitioner* for April, 1873). He recommends a method by which phosphorus can be given in a form at once active and inoffensive, namely, dissolved in oil or lard, and inclosed in a gelatine capsule; the dose is about 1-30 of a grain, and it may be taken two or three times a day, always after food.—*American Journal of Medical Sciences.*

Propagation of Typhoid Fever by Milk.

In the summer of 1872 an epidemic broke out in the village of Armley (in the borough of Leeds, England) which Dr. Ballard, in an official report just published, proves beyond reasonable doubt, was propagated through the medium of the milk supply. It will be remembered that a similar epidemic broke out at

Islington, and which Dr. Ballard proved to be due to the same cause. (See No. of this Journal for Jan. 1871, p. 270.)

Dr. Ballard, in his report of the epidemic at Armley (the *Lancet*, April 5th, 1873), shows how remarkably the fever picked out the customers of the dairyman, who is believed to have contracted the fever in a neighboring locality five or six weeks before the epidemic began; how the largest consumers were among the earliest, and the smallest among the latest attacked; and from the different facts stated and line of argument indicated he comes to the conclusion that the outbreak was due to the distribution of milk from the particular dairy of the infected dairyman, which milk had in some way become contaminated with the poison of enteric fever. He then proceeds to show how this contamination may have occurred, and proves that a well in the dairyman's yard used for dairy and domestic purposes was liable to be contaminated by the contents of a privy and a dung-hole into one of which, if not both, the discharges of the dairyman, when ill, would be thrown, and he further shows that the sudden outburst of fever occurred within a fortnight of the period when the well would most probably have become polluted in the foregoing manner, while the time of its cessation followed the closure of the well at an interval consistent with the theory of the polluted water (added doubtless to the milk) being the efficient agent in the propagation of the fever.—*American Journal of Medical Sciences.*

Chronic Cystitis with Putrescent Urine.

Mr. W. H. Day records (*Brit. Med. Journal*, May 10, 1873) an interesting case of a man æt. 71, who had suffered with prostatic disease for ten years, and during the past two years the catarrhus vesicæ had been very severe. The urine contained large quantities of pus, was strongly ammoniacal, horribly offensive, and caused such burning in the urethra that he had to walk about in the night for hours tightly grasping the penis to relieve his sufferings. He said in his own words—"What with the pipe being so hot, and the stench of the water, I shall go mad if you don't do something to relieve me." The usual remedies had been of no avail. Thinking that carbolic acid might possibly modify the action of the mucous membrane of the bladder, Mr. D. injected (February 6, 1873) a pint of warm water containing half a drachm of carbolic acid (1 in 223) into the bladder through a double catheter. After remaining a few minutes, it was allowed to run off again. No pain was experienced at the time. Two hours after, he had great abdominal pain, with urgent desire to micturate, and the water forced itself through the urethra in such quantities that he avowed he must have passed two or three gallons in the night. The next morning he still complained of the abdominal pain which was evidently caused by distention of the bladder. Mr. D. introduced a catheter and drew off a pint and a half of clear amber-colored urine, free from smell of any kind, with complete relief to the pain. Excessive diuresis continued for a few days. The burning pain and putrid urine have been entirely absent now for three months.

Subsequently the patient had one or two indications of a return of the symptoms and he was afraid he might soon require a repetition of the operation.—*American Journal of Medical Sciences.*

Advantages of Circumcision from a Surgical Point of View.

Dr. Cadell read a paper on this subject before the Med. Chirurg. Soc. Edinburg. He considered it in four aspects: 1. In infancy. 2. In boyhood. 3. In adult life. 4. In old age. He described:

1. The local and constitutional disturbance which may be set up by a long prepuce in infancy, and showed how these might be immediately relieved by circumcision. He read notes of a case, and also referred to those of Mr. Bryant, illustrating the effects of an adherent prepuce on the urinary organs, and the relief obtained by circumcision.

2. In boyhood, he believed that a long prepuce, by imprisoning the secretion from the glans, might be an exciting cause of masturbation; and if there was an hereditary disposition to nervous affections, epilepsy and insanity might be thereby induced.

3. In adult life, circumcision would facilitate cleanliness, diminish the secretion from the glans, so that the great cause of non-venereal excoriation would be removed, and thus render the mucous surface less susceptible to the venereal poison.

4. In old age, he cited Mr. Hey's opinion, that a congenital phimosis was an exciting cause of cancer in the penis.

In conclusion, Dr. Cadell remarked that he would strongly recommend circumcision in boys between infancy and puberty, whenever a congenital phimosis caused them the slightest inconvenience.

Professor Lister said the cases alluded to by Dr. Cadell, of irritation caused by adherent prepuce, must be admitted to be of great interest. They knew that where adhesion existed there was often an accumulation of secretion, and they could understand that to be a cause of irritation. He should like to have it clearly brought out how far the symptoms in these cases were attributable to that cause, as distinguished from mere length of the prepuce. Though all would allow that cases of phimosis ought to be subjected to operation, it ought to be considered whether circumcision was the best that could be done. The object could be obtained without mutilation. Mr. Jordan, of Birmingham, had written an interesting paper on the subject, showing that a perfectly natural condition of things might be obtained by the simple means of notching the ring of the skin to the requisite extent, and then dividing the mucous membrane up to the *corona glandis*, and, avoiding all use of stitches, simply have the part drawn backwards and forwards twice every day. As regarded the question of malignant disease, he might have been unfortunate, but he had now seen a large number of cases of cancer of the penis, not one of which was associated with phimosis.

Dr. J. Bell said his experience in regard to circumcision was in cases of long standing and perfectly incurable nocturnal enuresis by small children who were in the habit of wetting the bed. In as many as four or five cases he had succeeded in effecting a perfect cure, by simply removing the redundant portion of the prepuce. In one case, a very bad case, a poor little fellow made his water first in the prepuce, which was like an orange at the end, and then he got rid of the water by squeezing it with his hand, the water coming out by a small aperture. That case was in George Watson's Hospital, and it became a question with the managers how to provide the necessary bedding for the boy. The operation performed was very simple, and was a complete cure. He (Dr. Bell) had very little experience of adherent prepuce; cases of adhesion of the prepuce were not so common as those of long prepuce.

Dr. Halliday Douglas said, that several years ago he was waited upon by a gentleman who had been married a few days before, and who had failed to effect connection. He was laboring under a very tight phimosis. He had never experienced any inconvenience during his life of twenty-five or twenty-eight years. He (Dr. Douglas) transferred him to Mr. Syme's hands, and within twelve months there were twins born to him. Another curious fact in this gentleman's history was this: In early life his brother had been relieved of phimosis, and three of his children, nephews of the first gentleman, had required to have the operation performed.

Dr. Watson was glad that the conclusion to which Dr. Cadell had arrived was, that where an elongated prepuce was a source of annoyance, it was right to relieve the person by removing it. As regarded the question of the comparative frequency of venereal complaints among persons who had been circumcised and those who had not, he might refer Dr. Cadell to a paper which appeared in the *Medical Times and Gazette*, 1st Dec., 1855, by Mr. J. Hutchinson, in which it was shown that at the Metropolitan Free Hospital, situated in the Jews' quarter, in London, in the year 1854, the proportion of Jews to Christians among the out-patients was as *one* to *three*—at the same time the proportion of cases of syphilis in the former to the latter was only as *one* to *fifteen*. Yet, that this was not the result of any higher degree of morality on the part of the Jewish population was obvious, because fully one-half of the cases of gonorrhœa occurred in Jews.

This preventive influence of circumcision, as regards chancrous infection, led to hereditary syphilis being rarer among the children of Jews than of Christians. * * * He was surprised that Dr. Cadell did not quote that greatest of all authorities on such matters, viz., Dr. Ricord, who had said, in one of his published clinical lectures: "The prepuce is an appendix to the genital organs, the object of which I could never divine; instead of being of use, it leads to a great deal of inconvenience, and the Jews have acted kindly in circumcising their children, as it renders them free from one at least of the ills to which flesh is heir. The prepuce is, in fact, a superfluous piece of skin and mucous membrane which serves no other purpose than as a reservoir for the collection of filth, especially when individuals are inattentive to cleanliness." This was very strongly confirmatory of Dr. Cadell's views, though it appeared to Dr. Watson a little extreme.—*Edin. Med. Journal*, February, 1873.

Nocturnal Incontinence of Urine Cured by Circumcision.

Dr. Joseph Bell communicated to the Med. Chir. Soc. of Edinburgh, a case of nocturnal incontinence of urine, which had persisted for seven years, in which he had performed circumcision a month previously, since which the incontinence had entirely ceased.—*Edin. Med. Journal*, May, 1873.

Dermic Grafting in Ophthalmic Surgery.

Dr. Wecker describes a plan of grafting which he terms dermic and which he performs as follows: He pinches up a small fold of the skin of the arm, or of the forearm, between his thumb and index finger, and transfixes the base of it with a small bistoury. The piece of skin is seized with forceps and cut off at the base with a pair of curved scissors. He thus obtains small grafts which when retracted, measure from 6 to 8 mm. (.24″—.32″) in different directions. These grafts are then applied to the wound and spread out carefully by means of a blunt probe. It is intended that the wound should be covered as completely as possible with a serrated mosaic of these pieces. The wounds of the lids, or in their neighborhood, measure commonly only about 3—4 per cent. (1.2″—1.6″), and require about 10 or 20 pieces to cover them. A piece of gummed goldbeater's skin is then placed over the wound, and this allows of a constant inspection of the condition of the grafts. A bandage is applied over the eyes to insure absolute immobility. The dressing is not changed for twenty-four hours. The change which occurs in the color of the grafts indicates in a few days whether the result will be successful or not. Those pieces which adhere have a rosy color at the end of 36 or 48 hours, gradually becoming red; whilst those which have not taken keep their palish yellow tint, become encircled with a brownish black ring, and finally mummify. It is remarkable that even beneath the mummified grafts when they become detached, it is found that cicatrization has been completely established. In reality it is then discovered that only the epidermis has shrivelled up, and that the derma has become grafted. If any fail, however, it is an easy matter to fill up the gaps left in the mosaic. By this means suppuration is prevented, which is injurious to the other grafts. He does not hesitate to assert that covering a wound in a state of granulation "at the edges of which cicatrization is commencing, or, at least, is about to commence" (Reverdin), with this kind of mosaic will at once check suppuration. The indications for the employment of grafting appear, at present, to be the following: 1. Grafting ought always to be employed in cases of burn of the eylids or neighboring parts which give rise to suppurating wounds, and by faulty cicatrization of which deformity or displacement of the eylids would be caused. 2. It can be very advantageously employed, in cases of partial or complete ectropion of the eyelids in consequence of cicatricial contraction in their neighborhood (burns, caries, fractures, etc.). 3. Dermic grafting may, with advantage, take the place of almost all, if not all blepharoplastic operations. 4. Grafting ought to be employed in all cases in which the eyelids have undergone a considerable loss of substance in consequence of an accident or an after operation, and a suppurating wound remains.—*Royal London Ophth. Hosp. Rep.*, Feb., 1873, from *Annales d'Oculistique*, July–August, 1872.

Injection of Perchloride of Iron in Post-partum Hemorrhage.

A most interesting debate on the treatment of post-partum hemorrhage recently took place at the London Obstetrical Society, in which the merits and demerits of this treatment were fully discussed. Dr. W. S. Playfair states (*The Obstetrical Journal*, May, 1873) that a few days after this debate he had a case in which he employed it, and firmly believes he saved by it the life of his patient; "yet very grave and even alarming symptoms followed, due, it can hardly be doubted, to its employment." Referring to the journal just named for the minute details of the case, we may state that "when the iron was injected, although the hand was in the uterus, and the clots within it had been as much as possible removed, blood was still pouring out abundantly. The powerful astringent at once corrugated all the blood and coagula it came in contact with, and these hardened clots filled up the uterus and the canal of the vagina. In due course these began to decompose, and septic absorption took place. By the finger and the intra-uterine injection they were gradually broken down and removed. The improvement unquestionably dated from the expulsion of the two large and decomposing coagula on the sixth and seventh days after delivery. Immediately after this happened, the temperature and pulse fell remarkably, and recovery commenced and continued uninterruptedly.

"What then is the lesson to be learned from this case? Is it that the risk is too great, and that the injection of the perchloride of iron should be banished from practice? I think most unquestionably not. I have little doubt, knowing what I did of the patient's former labor, and having already tried in vain all the anti-hemorrhagic treatment at our command, that without the perchloride the flooding would have proved fatal. It is indeed precisely in these inveterate cases, where every means of inducing uterine contraction proves unavailing, that it forms so invaluable a resource. Rather, I think, it should teach us to limit its use to these only—as, I believe, Dr. Barnes has all along taught. It shows also that the retention in utero of hardened coagula, liable to decomposition, may prove a source of danger hitherto unsuspected. With a knowledge of this fact it would be our duty to secure the expulsion of the coagula as soon as possible after all risk of hemorrhage had ceased, and make sure that there was a free exit for the discharge.

"This would best be done by satisfying ourselves on the second or third day after delivery that the vagina is not filled with clots and removing them if present, and by using antiseptic intra-uterine injections freely, as in the above case, should suspicious symptoms arise. With a knowledge of this source of danger, it might probably be avoided in most cases."—*American Journal of Medical Sciences.*

Convulsive Diseases of Women.

Dr. Robert Barnes, in his admirable Lumleian Lectures recently delivered, sums up in the following propositions the principal points relating to the convulsive diseases of women:

1. Pregnancy and labor require for their due fulfilment an extraordinary supply of nerve-force.
2. This extraordinary supply of nerve-force implies a corresponding organic development of the spinal cord.
3. The provision of an extraordinary supply of nerve-force implies a greatly augmented irritability of the nervous centres, rendering them more susceptible to emotional and peripheral impressions.
4. The disturbances in nutrition occasioned by pregnancy almost always entail some alteration of the blood, which increases the irritability of the nervous centres, and favors the evocation of any latent convulsive or other nervous diathesis, as chorea, epilepsy, or vomiting.
5. When the blood-change wrought by pregnancy is marked by albuminuria, a poisonous action of peculiar intensity is exerted upon the nervous centres tending to produce eclampsia.
6. Obstinate vomiting in pregnancy probably sometimes proves fatal by the development of an unknown organic systemic morbid process.

7. Menstruation resembles pregnancy in giving rise to an exalted central nervous erethism, and ovulation is a primary exciting cause of epileptic, vomitive, and hysterical convulsions.

8. At the climacteric age, again, there is renewed susceptibility to convulsive disease.

9. Pregnancy, by evoking or producing convulsive diseases, under certain known and passing conditions, puts to the test the various theories of the pathogeny of these diseases.

10. The rational treatment of convulsive diseases in women must take into account the two great factors in the production of these diseases, namely, exalted nervous irritability under the stimulus of the reproductive function, and lowered or empoisoned conditions of the blood.—*Lancet*, May 3, 1873.

A Case of Amputation of the Leg without Hemorrhage, by reason of Thrombosis. By E. P. Sale, M.D., of Aberdeen, Miss.

The reading of Dr. Liddell's paper upon "Thrombosis of Blood-vessels of the Lower Extremities" (see No. of this Journal for Jan., 1873) recalled to mind the case of David S., æt. 20, who was standing on a log, cutting, when the axe, which weighed five pounds, glanced on a bush and struck his foot just posterior to the tarso-metatarsal articulation, severing the foot almost entirely. He was seen by a neighboring physician, who found the hemorrhage very profuse, and which was not controlled entirely until after a period of eight hours; the amount of blood lost could not be accurately ascertained. I saw him twenty hours after the receipt of injury; he was then suffering much from shock and consequences of hemorrhage, evidenced by the hippocratic countenance, coldness of cutaneous surface, vomiting, and being pulseless; his condition was almost one of exsanguination; there was then no hemorrhage of consequence. Amputation was determined upon, but owing to his extreme anæmia, and for other reasons unnecessary to mention, it was postponed for a week, after which period, the portion of foot anterior to the wound was found to be gangrenous. The leg was amputated by Dr. Lowe just above the ankle, by the circular method; *no hemorrhage followed the operation*, and after watching the stump for several hours it was found unnecessary to apply even a single ligature; the patient reacted well and progressed, we are told by his friends, without an unfavorable symptom to complete recovery.

What agent rendered the operation bloodless? I cannot account for it, except by *thrombosis* of the anterior tibial, posterior tibial, and peroneal arteries and their recurrent branches; the state superinduced by anæmia which rendered the blood hyperinotic, as in formation of heart clot after a profuse *post-partum* hemorrhage.—*Amer. Journ. of Med. Sciences.*

Quinia as a Parturient.

Dr. Wm. L. Lincoln, in his report on obstetrics, made to the Minnesota State Medical Society, states that he confidently believes that quinia is a valuable agent when dilatation has taken place, and the pains are not strong; we are sure that we have observed labor materially shortened by the administration of five grains of quinia sulph. And again, when the pains are irregular in regard to duration and interval, we have observed, in half an hour after the exhibition of the dose of quinia, regular pains as to strength and interval. One or two marked cases have come under our own observation, which bear upon the subject matter under consideration.

On the tenth day of June last we saw a lady who supposed herself to be in the fifth month of pregnancy, who had been flowing more or less all the time for three weeks, and had been taking remedies to prevent miscarriage, but who for the preceding twenty-four hours had been having occasional labor pains. An examination revealed a dilating os, but the pains were very irregular, sometimes occurring every four minutes for three or four pains, and then there would be an interval of twelve minutes or more.

After watching the progress of labor for an hour, she got six grains of quinia, and in about half an hour we had the extreme satisfaction of observing that the pains were regular and strong until labor was completed, which occupied about an hour and a quarter. The doctrine has been advanced that if it is so certain a parturient it would be unsafe to administer quinia to pregnant women as a remedy in malarial fevers, for at any time the uterus might be stimulated to take on expulsive contractions. So far as we have noticed, no writer on the subject of malarial fever gives a word of caution on the subject. in days gone by, and we suppose that pregnant women have swallowed their portion of the potent drug in question; and if such are the facts, the question arises, why did not the whole malarial region of our land become depopulated in a generation from miscarriage?

In the month of September two cases presented themselves for a test in this matter, and although the number is too small to be of much moment, yet they seemed to be fair cases for trial. Mrs. W. was the subject of quotidian fever, and desired to have it broken up at once, as she expected to be in labor "any day." She said she was a hard subject to cure of ague, having succeeded in shaking every day for five weeks, at one time, in Illinois, some four years previous. She took thirty grains of quinia sulph. in the twelve hours preceding the time for her next chill, and had no subsequent chill or fever. Her confinement was thirteen days later.

A few days subsequent, Mrs. B., reckoning that she was within two week at furthest of confinement, being ill of a tertian ague, took twenty grains of quinia in the twelve hours preceding her anticipated chill, breaking the fever just three week previous to her accouchement.

We offer these cases not to support a theory, but as simple facts to show that in those cases it proved safe to prescribe quinia in potent doses to pregnant women.—*Trans. Minn. Stat. Med. Soc.*, 1873.

Reclamation by L. A. Dugas, M.D., Prof. of Surgery in the Medical College of Georgia.

AUGUSTA, GA., May 10th, 1873.

To the Editor of the American Journal of Medical Sciences.

I find in looking over the last edition of Professor Gross's great work upon Surgery that my diagnosis in dislocations of the shoulder is incorrectly stated, and I therefore beg leave to make a correction through the pages of your valuable Journal.

The statement of my views on the subject may be found in the *Southern Medical and Surgical Journal*, published in this city in March 1856, p. 131, and also in the *Transactions of the American Medical Association* for 1857. The following is my 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 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 disability."

This is very plain, and yet Prof. Gross, on page 69 of vol. ii, says, "Another sign, although not an infallible one, first pointed out by Dr. Dugas, of Georgia, is the inability which the patient experiences in touching the sound shoulder with the hand of the injured limb." Now it is very evident that Prof. Gross, inadvertently I am sure, leaves out one of the essential elements of my diagnosis, by the omission of the condition upon which rests the inability to touch the sound shoulder with the hand of the injured limb; that is to say, that *the elbow shall touch the front of the thorax.* Prof. G is unquestionably right in pronouncing the diagnosis as stated by him "not an infallible one;" but I respectfully insist that *it is* infallible as announced in my publications.

I have no personal aspirations to gratify by making this reclamation, but do so in order to vindicate the claims of American surgery. New elements of diagnosis, especially when based upon unerring physical laws, have been ever since the days of Laennec regarded as among the most valuable contributions to medical knowledge, inasmuch as they alone can lead us to sound practical deductions. If there be any merit in my diagnosis, let our country have the credit that may attach to it.

Yours very respectfully, L. A. DUGAS.

BOOK NOTICES.

Report of Columbia Hospital for Women and Lying-In Asylum, Washington, D. C. By J. Harry Thompson, A. M., M. D., Surgeon-in-Chief. With an Appendix. Washington: Government Printing Office; 1873.

This work was prepared by request of Hon. Columbus Delano, Secretary of the Interior, and is published as an official document. The main part consists of a clinical account of the principal operations performed in the above-named hospital from March, 1866, to June, 1872, being about 700 in number. In his prefatory letter to the Secretary, the author states: "Much of the success which has attended my labors in this institution has been due to the liberal appropriations made by Congress, which have enabled the directors to furnish competent nurses, talented assistants, and place at my disposal every necessary appliance.

"With the increased accommodations offered by the enlargement of the building, and its perfect system of heating and ventilation, it may reasonably be expected that the future record will be an improvement upon the past.

"Accompanying this report is one from each of the departments of the dispensary connected with the hospital: 'Diseases of women,' 'Diseases of children,' and 'Diseases of the eye and ear.'"

These three departments are for the benefit of out-patients, and are respectively under the charge of Drs. F. A. Ashford, Samuel C. Busey, and D. Webster Prentiss.

"The operations have been chiefly confined to cases of cystocele, rectocele, vesico- and recto-vaginal fistula, prolapsus uteri, the restoration of aggravated forms of lacerated perineum, and obstructive dysmenorrhœa." Under these several heads the author does not confine himself to a simple detail of the operations performed, but speaks somewhat fully of the natural history of the several maladies, the therapeutics, and especially in case of the fistulas and carcinomatous affections bibliography is laid under contribution, and liberal quotations are made. Thus we are entertained with the early history of the modern and only successful mode of operating for vaginal fistulas, told in the language of the originator, Sims himself, and also with extracts from various authors on carcinoma, from Hippocrates to Dr. J. J. Woodward. No less than eight of the broad pages of the book are occupied with quotations from Dr. W's pathological researches in the U. S. Army Medical Museum.

In regard to the nature of carcinoma, Dr. Thompson avers his belief that it is not constitutional in its origin, but the result of a slowly transpiring interstitial inflammation, dependent on local irritation.

"That there is no specific cancer-cell, the cells found in the connective tissue-stroma being altered epithelial cells or the white corpuscles of the blood, their different appearances in different forms of cancer being dependent upon the stage of the disease and the organ in which it is developed." These, we believe, are substantially the views of the most advanced school of pathologists.

His researches give strong evidence that extraordinary fecundity predisposes to cancer, especially of the uterus. This evidence is based on numerous statistics. He finds that the death-rate from malignant disease is much higher in large cities than in the rural districts, but, strange to say, in the healthiest parishes of London cancer is more prevalent and fatal than in the most unhealthy.

As a caustic to arrest the ulcerative process, Dr. Thompson prefers pure bromine, used with due caution to avoid inhaling its irritating vapor, and to prevent its corrosive action on surrounding sound structure.

The questionable operation for extirpation of the parotid gland has been successfully performed, and it was found in a state of fibrous degeneration. The gland and its capsule were completely removed, and the patient made a rapid recovery, remaining in perfect health to the date of writing, six months after. Another case is related, in which an hypertrophied third lobe of the parotid gland was successfully removed.

A very interesting case of impacted fæces is related, which had been previously mistaken for an ovarian tumor. The impaction was found to occupy the whole length of the colon, and treatment by cathartics and mechanical interference was considered out of question. The plan of treatment adopted was that of Dr. F. H. Baxter, U. S. A., based upon the theory that "Constipation is due to excessive contraction of the circular muscular fibres at the top of the rectum, and not to deficient power in the longitudinal fibres of the muscular coat of the colon; that the obstruction is to be overcome not by increasing the transmitting power of the longitudinal fibres, but by diminishing the contraction of the circular fibres, which are mainly under the control of the sympathetic nervous system; that atropia exercises a special influence upon the sympathetic, and if administered in sufficient doses will cause a complete relaxation of the circular fibres, not only of the upper part of the rectum, but of the whole intestinal tract."

Accordingly, atropia was administered by suppositories, and large numbers of hard concretions were passed under its influence, by the aid of enemata. Pain and exhaustion from these expulsions prolonged this treatment to more than two months' duration, but recovery was complete.

It is stated that several other cases have been treated successfully in the same manner. In one the enlargement had been taken for pregnancy, but in six days more than half a bushel of hard scybalar were voided.

In three cases thus treated there was arrest of the menstrual function, attributed to the action of the atropia.

In a case of procidentia recti, the prolapsed portion, five inches in length, was amputated by the écraseur. The tumor was first transfixed at its base by eight silver wires, which, after the action of the écraseur, were divided in the middle over the centre of the new anus; their ends were then twisted together, and thus they served as sutures. Recovery took place in six weeks and remained perfect to date, more than three years.

It is remarkable that, of more than 700 operations, many of them of a highly serious nature, only four should have resulted fatally as a direct consequence of surgical interference. Two followed ovariotomy, and resulted from acute peritonitis; one after amputation at the knee-joint, and another after excision of the mammary gland, death in these cases being due to surgical fever.

The text is illustrated by 18 large well-executed plates, explanatory of pathological conditions and of operations for their relief. The typographical execution is excellent, though a short list of *errata* appears at the close. The page, however, is inconveniently large, being of quarto size.

It is to be observed that a classification for races is made only in the out-department for children, and that for diseases of the eye and ear, though nativity and citizenship are both denoted. It strikes us that such a classification with the maladies peculiar to women might be interesting and useful, without damage to the Fourteenth Constitutional Amendment or the Civil Rights Bill.

On the whole we find very little fault and much to commend in this report, and consider it a valuable contribution to clinical surgery and medicine. H.

An Essay on the Climate and Fevers of the Southwestern, Southern-Atlantic and Gulf States, embracing a Brief Exposition and Defence of the Existence and Essential Nature of Malaria; accompanied and illustrated with a Medico-Topographical and Meteorological account of the Dead Sea Region. By James C. Harris, M. D., of Wetumpka, Ala. Charleston, S. C.: Walker, Evans & Cogswell; 1872.

This is a volume of 103 pages, divided into two parts; the first part treating of the physical geography, animals, plants, minerals and prevailing diseases; the second being occupied with a brief discussion of malarial fevers, followed by a description of the physical features of the Dead Sea Region, intended to illustrate and prove his theory of the gaseous nature of malaria.

Of part first little need be said, as it is mostly compiled from good authorities, and its general accuracy is not questioned. There are, however, some statements in regard to yellow fever so striking as to justify a moment's notice. On pages 18 and 19 occurs the following: "In New Orleans a *variety of malarial fever with black vomit* has been frequently observed, sometimes in an epidemic form, and described by himself [Dr. Faget] since 1853 under the name of *hæmatemesic paludal fever*, which so much resembles the true *hæmagastric pestilence*, that it was recognized by Drs. Delery and Fenner, together with a large majority of their medical brethren, *as pure yellow fever*." We admit that Dr. Fenner considered yellow fever a variety of malarial fever, but not that his opinion was shared by anything like a majority of his *confreres;* and are positive that no such belief is entertained by any considerable number of our practitioners at present.

On page 19 he states that Selma has not been visited by yellow fever. On page 20 he remarks that in 1854 and 1855 it again made its appearance and prevailed.

On page 22 he speaks of malignant cases of remittent fever at Wetumpka, which, after studying yellow fever in the wards of Charity Hospital, he is "satisfied were sporadic cases of that disease." It is evident, therefore, that he does not consider yellow fever a specific malady. In this connection we may be allowed to present some points of difference in the natural history of yellow fever and the malarial fevers, which show *to our satisfaction*, their diverse character.

Yellow Fever.	The Malarial Fevers.
1. Prevails chiefly in cities and towns.	1. Prevails mostly in the country, especially in newly-settled localities.
2. Not indigenous to the United States, but introduced by commercial intercourse.	2. Certainly native to the soil.
3. Transportable and communicable by fomites.	3. No infectious properties recognized.
4. Secondary attacks rare.	4. One attack predisposes to others.
5. A fever of one paroxysm.	5. Number of paroxysms indefinite.
6. Antiperiodic treatment not required.	6. Antiperiodic treatment demanded.
7. Sequelæ rare.	7. Sequelæ common.

In part second Dr. Harris succeeds, *to his own satisfaction*, in overturning the theory of the cryptogamous origin of the miasmatic fevers, from the non-discovery of any form of animal life in the waters of the Dead Sea by Lieut. Lynch, and the fact that his party, after exploring this sea, were attacked by "a fever of a low, nervous grade." His inevitable conclusion is, that malaria consists in "*a gaseous element*, the result alone of the combination of the elements of *decomposing dead organic materials*." We leave this extraordinary logic to the judgment of our readers, merely adding that Dr. Harris does not attempt to elucidate the chemical constitution or physical properties of those *gaseous emanations* which no scientific observers have yet been able to find as the constant and inseparable companion of malarial fevers.

It is not usual, in notices of medical works, to criticise their literary character, and we are sorry to find so abundant occasion in this performance. As the majority of writers trust their punctuation implicitly to the printer, just as the unknown future is trusted to an all-wise Providence, we shall not charge imperfections, in this particular, to the author. But the most indulgent reader would hold him responsible for false syntax and obscure modes of expression, which are found on almost every page. Examples of original orthography are occasionally met with, of which "litchens," "cantelope" and "moschitors," may be instanced. The word "tropicoid" occurs frequently in this essay, but we do not recollect its use elsewhere.

Although this notice has been extended perhaps to an undue length, considering the size of the book, we would gladly say more, if it could honestly be in its praise. Here then we must pause. H.

Position in Labor.

Our attention has been directed to an article on this subject published in the Chicago *Medical Examiner* of July 1st, by Dr. J. W. Smith, of Iowa. He believes that this subject has been thus far depreciated, and that he has discovered a system which will greatly facilitate most labors.

The supposition is, that the presenting portion of the fœtus always or generally has more or less inclination to some particular direction in the pelvis—laterally, anteriorly or posteriorly. His plan is, to ascertain as early as possible this direction, and to place the woman in position precisely corresponding to the presentation. The rationale of this system of posturing is not explained, and we are left to presume that it was empirical with Dr. Smith. Nevertheless he claims extraordinary success since the adoption of his plan, especially when the obliquity is marked.

As it is always gratifying to have a theory to account for our facts, we shall venture to suggest one for this case. An obliquity of the fœtus to the axis of the pelvis is always supposed by Dr. Smith, and he finds it generally lateral. Suppose the head to present with an inclination to the right side, he would place the woman on this side, and, in our view, take advantage of gravity to rectify the inclination of the body to the opposite side. If this theory be accepted by him, we shall admit that his plan is plausible and worthy of being put to further tests.

H.

Popular Lectures on Scientific Subjects. By H. Helmholtz, Professor of Physics in the University of Berlin. Translated by E. Atkinson, Ph. D., F. C. S., Professor of Experimental Science Staff College; with an introduction by Professor Tyndall. New York: D. Appleton & Co.; 1873.

This little volume is a collection of lectures upon scientific subjects by one of the ablest thinkers of the present day. The author has been wonderfully successful, even when writing upon abstruse subjects, in clothing his ideas in language as lucid and simple, as it is elvated and beautiful. He condemns, and has altogether avoided, what he terms the "strangely abstract phraseology" of Hegel, and which, he adds, "was perhaps really understood by but few of his worshippers." While these lectures are, without exception, replete with interest and valuable information, some of them trend especially upon subjects which concern the medical profession. Among these may be instanced, three lectures under the general head of "The Recent Progress ot the Theory of Vision:"

I. The eye as an optical instrument.

II. The sensation of sight.

III. The perception of sight.

The lectures upon "The Interaction of Natural Forces," "The Conservation of Force," and "The Aim and Progress of Physical Science," all contain allusions to important physiological questions.

Critiques and Addresses. By Thomas Henry Huxley, L. L. D, F. R. S., New York: D. Appleton & Co.; 1873.

The reputation of the author of these lectures is as well established in this country as in Europe. Indeed, I do not doubt that his writings are more generally read here than in his native land. These lectures well maintain his reputation for a mode of thought more than usually bold and original, and yet never parting from that strong common sense which invests his writings with their peculiar power of appeal to all cultivated and thinking readers. The lectures which the medical reader will find of greatest interest, are those upon "Yeast Ethnology," and the "Metaphysics of Sensation."

Foods. By Edward Smith, M. D., L. L. B., F. R. S., etc. New York: D. Appleton & Co.; 1873.

Since the days of a very wise old doctor, it has been a common remark that "every medical student should spend six months in a kitchen before presuming to practice medicine." According to this apothegm, the disability to become a practitioner relates to a deficiency in the knowledge of the culinary art, rather than to a deficiency in the knowledge of dietetics. In this event Dr. Smith's book would serve but little purpose as a substitute for the half year's sojourn among the pots and skillets. It is intended for a book—perhaps a hand-book—on foods, their nature, and special functions (so to speak), in the animal economy. A great amount of valuable information on these points is collected and placed in so compendious a form, that the author's opinions may be quickly consulted in any question concerning dietetics. A great difficulty, which perpetually confronts the physician, in regard to the nourishment of his patients, relates to the selection and proper preparation of their foods. The former is his duty; the latter falls to the nurses and attendants. The physician should not only carefully prescribe the quality, quantity, and hours of administration of the patient's nourishment, but particularly instruct the cook with respect to its mode of preparation. Dr. Smith's book is principally valuable in reference to the former point, but contains many useful hints in regard to the latter, and will well repay the practitioner for his outlay in its purchase.

Braithwaite's Retrospect of Practical Medicine and Surgery. Part LXVII. July, 1873. New York. W. Townsend, Publisher.

This number contains the usual amount of valuable reading matter. Indeed, the articles on Surgery and Midwifery are more than usually practical and interesting.

PHARMACEUTICAL.

Practical Questions to a Practical Druggist, with his Answers.

1. As we generally prescribe quinine in pills, and often wish to comprise the largest possible amount in the smallest possible pill, what are the best methods of securing its compression, without impairing its solubility?

A.—This question has often engaged the attention of physicians and druggists, and has elicited much discussion and inquiry. Experience and careful observation have convinced me that the two important desiderata, compactness and solubility, are best accomplished as follows:

To every six grains sulph. quinine add one drop sulph. acid, converting the insoluble sulphate into a soluble acid sulphate. This, when well worked, forms an exceedingly tenacious and quite heavy mass, easily shaped into pills, which, notwithstanding that they soon become very hard, are readily soluble. A five grain pill macerated in water maintained at the temperature of the body, dissolves perfectly in 15 minutes. Subjected to the grinding process of the stomach and the action of the acid gastric juice, it is safe to assume that solution takes place with even greater promptness.

2. What are the objections to the officinal mucilages, in making pills, either for immediate use or for preservation?

A. The officinal mucilages of gum arabic and tragacanth are excipients rarely employed by apothecaries, for several reasons. 1st. Being, when made according to the pharmacopæa, very unstable preparations, it is deemed unwise to keep them ready made for any purpose. 2d. Although both can be used successfully as coherent agents, yet the pills in a short time become so hard that they are almost insoluble, and consequently unfit for use. 3d. We have many other excipients possessing all the requirements sought after, and which admit of a much wider range of application, as honey, evaporated to one-half its bulk; glycerine, thickened with a little starch; a solution of soluble cream of tartar, evaporated to the consistency of syrup; extract of gentian, etc.

3. Is glycerine the best substitute?

A. Glycerine, as an excipient, is objectionable, on account of the exceeding nicety which must be exercised in its employment. A very slight excess will cause the pills to remain constantly moist and sticky by the glycerine oozing out.

In substitution of mucilage, I would suggest using the impissated honey, or the concentrated solution of soluble cream of tartar. These answer admirably as general excipients, and are particularly suitable for pills of iron by hydrogen, subnitrate and carbonate of bismuth, Dover's powder, camphor and oxalate of cerium.

4. What advantages and disadvantages result from sugar-coating pills?

A. Reference, I suppose, is had to the extensive productions of Northern and other pharmaceutical manufacturers which have of late years become so popular and widely diffused. The operation of sugar coating, as performed in the officine of the apothecary is a tedious, and, at the best, a very unsatisfactory one. This fact being fully understood and appreciated by most physicians they rarely direct pills to be so confectioned; occasionally, however, a newly fledged doctor, in zealous admiration of "Elegant Pharmacy," and actuated by the desire—a very laudable one—to gain the affection and gratitude of his patient, will very inconsiderately terminate his prescription with the obnoxious *Saccharo Tectum.*

The advantages claimed for sugar coated pills are convenience to the dispenser, elegance of appearance and pleasantness of taste. The first needs little comment; no conscientious apothecary who takes pride in his profession and interest in the reliability of the medicines he dispenses, should consent to avail himself of this convenience except at the special request of the physician, or when positively desired by the customer. If in certain cases it be deemed important to consult the fastidiousness of the patient, certainly a higher degree of elegance is obtained by silvering or gilding the pills. This is an operation performed by the apothecary in a few minutes upon pills of his *own* make, and obviates the increased bulk which a crust of sugar produces. To overcome the disagreeable taste and odor peculiar to some substances, silver or gold leaf is fully as effectual as sugar, and when assafœtida or castor fiber are the cause of the trouble, certainly much more so. The sugar covering, the odor of assafœtida soon penetrates; silver or gold leaf are permanent barriers to its egress. Of the marked disadvantages presented by sugar coated pills—ignoring the duplicity of stock which they force the apothecaries to keep in their shops—are the increased size, and their great hardness and consequent insolubility. To the first allusion has already been made. In order to produce a coating that will not spoil, it is absolutely necessary to first expel every particle of moisture that the mass may contain; this renders the pills so hard, that if not quite insoluble, they will yet for a long time resist the solvent action of the gastric juice, thereby retarding the effect of the medicine looked for, to the disappointment of the physician and perhaps injury of the patient.

5. What media are best suited to hold bismuth or powdered

charcoal in suspension, when the physician desires to obtain their most efficient action as absorbents?

A. The common and time-honored practice of suspending bismuth in mixtures by the aid of gum arabic, I will not venture to pronounce positively bad, yet, in my opinion, it deserves to be criticised, and should be discarded for some more appropriate method. I have observed that bottles coming back to be refilled, frequently contain at the bottom quite a considerable quantity of the bismuth originally put in, and which was not at all easy to dislodge. It seems that the particles of bismuth are enveloped, as it were, by the gum, and in their gradual descent, carry this with them to form at the bottom a finely agglutinated mass which can only be broken up and again thoroughly mingled with the supernatant liquid by energetic and protracted agitation. Although invariably admonished to do this by a "shake well" label, the direction is seldom properly conformed with, and patients, and even doctors, will sometimes indulge in the, to them, delightful occupation of censuring and rebuking the innocent apothecary for having prepared the medicine badly. Several years ago I first suggested using a solution of wheat starch, in the proportion of one drachm to four ounces, in the stead of gum, and to my gratification it was at once adopted as a decided improvement by many physicians. The suspension, I admit, is not permanent, yet the separation is very gradual, and simply upturning the bottle promptly restores the desired condition. For charcoal mixtures, half a drachm of starch to four ounces will be sufficient. If a sweetener is to be added, glycerine, for obvious reasons, will be found to answer better than sugar.

6. The officinal syrups speedily ferment in this climate; how can this be prevented?

A. The fermentation of officinal syrups is an annoyance seldom experienced by the apothecary, for if prepared "lege artis," in quantities proportionate to the consumption, and kept in suitable vessels, these syrups do not spoil. With the country practioner, who is deprived of pharmaceutical assistance, and, in consequence, is compelled to compound as well as prescribe, it is different. Lacking the time and necessary facilities for their preparation, he finds it not only convenient but actually unavoidable to buy his tinctures, syrups, etc, from some reliable drug house, replenishing his stock perhaps twice a year. Now, although we cannot really class syrups as unstable, yet we are aware that some of them, as ipecac, wild cherry, orange peel, sarsaparilla comp., and others, are prone to ferment after several weeks, especially if kept in partly filled bottles, unless an antiseptic be added. The best addition to prevent fermentation, I consider, is glycerine, which does not alter the taste or other properties of the preparation. Sugar of milk, or sulphite of lime, in small proportions, are also used. Ten per cent. of alcohol will effectually prevent fermentation.

7 In 1870 I prescribed for a child aged three months, a powder containing one fourth of a grain of extract of hyoscyamus. About three hours after getting the powder the child had a cutaneous efflorescence, with hurried pulse and dilated pupil. Ten days ago I gave an adult three doses at intervals of two hours, each containing six and two thirds grains of sulph. quinine and two grains of extract of hyoscyamus. The patient had flushed face, dry mouth, dilated pupil and slight delirium. In both instances the druggists have assured me that it was not possible for any mistake to have occurred in putting up the prescription. If the hyoscyamus was not adulterated, these are the only instances in which I have been able to note any such effects from its use, in a practice of over a quarter of a century. Is there any reason to believe that manufacturers ever *doctor* their extracts of hyoscyamus with enough belladonna to give them more energy of action?

A. The unusual and alarming symptoms manifested in the two cases cited I would rather ascribe to the idiosyncrasy of the patient than to undue energy of the drug. Several years ago I put up a prescription containing, if my memory serves me right, two and a half grains of extract of hyoscyamus to the dose. The following day, the physician from whom the prescription emanated, accompanied by the patient, entered the shop, and, in language more forcible than elegant, accused me of having made a most serious blunder. Extract of belladonna, it was asserted, had been used instead of hyoscyamus. In vain I protested my innocence; remonstrance was worse than useless, and I was threatened all sorts of disagreeable things. Now, the one pound jar of Allen's extract, which had been used, was about three-quarters empty, and this was the first complaint I had heard; furthermore, the belladonna and hyoscyamus extracts were kept in different lockers. I was therefore positive I had made no mistake; the doctor and patient were convinced I had. After much persuasion, the patient consented to have the prescription put up anew. This time I took the extract from a parcel of the same brand which had not yet been opened, and to make assurance doubly sure, I swallowed five grains myself, without experiencing any inconvenience whatever. To my great relief and gratification—very selfish, I must admit, but in this case, I trust, pardonable—I learned that soon after the first dose had been taken by the patient, the same distressing symptoms as before were developed, rescuing my pharmaceutical reputation for correctness, which had been so seriously jeopardized. The suspicion that manufacturers sometimes, probably, resort to the nefarious practice of sophisticating their extract of hyoscyamus with belladonna to increase its activity, I am inclined to discredit; although satisfied, by experience, that our domestic manufacturers of narcotic extracts do not bestow upon their preparation the nice care and attention essential to ensure the production of a good article; yet I cannot believe that they would wilfully abuse the confidence of their customers in so base a manner, especially as such an admixture as that alluded to would not long escape detection.

I give preference to the English narcotic extracts, which I have found more uniformly active than the American.

8. I have never obtained efficient ecbolic action from any one of the "put up" preparations of ergot; are there any obvious reasons why they should not possess the energy of the recent fungus grain?

A. I must confess that I touch upon this subject with considerable reluctance, for in expressing my views unreservedly, I cannot well avoid mildly criticising a fault, prevalent among physicians and my confreres, which I consider mischievous and decidedly unscientific. Let them, however, do me the justice to believe that I am actuated only by the earnest desire to see certain abuses abolished, which are pregnant with disappointment to the physician, as well as detrimental to the immediate interests of the apothecary. I allude to the undeserved popularity and patronage enjoyed by many northern and foreign medicinal preparations, to the unjust exclusion of the legitimate productions of our own laboratories. Of this class none are more prominent than the concentrated preparations of ergot, and experience has taught me that none are less entitled to confidence. The apothecary shifts the responsibility upon the physician, saying that he is not permitted to exercise his judgment as to the propriety of using his own preparation, when some other is distinctly called for, even though he be convinced that his would serve the physician better. The argument is sound, I admit, yet I would say this: if you are aware that the preparation prescribed is inferior to your own, is it not your bounden duty to apprise the physician of that important fact? Reasoning physicians will ever lend a willing ear to sensible suggestions, and I have yet to meet one whom I could not convince that we are fully able to produce a preparation of ergot as efficient as that of Batley, Squibb or Bonjean. These are unquestionably carefully made, and honest preparations, and when recent are no doubt unexceptionable. The trouble is, we never get them in a fresh state, and as found in the shops they are usually quite old, and in consequence, inert, and utterly worthless.

The officinal formula for the fluid extract yields a preparation which possesses all the virtues of the drug, and I do not see that, pharmceutically, it can be improved. I adhere to it strictly, and have never failed to produce an active and satisfactory article.

Before grinding, the ergot should be carefully garbled, and all but the sound and entire grains scrupulously rejected. According to the investigations of Mr. Wenzell, ergotic acid—the organic acid with which the alkaloids of ergot are united—is volatile; hence these salts are very unstable, and upon the application of heat are readily decomposed; this tendency it is thought, is completely controlled by the acidulated menstruum, but I doubt this, and deem it advisable to conduct the evaporation at as low a temperature as possible.

I am satisfied that none of the processes by which concentrated preparations are at present obtained insure permanence, and I consider it improper to make more than a four or six months supply at a time.

WM. A. VOGEL.

PROF. BEMISS: You requested me to give you an article for your Journal; if you think the following views on what I consider a crying evil, worth printing, they are at your service.

My subject will be the large class of patent nostrums, under the name of "Pharmaceutical Preparations," that are now flooding the whole country, and are being prescribed every day by the regular practitioner who would not, under any circumstances, prescribe a regular patent like "Cholagogue," "Wright's Pills," etc., etc. I allude to the so-called elixirs, syrups, prepared "cod liver oils," and many others of like nature. These nostrums (for nostrums they are, because their various formulæ are kept secret) are regular "skeletons in the closet" to apothecaries. The various manufacturers of these articles (and our cities are full of them) send out their agents—"commercial travellers," as they call themselves—with samples of their goods. They come among us, and their first object is to create a demand. They get a list of the M. D's. in our city, call on each one and praise their goods, leave samples, manage to get on the blind side of the doctor, and the result is, the apothecary gets a prescription for an elixir or something, often never heard of before, or from a manufacturer that no one knows, and as the "℞" calls for that very article, made by that very manufacturer, the apothecary don't feel at liberty to substitute another manufacturer's preparation of the same article, or at least which goes by the same name; he has to send all over the city to fill the prescription. As there are a dozen or more of these manufacturers, each one represented by an agent here during the year, the poor apothecary has to fill his shelves with a large number of articles that pay him a very small profit when sold, and half of them remain "shop keepers," or, as we term them, "old soldiers."

Now, I wish to ask, does the physician know the composition of these articles when he prescribes them? Are they not nostrums? Why do not these gentlemen publish their formulæ? I find an advertisement in your Journal of a most wonderful article: the "Iodo-Bromide Calcium Compound." How much iodine, bromine, and lime are in this article? How much "compound," and what? It don't even say who makes it, yet it must be a great thing. It knocks gout all to pieces; never fails in catarrh; cures cerebro-spinal meningitis every time, and beats "sheep saffron" in measles all to pieces.

I do not condemn this class of remedies provided their composition is known. They are generally very pleasant to the taste, and will often enable the doctor to give a very disagreeable remedy in a pleasant form. What I condemn is the secresy. You must take the manufacturer's word for it that is a good thing.

Now, I propose that the apothecaries of New Orleans meet together and adopt a series of "formulæ" for all of this class of articles, and publish them for the benefit of the profession. This course was adopted by the Pharmaceutical Association of New Jersey some two years ago. Let each pharmacist make his own preparations, and refuse to buy those of Northern make. Then we will get the proper reward for our labor. I also suggest that practitioners refuse to prescribe these articles unless the composition is known, or go in for patent humbugs at once.

J. H. Stockley,
Apothecary.

Pharmaceutical Lexicon: a Dictionary of Pharmaceutical Science. Containing a Concise Explanation of the various Subjects and Terms of Pharmacy, with appropriate Selections from the Collateral Sciences. Formulæ for Officinal, Empirical, and Dietetic Preparations; Selections from the Prescriptions of the most Eminent Physicians of Europe and America; an Alphabetical List of Diseases and their Definitions; an Account of the various Modes in Use for the Preservation of Dead Bodies for Interment or Dissection; Tables of Signs and Abbreviations, Weights and Measures, Doses, Antidotes to Poisons, etc., etc., and as an item of curiosity, a few Leaves from a Dispensatory published in the Seventeenth Century. Designed as a Guide for the Pharmaceutist, Druggist, Physician, etc. By H. V. Sweringen, Member of the Pharmaceutical Association, etc. Philadelphia: Lindsay & Blakiston; 1873.

This volume has just been placed in our hands; it is necessary, therefore, to defer a critical notice until our November issue. As a mere book of reference for the prescription desk, it has, no doubt, a positive value.

The practitioner may find some aid in those "select prescriptions," which teach the quantities and modes of preparation of those drugs he desires to introduce into the system by way of the air passages, or the cellular tissue. Formulæ of remedies, which are not in frequent use, are very properly kept within the physician's reach, but when he comes to rely upon the various "collects" of prescriptions, from whatever source obtained, for helps to the treatment of ordinary cases, his "hits" are about as likely to prove unfortunate as fortunate.

Dr. Horvath, of Kieff, has lately discovered a new local anæsthetic; this is alcohol reduced to a very low temperature. Its contact is not painful like that of ice, or of ether spray. On the contrary, it calms pain, as may be instantly demonstrated by its application to recent burns. It possesses another advantage, in not destroying tactile sensibilty. Dr. H. has employed it successfully in extensive burns, which endanger life from agonizing pain; he recommends its use in traumatic tetanus, and in minor surgery.—*Journal de Médicine et de Chirurgie Pratiques*, Juillet, 1873

EDITORIAL.

We have received some of the advance sheets of Drs. Toner & Butler's "Medical Register and Directory of the United States." The character and intentions of this work are fully explained in the subjoined extract from the edition now passing through the press:

The MEDICAL REGISTER AND DIRECTORY OF THE UNITED STATES is presented to the public under the belief that it will supply an important want long felt by both the medical profession and the public. Works of this kind are deemed indispensable throughout Europe. In some of the States, and particularly in the larger cities of our country, they have been found so convenient to the general practitioner and the public, as to require revised editions annually. But up to the present time no publication pretending to embrace the names of all the physicians of the United States has appeared.

The present volume proposes to supply this desideratum, and although not as complete in all respects as its author could wish, and hopes to make it in future editions, it nevertheless contains what can be found nowhere else—the names of over fifty thousand American physicians, arranged in alphabetical order, with their post-office address, and an indication of the theory of medicine which governs their practice.

In addition to the names of physicians in practice, the work contains the names and location of all the Medical Colleges, Hospitals, and Institutions of the country, the Asylums for the Insane and Inebriate, and the names of the medical gentlemen connected with each of them. Also, the names of all the Medical Societies, State, county, city or local, with the names of their officers, and time and place of meeting, so far as we have been able to obtain the data.

Much other information of general interest to the profession is also given, which makes the Medical Register and Directory a valuable hand-book to every physician.

The Senior Editor of this Directory is now the President of the American Medical Association, and is deservedly held in very high professional and personal estimation throughout the whole country. What the editors need just now, to confer complete success upon their work in point of scope and accuracy, is information with regard to all the facts itemized in the foregoing extract from the preface. The States are arranged in alphabetical order, and so also are the names of the physicians in each State. The advance sheets sent us relate to Alabama alone. It is therefore presumable that information from other States would yet be in time to prove available.

Dr. D. Warren Brickell, formerly Professor of Obstetrics in the New Orleans School of Medicine, has accepted the chair of Obstetrics and Diseases of Women and Children, and Clinical Midwifery, jointly with Prof. W. T. Lusk, in the Bellevue Hospital Medical College. The friends of the school have cause for much congratulation in having secured the services of a teacher as able and experienced as Professor Brickell.

The proprietor wishing to educe to the fullest possible extent, the medical talent of the section which principally gives support to this JOURNAL, in its favor, offers to competitors the following proofs of the sincerity of his intentions:

He will give to the author of the best article upon any medical subject, including the report of a case, a copy of the last edition of Watson's Practice of Medicine, and the NEW ORLEANS MEDICAL AND SURGICAL JOURNAL for one year;—for the best article upon any gynæcological subject, including report of case. a copy of the last edition of Cazeaux Theoretical and Practical Midwifery, and the JOURNAL for one year;—for the best paper upon any surgical subject, including report of case, Billroth's Surgical Pathology, and Tilbury Fox on Diseases of Skin, and the JOURNAL for one year;—for the Essay upon either one of these subjects, pronounced second best, a copy of the JOURNAL for one year. The merits of the various papers offered in competition will be rated by Dr. S. S. Herrick and Professors Hawthorn and Logan. Papers offered for competition must be addressed to the Proprietor, No. 92 Camp street, New Orleans, and must reach him by December 1st, 1873.

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Cholera.

The epidemic of cholera, which is at the present time traversing the United States, devolves upon the medical profession several questions of difficult solution. The first is, with regard to its origin; the second, its mode of diffusion; the third is, with regard to its nature, as it respects identity with Asiatic cholera. The greater interest should attach to a discussion of the first inquiry, from this stand-point, because it seems to be an admitted fact, that the epidemic first made its appearance in this city.

Whether the disease originated here, or was conveyed hither in vessels, or clothing, it is not at this time possible to establish by the testimony of any known and incontrovertible facts. All that has been said, or written, about its importation in ships from Germany, or Russia, remains without foundation in any ascertainable events.

It is certainly but little calculated to inspire confidence in the scientific accuracy of the medical profession, when its members adopt as truths mere rumors, whose entire want of reliability might have been so readily learned by a letter addressed to the Board of Health of this city. No ship had landed in this city from a Baltic port for nearly, or quite, six months before the outbreak of the cholera epidemic.

We must admit, however, that the negative fact that it cannot be shown in what manner cholera was brought here, is not sufficient to confirm a belief in its domestic origin. The opinion, long since advanced, that the deltas of the Ganges, Nile and Mississippi, possess so much similitude in climatic and geological conditions, that it may be assumed that they will give origin to similar diseases, is not supported by the past history of cholera.

Those who believe in the spontaneous origin of cholera, in countries so remote as these, from that which has been for centuries known to be its place of perpetual prevalence, may place the late epidemic of New Orleans along with the St. Kilda outbreak, and successfully challenge all opponents to prove importation by an array of facts. I believe, however, that one important circumstance always attends these mysterious epidemics, which is that they are not known to occur except when cholera has been previously diffused among a population from whom there s at least a *bare possibility* of their germs having been imported

The facts are, that three deaths from choleraic symptoms occurred in February; one near the 1st of the month, another on the 10th, and the third on the 28th. The first of these deaths was at 39 Ferdinand street, the second at the Slaughter House Company's buildings, and the third at the corner of Dumaine and Derbigny. The deaths were separated in point of time by intervals unusually long for a disease generally so rapid in its first assaults as Asiatic cholera. The distances which separated the localities where the deaths occurred were from one to two miles. There was but little possibility of intercommunication between the first victims, and no facts have been revealed to show the starting point of the infection.

To show more particularly how the epidemic comported itself in respect to its mode of diffusion, attention is called to the following statement of facts. It was in March that the disease first began to assume an epidemic character, and during this month seventeen deaths occurred. Taking the first seven fatal cases, as a fair type of the whole number, they will be found to have occurred under the following circumstances, as it respects dates and localities. In the mention of locality, the distance from the nearest case is also given.

Case 1—March 1.—Franklin street, No. 166; $1\frac{1}{4}$ miles from last case.

Case 2—March 2.—Goodchildren street, No. 533; $\frac{1}{2}$ mile from case 1.

Case 3—March 4.—Prytania and Polymnia streets, 1 mile from case 1.

Case 4—March 4.—Erato street, No. 59; $\frac{1}{2}$ mile from case 3.

Case 5—March 4.—Homeless.

Case 6—March 8.—Dryades street, No. 132; eight squares from case 1.

Case 7—March 8.—Goodchildren street, No. 533; in same house with case 2.

The duration, waxing and waning of the epidemic, are shown by the following tabular statement:

February	3	deaths.
March	17	"
April	82	"
May	108	"
June	18	"
July	4	"
	Total—232	deaths.

The houses in which two fatal cases occurred were five. Three fatal cases occurred in one house only, and more than three in none. None of the houses having multiple deaths were contiguous to each other. The greatest localization of epidemic intensity was observed in a part of the city bounded by Claiborne, Baronne, Common and Julia streets. This space is about one half a mile square, and is quite densely inhabited by a population principally colored. Within these limits twenty-eight deaths occurred.

Now, with regard to the influence of any artificial measures designed to prevent the spread of cholera by destroying its germs, in causing the epidemic of this city to have been so mild and short-lived, it is well to mention here the means employed by the Board of Health for disinfecting the abodes and clothing of the sick. The houses, yards, drains and sinks, were sprinkled with carbolic acid. The clothing was soaked in a solution of carbolic acid, one part to one hundred.

I am indebted to the courtesy of the zealous member of the Board of Health, Dr. A. W. Perry, for these facts, and their accuracy is unquestionable. Although they do not explain either the mode of ingress, or of origin, of the cholera poison, they constitute an important matter for reflection and forecast by the medical profession. Shall we hold that cholera poison is susceptible of *de novo* origin in whatever part of the globe the peculiar climatic and geological conditions which favor its development chance to co-exist? Under this belief, we must either deny to the cholera poison a specific germ, or we must accord to this germ the quality of panspermatism, and say that it is everywhere diffused, and only awaits favorable telluric states to awaken it to life and activity? Or shall we admit that cholera germs were transported to this city in some manner quite impossible to be ascertained, and having been let loose at a period of the year not so favorable to their development as the warmer months, their activity and virulence were thereby greatly lessened? The latter seems to be the more reasonable conclusion.

In these periods of human history when, by the aid of steam, travel and intercourse are accelerated and vastly multiplied, we must expect to find all those diseases whose spread is in any manner assisted by human intercourse to have their area of prevalence enlarged, and their outbreaks rendered more frequent and unaccountable through patent facts. That cholera belongs to this category, none familiar with its epidemic history will deny.

In these remarks I have left entirely out of view the theory of cholera clouds passing over the earth. While every experienced observer is ready to admit that cholera germs are susceptible of being air-borne over limited areas, I think that a hypothesis which holds that the earth, in its vast transit through universal space, passes through meteoric "cholera banks," is quite as well supported by history as that theory which teaches that "cholera clouds" traverse seas, and thus diffuse the disease upon remote continents previously uninvaded.

The symptomatology of cholera in this city was, in the genuine cases, strikingly characteristic. I make this statement entirely upon the assertions of my medical confreres. It is probable that fully one half of the profession here did not meet with a case during its prevalence. I belong to this number. The fatal cases, and some which recovered, had rice water stools and vomiting, cramps, collapse, and suppression of urine.

It is a somewhat singular fact, that coetaneously with this epidemic of undoubted cholera, there should have occurred such a general tendency to diarrhœa as was manifested in a very large proportion of the population, and yet that the cholera deaths should have been so few in number. During the epidemic, I visited and prescribed for about seventy patients suffering with diarrhœa or dysentery. One only of this number could, with any degree of propriety, be classed as suffering from the diarrhœa premonitory to cholera. A girl aged fifteen years, living at the corner of White and Terpsichore streets, was attacked suddenly in the night of April 13th, with painless watery purging and vomiting. She had cramps, feeble pulse, cold hands and feet, and shrunken features, but no collapse, or suppression of urine. A powder of calomel gr. j, sulph. morphia gr, $\frac{1}{4}$, was placed upon the tongue and washed down with ice water. The purging was promptly arrested. On the succeeding night the symptoms returned, and the parents, unwilling to disturb me, renewed the prescription and administered two powders. The girl was slightly ptyalized, but made a good recovery.

In all other cases which came under my observation the following symptoms seemed to me to indicate the line of demarcation from choleraic diarrhœa. There was a great deal of abdominal pain, with tympanitic condition of the large intestine; the stools were liquid, but were less in quantity than in Asiatic cholera—were colored, and generally of very offensive odor. In many instances the dejections were mucous, and in a few instances bloody. Purgatives brought relief of pain and cured the patients. I gave calomel to more than half of my patients; castor oil to some; castor oil and turpentine emulsion in some few cases which were attended with an unusual amount of tympanitis; salines to others. There was scarcely an exception to the exhibition of some purgative, which was in almost every case combined with opium; the amount of the opium varied to meet the degree of pain present. After the action of the purgative, I found the patient generally benefited by from two to four doses of five grains each of sulphate quinine. No death, or even dangerous degree of prostration, resulted.

From the commencement, I supposed the epidemic to be purely catarrhal in its causation, and was very slow to give in my adhesion to the assertions of my brethren in the profession, who, having viewed the epidemic from a different stand-point, were firm in declaring cholera to be among us.

No efforts were made to perfect a diagnosis by examining the urine for albumen. In truth, my present convictions are, that in the zymotic affections the presence of albumen in the urine is more valuable as a point of prognosis, than of diagnosis.

Dengue.

A mild form of this disease is now epidemic in this city. It shows the sweeping epidemic character usual to this disease, by including almost the whole population among its sufferers. This remark must be understood as being restricted in its application to the white race; since my practice among the colored is too limited to enable me to speak authoritatively with regard to them. Dickson intimates that negroes are equally liable with whites. During the present epidemic, I have treated four negroes, two of whom were servants in one family, and were sick at the same time with the other members of the family.

Persons who have suffered previous attacks, and those who have had attacks of yellow fever are equally liable.

The attacks are often sudden, although, in a majority of instances, shifting muscular pains, anorexia and malaise announce the approach of the disease. The first positive symptoms are chilly sensations, ordinarily mere "creepy feelings" over the surface, followed by flushings of heat. In two instances violent shivering fits inaugurated the attacks; but both of these patients had been subjects of malarial affections within a few months preceding the dengue. In a few cases, no history of any chilliness or coldness of the surface could be obtained.

Unless reaction was brought about by hot pediluvia, or some form of medication, the sensations of alternate chilliness and feverishness, generally persisted for several hours, in one or two cases they continued for more than twenty-four hours. The febrile movement is never intense, and differs very widely from that of yellow fever, or indeed, from the fever as it usually occurs in Denguè, according to Dickson and other observers. The difference consists in the frequent fluctuations of the pulse and temperature. In some of the worst cases there was well marked fever persisting for two days or more. But even in these cases, there was a lack of steadiness in the febrile movement, difficult to account for. The highest temperature I have noted was 104° 9′. This observation was taken on the evening of the third day in the person of a young gentleman, who the next morning was dismissed from further treatment. It is a common thing for relapses to occur, either before or after the patient is well enough to leave his room. The relapses are sometimes marked by a reproduction of all the symptoms of the initial attack, at other times they imply simply a febrile exacerbation with an aggravation of the subjective symptoms.

The subjective symptoms are about as erratic as the febrile movement. Pain in the head is present in most cases. Its localization is not constant—in some cases being supra-orbital; in others, in the occipital, or parietal regions. Lumbar pain, general muscular pain and soreness, and neuralgia of special nerves, were present to a greater or less extent in every case. One of my patients was affected with impairment of power of co-ordination to such a degree that his gait was difficult and uncertain. In every case, without exception, anorexia exists in the earlier stages, and often persists until after convalescence seems fully established. It is generally associated with complaints of a bitter taste, and oftentimes nausea is present. Prostration of strength and mental dejection are present in almost all cases. The tongue is quite uniformly enlarged, moist, and covered with a whitish coat. The state of the skin is very variable. Generally, the perspiratory process is easily excited and as easily disturbed. Sometimes the spontaneous tendency to perspiration is marked; at other times the skin is dry, but in a great majority of cases the patients direct the attention of their medical attendants to the fact that they break out in "sweats which quickly dry up and leave a slight sense of chilliness." An eruption was present in a few cases only; this was papular in character.

When yellow fever and dengue co-exist, the frontal headache, lumbar pain, and suddenness of the attack, often give the physician a painful realization of the difficulty of making an early diagnosis. I believe, most sincerely, that the admirable observations of Dr. Faget, published in another part of this JOURNAL, will essentially aid this object, in showing the contrast between the usually uniform febrile movement and pulse record of the one, and their irregularity in the other. But another most important diagnostic sign is the difference in the appearance of the skin. In many cases the skin was flushed and the eyes suffused, but in no solitary instance have I found in dengue that sluggish movement of the blood through the superficial capillaries observed in yellow fever, and which is best exhibited by pressing the fingers upon the surface until their imprints are produced, and then observing how slowly the returning blood effaces them. Epistaxis occurred in two or three cases; and in two females (one a negress), a sanguineous discharge from the vagina took place—not being the menstrual period. Three pregnant females were among the decided, and even quite severe cases, without any symptoms threatening abortion. There has been under my care no case in which the arthritic inflammation was sufficient to give rise to any considerable swelling and heat of the joints. In a disease marked by such a degree of pain, and frequently, also, decided and persistent fever, it is wonderful how little tendency is apparent for the occurrence of acute inflammations of any structure whatever. In one instance only have I observed such a complication. This was a case of pleuro-pneumonia of the left side, and yet there seemed to me less than usual indication of involvement of the pericardial and cardiac structures. No case, that I have heard of, has terminated fatally.

My treatment has been quite routine. A preliminary purge by some saline, castor oil, or calomel, or blue mass, I considered desirable, but if called so late in the day that the action of the cathartic would be likely to occur through the night, I preferred to wait until the following morning. After catharsis, and very often before, I exhibited a scruple of quinine and one grain of opium, in either two or three equal doses, generally at intervals of two hours. A hot pediluvium was ordered, and the patient instructed to drink at will of lemonade. If there was much nausea with coated tongue, I gave five or ten grains of calomel; say in as as many as three or four cases. Blue mass ten grains, with a scruple of quinine, given at two or three doses, was a much more common prescription. My constant administration of quinine was not predicated upon a belief that it is curative of dengue in any antidotal or specific sense. But it seemed to quiet the intensity of the pain; to steady the circulation, and to meet all malarial complications. Frictioning over the painful part with Arnica, chloroform liniment, *Eau Sedatif de Raspail*, hot whiskey, or hot mustard water, was very comforting to the patient. In cases where neuralgia of special nerves was prominent, large doses of opium were resorted to. Chloral was useful in controlling the insomnia so often present. I tried in one or two instances to abort the attacks, as we do catarrhs, by a decided dose of quinine and Dover's powder at the onset. The stomach almost surely rejected Dover's powder.

Yellow Fever.

A few cases of yellow fever have occurred in this city. While it is believed that the invasion is too late for a general epidemic to follow, it is not improbable that it may yet prevail with severity in certain districts of the city.

I propose to give in this number of the JOURNAL, a very brief summary of some of the cases reported, in order to set forth the facts with regard to its mode of propagation, and reserve for the November issue, any extended remarks upon the subject.

The bark "Valparaiso" arrived at Quarantine from Havana, June 16th, and after remaining ten days and being fumigated was permitted to come to the city. On the 4th of July, the mate was taken sick and conveyed to the house of a friend in the lower part of the city, where he died on the 8th, having had black vomit prior to death.

E. N., Mate, on steamer "Belle Lee," which was laying at the levee, about three hundred yards from the Valparaiso undergoing repairs; taken sick July 12th; died on the 20th. It is not known whether he had visited the Valparaiso or not.

T. M., was carpenter on steamer Pike for twenty days prior to his illness. The boat was undergoing repairs about thirty yards from the steamer Belle Lee. T. M., was taken sick July 27th—recovered. J. D., was taken sick July 28th—recovered. He was employed in loading bark Valparaiso. S. G., taken sick July 31st, at 506 Rampart; died Aug. 4th. J. E. K., was taken sick July 30th, on steamer Pike—recovered. J. S., taken sick Aug. 1st; died Aug. 5th; had been in the city four months, and worked in the sun about one hundred yards from the Belle Lee.

C. M., taken sick on steamer Pike July 29th; died Aug. 7th. J. M., residing at 178 Levee, taken sick Aug. 6th—recovered.

C. H., No. 58 Seventh street, seized on the 8th of Aug; died on the 14th; had been engaged in painting "Belle Lee."

S. M., taken sick Aug. 9th; died Aug. 15th. Yung Achoa (chinaman) taken sick at No. 10 Victory street; died Aug. 15th, at Charity Hospital. No history. C., 187 Rousseau; seized Aug. 15th—recovered.

J. O'D., corner of Annunciation and St. Thomas, taken sick Aug. 15th; died Aug. 19th.

J. P., died in Charity Hospital Aug. 21st.

T. R., No. 21 Washington street, seized Aug. 17th; died Aug. 19th; had nursed J. D.

J. J. H., No. 19 Rousseau street, died Aug. 22d; had visited steamer Pike. My acknowledgements are due to the Board of Health for their courtesy in furnishing these facts. It will be observed that a considerable number of these cases have evidently derived their infection from the same source. It will be seen further, that the evidence very strongly favors "importation" by the bark Valparaiso. Again, it will be seen that in some of the cases cited, as in some others not mentioned, no history has been obtained of any exposure within reasonable proximity to the supposed foci of infection. My friend Dr. B. Stille, has now under treatment, a patient who was taken sick at her residence, remote from the river, and from any other case. A patient died in the same house late in the season of last year. Furthermore; a number of the cases reported without history as to origin, are from a part of the city in which yellow fever prevailed to a considerable extent last year. Are the germs susceptible of preservation through the winter here, and of being awakened to activity and virulence by the warmth of summer? Whatever stand we may take with regard to this question, or to that which considers the indigenous nature of the disease the facts herein reported, oblige us to concede to yellow fever the *possibility* at least, of being communicable by exposure to the air of infected vessels, houses, or localities, or around the persons of the sick.

Meteorological Report for New Orleans.

TABLE I---JULY.

Day of Month.	Temperature. Maximum.	Minimum.	Range.	Mean Barometer Daily.	Relative Humidity—Mean	Rain fall—inches
1	93	77.5	15.5	30.006	73	
2	93	79	14	30.134	70	
3	92.5	79	13.5	30.165	75	
4	95.5	77	18.5	30.115	66	
5	93.5	79	14.5	30.085	65	
6	97	78	19	30.010	67	.20
7	97.5	82	15.5	29.971	62	
8	98	80	18	29.970	56	
9	94	79	15	30.004	60	
10	95	79	16	29.992	62	
11	90	77.5	12.5	30.005	77	.90
12	88	75	13	29.950	74	
13	92.5	78	14.5	29.979	73	.12
14	90	77	13	38.006	72	.01
15	90.5	77	13.5	30-026	75	
16	91	77.5	13.5	30,032	69	
17	91	78	13	30.040	74	
18	92	78.5	13.5	30.051	74	.05
19	90.5	75.5	15	30.044	73	.04
20	85.5	74.5	11	30.022	79	.05
21	87	75.5	11.5	30.000	88	2.60
22	80	73	7	30.070	93	1.18
23	90	73.5	16.5	30.170	76	.01
24	82	76	6	30.167	87	.20
25	84	70.5	13.5	30.040	79	.07
26	90	72	18	30.022	76	.10
27	89	74.5	14.5	30.072	77	
28	88	77	11	30.079	75	.01
29	88	76	12	30.056	76	.21
30	86	76	10	30.054	91	1.65
31	91	74.5	16.5	30.081	75	.03
Mean	90.48	76.66	13.8	30.046	73.8	Total. 7.43

TABLE II---AUGUST.

Day of Month.	Temperature. Maximum.	Minimum.	Range.	Mean Barometer Daily.	Relative Humidity—Mean.	Rain fall—inches.
1	90	77.5	12.5	30.099	83	1.50
2	91	76.5	14.5	30.085	72	
3	92	76.5	15.5	30.010	77	
4	92.5	77	15.5	30.000	73	.01
5	86	77	9	3o.067	85	
6	88	74	14	30.045	76	
7	84.5	75.5	9	30.024	79	.05
8	89	76	13	30.002	85	.22
9	83	77	6	30.021	89	3.30
10	90	75	15	30.046	85	
11	88	76.5	11.5	30.037	80	.15
12	86.5	75	11.5	30.022	79	.01
13	91	75	16	30.052	74	
14	88	77	11	30.004	87	.10
15	90	75.5	14.5	29,927	73	
16	90	76.5	14	29.922	69	
17	91	77	14	29.980	70	
18	87	76	11	30.010	79	
19	91	75	16	29.989	72	
20	88	78	10	24.949	72	3.50
21	88	71	17	29.954	83	.04
22	87.5	74	13.5	30.001	87	1.00
23	87	74.5	12.5	30.105	86	.45
24	90.5	76	14.5	30.112	71	——
25	89	77	12	——	79	——
26	88	74	14	——	76	——
27	91	74	17	——	75	——
28	—	74.5	—	——	—	——
29	—	—	—	——	—	——
30	90	76	14	——	77	Total.
31	88.5	77	11.5	——	80	10.46

Mortality in New Orleans from June 30th, 1873, *to August 31st, inclusive.*

Week Ending	Total Mortality.	Whites.	Colored.	Yellow Fever.	Malarial Fevers.
July 6......	163	104	58	—	10
July 13.....	200	142	55	1	30
July 20.....	144	99	45	1	11
July 27.....	128	75	51	1	5
August 3...	138	103	35	—	7
August 10..	128	82	44	3	11
August 17..	126	79	44	2	14
August 24..	113	79	34	8	13
August 31..	130	100	30	6	19
Total.......	1270	883	396	22	120

THE

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ORIGINAL COMMUNICATIONS.

ARTICLE I. *Two Cases of Facial Neuralgia (pain of Fothergill) Cured by Resection of Nerves.* M. SCHUPPERT, M. D.

FIRST CASE.—RESECTION OF THE RIGHT INFRAORBITAL NERVE. RESECTION OF THE SECOND BRANCH OF THE FIFTH PAIR OF NERVES, AT THE FORAMEN ROTUNDUM, INCLUDING MECKEL'S GANGLION; RESECTION OF THE THIRD BRANCH OF THIS SAME NERVE. TYING OF THE COMMON CAROTID ARTERY. EXCISION OF THE FACIAL NERVE.

The noted subject, on whom so many surgical operations have been performed, has been once before the reading medical public of this city. A portion of the history of this case was published in the ephemeral bi-monthly Medical and Surgical Journal of our distinguished and illustrious citizen, Dr. B. Dowler. I will therefore condense that part as much as possible without doing injustice to the case as well as to myself.

H. Morris, 31 years of age, from Poland, having immigrated to this country 15 years ago, came to my office in the year 1864, suffering a great deal from neuralgia on the right side of his face. Supposing the pain to originate from his upper molar teeth, he had them extracted, one after the other, but without experiencing any relief from it. Morris pointed out to me the place which he thought gave rise to the pain, as being situated behind the upper molar teeth in the hard palate. Unacquainted then with the formidable nature of the enemy I should have to contend with, it struck me that I might remove the pain by scarifying the outer and inner surface of the posterior portion of the upper maxillary bone. The operation was performed accordingly, and I succeeded in removing the pain for several months, when it returned with all its former severity. It started this time from behind the right canine tooth, which he had also extracted, but, as before, without giving relief. During 9 months the patient had suffered again the most excruciating pain, when he called on me in the earlier part of September, 1865. On the 13th of that month I resected the infraorbital nerve from its egress at the foramen infraorbital to the anterior dental nerve, including the latter in the operation. The only results obtained thereby were a perfect anæsthesia of all the parts of the face under the control of the nerve, and a partial loss of the motility of the corresponding muscles. The neuralgia remained untouched by the operation. Induced by the happy results Dr. Carnochan, in New York, had obtained by the resection of the trunk of the 2d branch of the 5th pair of nerves, and as he stated it in a separate letter to me, years after the publication of the cases, I concluded to have recourse to his operation. By accident I was led to execute the resection not as Carnochan proposed, from below the eye, taking the infraorbital nerve as a leader, but from the spheno-maxillary fossa, a method of operation which up to that time had never been performed on the human body. In order to reach the nerve in that locality, I had as a matter of course to remove portions of the malar bone and the zygomatic process of the temporal bone. The small space in which the nerve was imbedded was enlarged by cutting away a portion of the posterior wall of the superior maxillary bone. Then the nerve was cut through behind the posterior dental nerve, and by a second cut was removed from the foramen rotundum. After the patient had recovered from his narcotism, he did not complain of his former pain, and this did not return even once during the two subsequent months the patient remained here. Morris then left for Texas, and I published the case as an accomplished cure! Never was I more cruelly deceived. The poor man was doomed to suffer still more from his old tormentor. Returning at the end of May, 1867, from Texas, he stated to me that during the last two months he had again suffered a great deal of pain, and that he had hardly taken a meal without the most intense suffering. The seat of his ailment had not moved from its old hiding-place. The paroxysm started as before, from the right hard palate, spreading from there up to the eye and temple. The most remarkable incident was the perfect restoration of the sensibility of the parts, which sensibility had been destroyed by the resection of the infraorbital nerve in the 2d operation. Patient felt the point of a needle when it came in contact with the nose, eyelid, or upper lip, and his own statement went so far as to assert, that with the restoration of sensibility pain had also returned. I was aware that, notwithstanding the two preceding operations, a portion of the nerve had been left behind. In the first of these resections I had cut off the main nerve just behind the anterior dental, and in the other behind the posterior dental nerve, not thinking that the rest left would be of any consequence. I now began to be alarmed, thinking that the returned pain might be in connection with that portion of the main nerve, and that the oversight, in having allowed this to happen, was responsible for the man's renewed sufferings. Though not having much confidence in the regeneration of resected nerves, still the statements of veracious authors to that effect made me doubt the propriety of my denying its feasibleness. I therefore resolved to remove that stump.

On the 2d of June the 4th operation was performed. This time I had no other choice than to adopt Carnochan's method. In the middle of the floor of the orbit I found the nerve stump, with branches attached to it, belonging to the middle dental. After the division of these dental branches the main nerve was easily pulled out; measuring still 15 *mm.* in length, but with no new-formed nervous matter, either in front or behind it. To assure myself that this time nothing of a nerve should escape destruction, I introduced, whilst the patient was still under the influence of chloroform, the actual cautery, which I pushed forwards beyond the posterior wall of the maxillary bone, the eyeball being well protected. I had, made the incisions through the integuments in the old cicatrices resulting from the 2d operation. While in the former operation the bleeding was small, it was this time considerably increased, the cicatrices being very vascular. The floor of the orbit from which I had removed the thin lamellous bone, to free the nerve, was by the means of the formerly preserved periosteum not only restored, but considerably thicker. After the wound had been closed, with the exception of its lowest part, in which a drainage tube was inserted, the patient's whole frame began to tremble and lasted nearly an hour.

This having ceased, the patient awoke and complained of an intense pain in his head (from the application of the cautery) which lasted four hours. On the next morning the patient's face was considerably swollen and he complained of the old evil customer, who had renewed his torture in his former field of action. The operation had had an entirely negative result; neither was the pain lessened, nor was a change to be observed in the restored sensibility of the face. I will here remark that the sensibility of the face is due to the the infraorbital nerve. That the posterior portion of the 2d branch of the 5th pair of nerves stands in no relation with it, has been proved beyond doubt by my operations. On the 19th of June, the suffering of the man had become so unbearable that he actually begged for another operation. The region of his pain had become extended, involving the 3d branch of the Trigeminus, and here the pain was so intolerable as even to throw the former suffering in the background. The least touch of the lower lip or the chin induced a paroxysm of insufferable intensity. I resolved therefore to excise a portion of this nerve.

On the 19th of June the knife was called into action for the 5th time. The patient being under chloroform, an incision was made beginning below the lobe of the left ear, and carried down alongside the edge of the lower maxillary bone to the length of 7 centimetres. The appendices of the muscles were dissected off from the bone and taken up in a hook. Two incisions were then made with the saw on the inner surface of the bone, dividing it across to two-thirds of its thickness; one incision at the angle of the lower maxillary, the other below the condyloid process. The piece between the cuts was removed with hammer and chisel. Artery and nerve were divided, and of the latter a piece measuring 2 centimetres in length resected. The artery was ligated. After bleeding had ceased the wound was closed by sutures, leaving the lower portion open for drainage. When the patient rallied from the anæsthetic condition he complained of a tormenting pain. His body, at short intervals, was moved with convulsive shocks which lasted several hours, when the intensity of the pain subsided and the shocks occurred at longer intervals. At night I gave him 10 grains of quinia mixed with 2 grains of opium, but he slept only a short time. On the next day I could touch the lower lip and chin without provoking the former paroxysm, but pain in the upper maxillary, though diminished a little, remained as before. Under the continued treatment by large doses of quinia with opium the patient recovered from his suffering by and by, and left the city again attending to his business.

The following two years I saw Morris but once, when he stated to me that he had considerably improved, though the pain had never left him entirely. In September, 1868, returning from Texas he appeared again as a supplicant for relief, his old tormentor having reappeared with unrelenting severity. Whilst the pain in the region of the 3d branch of the Trigeminus had entirely disappeared, I had reason to think that the resection of the 2d branch of the 5th pair was complete, and that I had to deal here with another nerve. That no other than the facial could be the nerve, with which I had to contend, was beyond doubt, still the thought was repulsive, that whilst I had been operating all the time on the 5th, the 7th nerve should have been the source of so much suffering of our poor patient. A book which fell at that time into my hands, in which the distinguished surgeon Nussbaum in Munich, spoke so highly of the tying of the carotid artery as the non plus ultra against facial neuralgia, was for that reason the more eagerly believed, and so I made the proposition to my patient to tie the carotid. The man was willing to submit to any operation, "and if," as he said, "his head was to be cut off," if he only could find relief from his suffering.

On the 22d of September, 1868, the right common carotid artery was tied in the presence of Drs. Barnes, Geutebruck and Schmittle. The patient was under the influence of chloroform. No blood was lost but from the cut through the skin, and the operation did not last longer than five minutes. Not much chloroform had been used this time, and the patient left my office shortly afterwards, walking home a distance of half a mile. The operation had not made a deeper impression on the sufferer than having a tooth pulled, nor had it otherwise the least effect on the man's pain. I was watching him closely during the next seven days, anxious to observe an abatement of his suffering, but without avail; the quinia with opium failed this time to give relief, and the patient was anxious to get rid of his distressing condition, and so did I play out my last trump—the resection of the facial nerve, the noli me tangere of the writers on surgery.

7th operation. On the 29th of September, the patient lying on a reclining chair at my office, chloroform was administered. Doctors Barnes, Geutebruck and Schmittle were again present.

After the lapse of about five minutes, such alarming symptoms ensued, that chloroform was dispensed with. The body of Morris was trembling; the extremities, and more so those of the left side, became attacked with clonic spasms, and of such an intensity, that the man had to be fastened in his chair. This condition lasted a considerably long time. After the convulsions had ceased, the anæsthetic was again, but cautiously administered, till the narcosis had become complete. I then made an incision at the lower part of the mastoid process in the direction of the angle of the lower maxillary bone, measuring 5 centimetres; the platysma muscle was divided, the lower part of the parotid gland dissected off and kept out of the way with a hook. With the assistance of two blunt forceps and the index finger I arrived at a depth of 6 centimetres, but the room being too narrow to separate the nerve at the stylo-mastoid foramen, I made a second incision at a right angle with the first cut, passing the lobe of the ear and ending near the articulation of the lower maxillary bone. The cut went through a portion of the parotid gland. The wound being now sufficiently large, I began to look for the nerve. I felt in the depth of the wound the weak pulsation of an artery (carotis externa), placed two ligatures around the vessel and divided it between the ligatures; a small quantity of blood issued from the lower, but more from the upper end, yet without the arterial jerk, the bleeding resembling more that of a vein. Both ends were immediately secured. In searching my way between the mastoid and styloid process, I felt the latter distinctly. In separating the muscular attachments I met with copious bleeding, which could only be stilled with great difficulty and a loss of valuable time. This accident, which was caused by lacerating a venous plexus with the forceps, retarded the progress of the operation considerably, and finally was the cause that the nerve could not be isolated, since during the progress of the operation bleeding was renewed. To cut the Gordian knot, I then at once took a pair of scissors and cut out the surroundings of the styloid process. In order to be assured that I had not missed the nerve, I laid it bare in the cross incision, where a sufficiently large portion of the plexus anserinus was resected. It happened here that when the temporal artery was divided, the same phenomenon appeared as narrated in the case of the external carotid artery, that blood came only from the upper end. We find the explanation of this in the ligation of the common carotid and the communication of her branches with those of the carotid of the other side in the skull. The operation lasted a considerably long time, in consequence of the different accidents spoken of; nearly three-quarters of a pint of chloroform had been used. The patient, yet in a narcotic condition, was placed on a mattress at my office and watched closely during the night. Awakening, his speech was unintelligible, his tongue was in a state of paresis, swallowing was equally impossible, and a suppression of urine had set in; a catheter introduced into his bladder yielded none on repeated trials. The patient vomited a great deal with painful efforts and under convulsive motions of the muscles of the whole frame. During the next morning the man recovered his consciousness gradually, and began to talk sensibly. The twitchings of the muscles of his face ceased, and he could swallow a little water at the time. It was soon observed that his left extremities were in a state of complete paralysis and insensibility. The pulse was small, 64 beats, but the pain was gone. In the following night, after the administration of stimulants, the pulse began to rise; the extremities, which had been cold before, became warm; secretion of urine reappeared. On the next day the patient was carried home. On the 6th of October all the ligatures, including that of the common carotid, came away. Patient felt for the first time the point of a needle held against the lower extremity, but not on the upper. He complained of a pulling sensation in his thigh; motions could not be executed with either extremity, while all the muscles responded to the electric current. October 10th—sensibility had increased, but pain in the thigh was still present. Sleep and appetite were good.

October 20th. With this day the regular daily application of the electric current commenced, from the effect of which the lower extremity rapidly improved, but on the arm it had no effect, with the exception that the fingers became more movable.

On the 15th of December the patient began to walk in his room with the support of a stick, carrying the arm in a sling.

If the resection of the facial nerve had had any effect on the man's features, it had rather improved them. No such disfiguration was visible as had been apparent after the resection of the infraorbital nerve. At the end of the month, Morris changed his location, going to a brother in Texas. His old enemy had not reappeared and, according to my last enquiries, five years after the operation, the neuralgia seems to have been conquered forever.

Second Case of Neuralgia of the Face. Resection of the Right Superior Maxillary Nerve at the Foramen Rotundum, including the Destruction of Meckel's Ganglion. Cure.

J. Kaufmann, 50 years old, was born in France, but lived for the last nineteen years in this country, He was, like Morris, a Jew, and a peddler in dry goods. During the last eleven years he had suffered the most excruciating pain in the right side of his face; so much so, that he had been incapable for any kind of business, and had been under the cruel necessity to accept the support of himself and his large family by the known benevolence of his Jewish brethren.

Kaufmann described the pain beginning near the right corner of the mouth, from which it spread successively over half the face, including the temple and those parts under control of the inferior orbital nerve. Neither mouth nor temple could be touched without producing a paroxysm of pain. The patient brought the origin of his suffering in connection with a gumboil on the right upper alveolar process; at least, it was after the disappearance of this that his ailment had set in. Believing at first its seat to be in the teeth, he had all of his molars successively extracted, before he became aware of his error. For the last months the pain had extended to the other side of his face, but was not of the severe character as that on the right. He could not eat or drink without suffering, even a draft of air bringing on a paroxysm of pain. After having tried "doctors and remedies" without any material benefit, he came to me and applied for an operation.

On the 19th of May, in the presence of Drs. B. Dowler, S. Choppin, F. Loeber and J. Schmittle, the patient was seated at my office and brought under the influence of chloroform. I intended to resect the 2nd branch of the 5th pair at the foramen rotundum by a modification of Carnochan's method. The lower eyelid was raised and fixed with three fingers of the left hand and an elliptical incision made, running parallel with the lower ridge of the orbit, from corner to corner of the eyelids. At the centre of this incision the knife was inserted again and the integuments divided to the bone in a perpendicular line, measuring

5 centimetres in length, and ending at one centimetre distance from the corner of the mouth. The two flaps thereby formed were dissected from the bone, including the periosteum, and held back by hooks. Bleeding was considerable and it took some time to arrest it. The periosteum of the floor of the orbita was then detached from the bone and with the eyeball included, raised up by a curved spatula.

Two further incisions were made with a saw through the edge of the orbita, two centimetres distant from each other, having the infraorbital nerve in the middle. This piece of bone was cut out with hammer and chisel, leaving an opening large enough to introduce a finger. The infraorbital artery being cut through, ligatures had to be applied. The nerve was now liberated from its bony sepulchre in the floor of the orbita, by using a sharp chisel. When I had reached the posterior wall of the antrum of the upper maxillary bone, profuse bleeding again ensued, which had to be checked with compression and ice. Holding as a guide the facial end of the nerve with a pair of forceps, I broke with a chisel through the posterior wall of the antrum, making a sufficiently large opening. After having passed through the pterygoid muscle into the spheno-maxillary fossa, the chisel came again in contact with bone at the base of the skull. This was the most difficult part of the proceeding, since the tendinous portions of the pterygoid muscles were much in the way for the exact performance of so delicate an operation. With a great deal of exertion and perseverance the nerve was finally cut with a blunt pointed bistouri. In order to arrest the bleeding, which at the last step of the operation began anew and to destroy the neighborhood of the nerve, Meckel's ganglion, I introduced the hot iron. The nerve cut out measured unstretched 5 centimetres in length. Half an hour later, when all bleeding had subsided, the wounds were closed; the transverse cut with interrupted silk sutures, the perpendicular with insect needles. In the lower part a drainage tube was inserted, but there existed a communication with the mouth, and most of the secretion was discharged that way. Cold water dressing was applied. After the patient had rallied from the effects of chloroform he became really furious, so that it took some men to control his wild ravings. When consciousness was perfectly restored, he complained of a severe pain in his head, which was unquestionably produced by the hot iron. (From two such instances I have experienced, I would advise never to use the actual cautery in places so near the most delicate portion of the brain, since it might prove fatal.) Patient was brought home towards night and an opiate administered. During the night he became more tranquil and slept even some hours, still he suffered much in his head, which lasted several days. The neuralgia had not left him entirely, but had become so mild that it caused great relief. The paroxysms, when they appeared, lasted only a few seconds and returned at larger intervals. The sutures were removed on the third day, the wounds having healed by first intention. The swelling of the face, which had set in the day following the operation, disappeared gradually and with it even more of the pain. The secretion from the opening in the mouth ceased in the third week.

July 1st. There is only a small cicatrix visible, the right half of the upper lip hangs down a little more than the other, and has lost, to some extent, its motility. The anæsthesia of all the parts supplied by the infraorbital nerve is still extant, but the neuralgia has almost disappeared. It starts occasionally from the corner of the mouth, going up to the lower eyelid, above which it does not extend as in former times. Whilst sleep had become a stranger to him for years, he now rests well at night and his meals not being further disturbed by suffering, have restored the man's physical frame. When questioned about his condition, he said, that he would rather undergo the operation ten times, with all his subsequent sufferings, than live one day with his former torture! The patient being the only proper judge in such matters, that answer decides the value of the operation. Kaufmann has moved from here into the country, but so far as my latest information goes, to within a couple of months from writing this article, his former enemy has, after a lapse of seven years, never once returned. I think I have hereby acquired the right to pronounce this a successful operation

Epicrisis. The case of Kaufman not offering much to explain, I will now try to elucidate some points in regard to the disease and the operation performed on Morris. I will next say a few words in reference to the spasms, which were observed distinctly in two of the operations, and also of the subsequent hemiplegia. What was their cause? We know the main effect of chloroform consists in producing anæmia of the brain, which can end even in death, if not soon remedied. I have observed, during a practice in this city of twenty-two years, three cases where, beyond a doubt, death had taken place from chloroform, and which were restored to life by reversing the position of their bodies, head downwards, so that the blood was enabled to run into the brain in a mechanical way, by the impetus of its own weight (vide article of death by chloroform). When we further take into consideration, that half of the normal quantity of blood, the brain commonly receives through the carotid arteries, was cut off by ligating one of them, whereby the brain was deprived of one-third of all the blood it contains, we cannot be astonished over the result. The permanence of the normal circulation of the blood can make it possible only that the nervous centres are kept in a functional activity; consequently an interruption of the measure of nervous activity, which presides over the muscles, from the seat of the great nervous centres, must have as a natural consequence, an entire cessation of the normal functions of the muscles, it will cause spasms, which later give way to paralysis. Shuh, a celebrated German surgeon of Vienna, did once observe paralysis of the right side of a man follow ligating of the left common carotid (in consequence of a wound of the internal maxillary artery). Speech was interrupted, the muscles of the right side became atrophied, and after a lapse of six years, paralytic. It is said that in cerebral hemiplegia, originating in the central motory ganglia, only the muscles of the extremities and of the face of the other side of the lesion would be affected, but not the muscles of mastication, of the palate and of the tongue. In the case of Morris the latter were also affected, though in a light manner. Our patient during the first twenty-four hours could not move his tongue, swallow, nor speak.

I now call the attention to the ligating of the common carotid artery, as a remedy against facial neuralgia. The reason which, after so many operations with a negative result, induced me to choose this operation was, as already stated, the high eulogy this "*panacea*" received from a surgeon of high standing in the profession. I will not deny, that notwithstanding this recommendation, I had a certain distrust in it, which was based upon my observations, that in all cases of facial neuralgia the pains became less severe under a conflux of blood to the affected parts, they being in a state of hyperæmia. My experience of the negative character of this operation, in cases of facial neuralgia, has also been made by others. Professor Podraski, in Vienna, published in 1871 a case of facial neuralgia of the left side, in which, before he had recourse to the resection of the superior maxillary nerve, he also tied the common carotid. The pain in the face did not subside, but became even more severe. Professor Nussbaum in Munich, ought to take these cases in consideration, in speaking ot his "panacea" in facial neuralgia.

Let us now consider the resection of the facial nerve and the final cure accomplished through it. If nothing could be found in advance to speak in favor of this operation, the result obtained and the reasoning which led to the performace of the operation claim by right a consideration, That, after the entire removal of the superior maxillary nerve, without a regeneration of any kind following it, the pain could only be caused by the facial nerve, no doubt could be entertained. The facial nerve has been considered as a sensory nerve, till Bell and Magendie proved that it was exclusively a motor one, which view is held to-day even by anatomists and physiologists of distinction. It is nevertheless my opinion, that only those physiologists are correct who consider the nerve a mixed one. Its connection with the petrosal nerve (nervous petrosus superficialis major) can be demonstrated with the knife. It is connected by anastomosis with the inferior maxillary nerve through the auriculo-temporal nerve, and also with the small petrosal nerve, coming out of the otic ganglion and communicating with the facial near the knee of the fallopian canal. The nervi zygomatici and buccales of the 7th pair ramify with the nerves of the same name of the 5th pair, going to the same muscles. The branches of the facial nerve, like their utmost ramifications. form anastomoses with the ramifications of the superior maxillary nerve, going to the muscles and vessels of the face. Can we, after this, in the least doubt the nature of the facial nerve? Sensibility, present after a complete resection of the superior maxillary nerve, can only be explained by a vicarious action of the facial nerve; and why should not such a mutual support exist between those nerves in a healthy activity? Such an alternate function, the substituting of one nerve for the other, is not rare; we find it to exist between the sympathetic and 5th pair in their capacities as nerves of excitation and depression. The pathological conditions of certain nerves and their physiological actions are to a great extent unknown to us. Are not some of our best physiologists in doubt, wheter the sense of taste belongs to the glossopharyngeal or the lingual? Claude Bernard believes that the two first thirds of the tongue belong to the lingual, the last third to the glossopharyngeal. Why might there not exist such a partnership between the 5th pair and the facial? The facial nerve has been called, par excellence, the nerve of physiognomy, but it cannot be doubted that the trigeminus has also a word to say in this distribution. I will only recall the mentioned disfiguration of the face of Morris after the resection of the infraorbital nerve, whilst the resection of the facial nerve did not show the least alteration in the expression of it. This proves that the trigeminus stands in as near a connection with the physiognomy as the facial. The statement of Wagner of Konigsberg, that a diseased nerve could produce pains in the track of another is, after the foregoing, easy to be imagined, and the more so when we consider in addition, the manifold anastomoses of nerves among each other, to say nothing of the connection in their last peripheric terminations, of which we know absolutely nothing. If it is necessary to furnish still more proofs of the close connection between the trigeminus and facial, we could mention that in facial paralysis the galvanic current, when sent through the paralyzed muscles, will produce reflex symptoms, like laughing cramps, in the track of the 5th pair. Of the ensuing paralysis of the muscles of the face and the change in the expression of it in a person, whose facial nerve has been cut, which is mentioned as one of the greatest objections to that operation, we have already spoken. Claude Bernard asserts, that by a division of the facial nerve in animals, the physiognomy of the side of the face corresponding to the divided nerve will change; that in men the opposite side will be disfigured, and he explains this through the loss of the tonus of the muscles of the side operated upon, by which loss of the tonus the antagonistic muscles will act more forcibly. The truth of this notion is not sustained by the case under consideration. It seems to me, as if in the case of Morris, a total reversion of the physiological functions of the two nerves had taken place, so that the facial nerve represents a nerve of sensibility, the trigeminus one of motility. Of the fact that the physiognomy of a person, whose facial nerve has been divided, will not at all times show so great a disfiguration, an analogy may be found in the division of the 1st branch of one trigeminus. Here the secretion of the lachrymal gland of the corresponding side is not so visible as it ought to be, because the excitation of the nerve at the opposite side acts by reflex upon the gland of the wounded side. What is said of the trigeminus may in some may be also admitted of the facial.

From what has been said of the case under consideration, I am constrained to think, that the final cure of the neuralgia of Morris was due to the resection of the facial nerve. From this fact the question arises in cases of an extended facial neuralgia, after a resection of the infraorbital nerve should not have accomplish the desired result, whether a resection of the facial nerve might not be indicated. In the execution of this operation, a partial resection of the plexus anserinus might probably be sufficient and obviate the more difficult resection of the nerve at the stylo-mastoid foramen. The excision of the facial nerve will find a further support in the history of resections of the infraorbital nerve, where the negative results have not been altered, even by resecting the 2d branch of the 5th pair at the foramen rotundum.

Concluding, I will say a word about the much ventilated regeneration of resected nerves. The statements of Wagner in this respect are of a doubtful character. It has happened that fibrous trabeculæ and the elements of cicatrices have been taken for nerves. An error committed once may happen again. I have no other explanation on hand. I myself have never seen it happen after the most diligent inquiries.

Cures of facial neuralgia by resection of the infraorbital, or the superior maxillary nerve, can only be considered accomplished after a considerable lapse of years. Many surgeons, and mostly such, who have performed the operation for the first time, fascinated by the brilliant result, can hardly await the time for the publication of their illusive success. Not unfrequently the unhappy sufferer returns after the publication of the case, with his old misery, but his history has been closed with the words, "the patient was discharged fourteen days after the operation perfectly cured; we have heard nothing of him since." I will therefore caution against untimely publications of such cases in order to be spared an error, into which I fell myself in publishing Morris' case as a cure, after the resection of the superior maxillary nerve, when in fact the patient had yet to submit three times to the merciless knife.

ARTICLE II. *Resuscitation from Death caused by the Inhalation of Chloroform.* By M. SCHUPPERT, M. D.

The views of the cause of death by the inhalation of chloroform are manifold. Some writers assert, that death is occasioned from the blood being poisoned by the absorption of chloroform; others explain death by a direct action of the chloroform on the nervous system, whereby the irritation caused by the vapors of chloroform interrupt respiration, causing apnœa and a cessation of the action of the heart, by involving the lower branches of the vagus. Sudden death is further interpreted by the action of the anæsthetic on the pulmonary arteries, in producing their contraction; the right heart being over-filled with blood and unable to transmit the same into the pulmonary arteries, paralysis of the heart would ensue. Death is also considered to be the sequel of an overloading of the blood with carbonic acid.

The opinion that death is caused by paralysis of the heart (cardiac syncope) originated, according to Sanson, with Brown-Sequard, being supported by Dociel, till Scheineissen proved that this view was untenable. Scheineissen showed that in animals the chloroform produced an alteration of the heart's action, after a division of the vagi. Even after a division of the spinal cord in the cervical region, and the sympathetic, the heart's action was enfeebled by chloroform. Scheineissen therefore comes to the conclusion, that chloroform has a special action upon the musculo-motor system of the heart. He advises to "dilute chloroform with equal parts of absolute alcohol, to restrain its volatility and powerful action at any given moment and to deprive it of its danger as a direct cardiac depressant." The same result will be obtained by administering chloroform under a sufficient supply of atmospheric air. If greater security is obtained, as asserted, by mixing it with alcohol, this may be caused by the alcohol acting as a stimulant on the brain, which action induces many to give with more propriety a dose of whisky before the administration of the anæsthetic. For my part, I am opposed to all mixtures of chloroform, be it with alcohol or ether, and for the simple reason that these materials have a different boiling point, that of chloroform being 142° F., of ether 95°, of absolute alcohol 173° F. In a mixture of chloroform with ether, we will have to ascribe the effect more to the ether, and in an alcoholic mixture to the chloroform. Besides, the great difference in the physiological action of these materials, it is clear, that the administration of a mixture of them, rests upon an innocent ignorance.

B. W. Richardson, to whom we are indebted in a great measure for our knowledge of different anæsthetics, assumes four different modes of death from chloroform, and according to these, four immediate causes. (I must refer the reader to the publication of his singular ideas in the *Medical Times*, England.) In his third mode of death, he says: "The heart and respiration will cease together, but before the heart ceases, it will give us the intimation that it is about to stop, by one important sign—it will give an intermittent stroke. This mode of death would very often happen, if in every operation it was necessary to carry the insensibility further. Fortunately this is not the case, for consciousness fails before the failure of the muscular power, and when there is unconsciousness we can proceed with the operation at once." It is *not* unconsciousness which in many operations induces us to cease the administration of chloroform, but just the failure of muscular power. As long as the latter has not given way, many operations, for instance in the mouth, could not even be thought of. In operations which require much time for their execution, I have continued to administer chloroform even after muscular power had ceased to exist, without having ever met with an unlucky accident. "In all the four modes of death from chloroform," says Richardson, "we find disturbances in the pneumogastric and sympathetic as the real cause of death. Chloroform, when it kills, kills not necessarily by its action on the muscular structure of the heart, but by its influence on the nervous mechanism of the heart. In every case of death from chloroform the cause of death is excitation, either of the motor or of the controlling nervous mechanism of the heart." *Non sequitur!*

The question in the administration of chloroform, whether it should be given slowly or rapidly, Richardson decides in the following: "The rule, from experience, is not to induce slow narcosis, but having felt the way in the first or second minute of administration in the adult, to push quickly on to completion, in which method, if the body is not surcharged with chloroform, the danger is comparatively small." In the administration of chloroform, I am of the opinion of J. E. Ericksen: "A considerable amount of practice and experience are required to enable a man to give chloroform well. Some acquire the necessary skill more easily than others, but no amount of care can make up for the want of a certain amount of practice." How long we ever continue the administration of chloroform, we ought to be careful that a sufficient quantity of atmospheric air is mixed with it, and do not mind if thereby even half the chloroform should be wasted.

In reference to resuscitation, when life seems to have ceased under chloroform, Richardson is of the opinion, that the only successful plan consists in "a careful, delicate but steady artificial respiration, by a kind of double acting bellows" (of his own invention). He says verbatim: "We know of one process which may succeed, and that if it do not succeed, we know of none other that can take its place. That process is prompt artificial respiration." Richardson does not think much of the use of the galvanic current, which some surgeons of late esteem so much, that they advise to keep an apparatus always on hand. Richardson by his experiments on animals draws the conclusion, that with our present knowledge of the galvanic current, it would in the majority of cases more effectually promote death than restore life. "When used as it is commonly used, with the object of exciting prolonged contraction of the muscles," he says "it is positively mischievous. In letting the current through the heart, the heart flaps and stops the ventricular systole." By his artificial respiration he believes, from his experimental data, that at least one in every three or four of the cases now ending fatally under chloroform, would be saved.

During a space of twenty-two years, after more than a thousand administrations of chloroform, on men of all ages, of the most different physical structure and in a great variety of pathological conditions, it has happened not more than three times in my practice, that the narcotised subject died to all appearances; that is, respiration had ceased, the heart had stopped beating and the tonus of the muscular fibre had become extinct. One of these cases was a woman of a robust constitution, who was to be operated upon for a lipoma on her back. Death set in soon after the operation was begun. One ounce of chloroform had been used. The other case was a boy 7 years of age, who had put a glass bead into one of his ears. Before the instrument for extraction had been introduced into the ear, my assistant Dr. Schmittle exclaimed "the boy is dead." Respiration and the heart's action had both ceased at once. Not more than half an ounce of chloroform had been administered. The last case was that of a barber, 22 years old, who suffered from Strabismus, for which he was to be operated upon. The patient died during the operation, about two ounces of chloroform having been used. All these patients were free from any disease of the heart and with the exception of the named ailments, nothing of a pathological nature had been observed upon them. The earliest of my cases happened in 1864, it was the boy with the glass bead in the ear. The other cases happened two or three years later, the Doctors Geutebruck, Loeber and others being present. The method I adopted for the resuscitation of the dead subjects, consisted in reversing the body. I either hung them up by the feet, or laid them over a bed or table, so that the greater part of the body with the head hung down. In that position artificial respiration was also tried. In the last of the mentioned cases five minutes had passed before we observed the first natural inhalation of air. All the cases recovered. Two of them as I firmly believe, exclusively by the position in which they were placed, without the help of artificial respiration. These cases proved my opinion to be correct, that in cases of death from chloroform, the primary cause of the cessation of the heart and respiration rest in the anæmia of the brain. The idea of explaining death by the impregnation of the blood with carbonic acid will not enter my head. By the position into which I brought the dead bodies, the blood could certainly nct be changed in its composition, but the brain would thereby receive blood, impelled by its own weight to flow into it. That blood, in order to revive the nervous centre, must be arterial, need not be argued. The weak attempts of artificial respiration in two of the cases, were equally incapable of changing the composition of the blood. If Richardson considers artificial respiration the only means of resuscitation he is mistaken, and if he in his attempts to revive the dead, succeeds only once out of three cases, his method is unquestionably inferior to the one mentioned, which I claim as my own, till the contrary has been proved.

In the *Wiener Medic. Wochenschrift*, Nro. 49, 1871, we find the following: "Dr. J. D. Brown (*British Medical Journal*) is of the opinion, that death from the inhalation of chloroform and other anæsthetics will always ensue from paralysis of the heart, caused by the blood being overcharged with carbonic acid. He is opposed to artificial respiration, pulling out of the tongue, etc., as being unsuccessful and a loss of time, but he recommends to lay the patient in such a manner, that the head becomes the lower part, in order to obtain the flowing of a remnant of arterial blood from the left heart to the brain." Brown thinks and justly, that the heart could be induced to further action only through the brain. He mentions 5 cases where the pulse and respiration ceased under the narcosis and where all the patients came to life again by adopting my method. Though I do not agree with Brown in reference to the mode of death, from reasoning before mentioned, that death can not be explained by a paralysis of the heart from an overcharge of the blood with carbonic acid, a conception difficult to explain, still I am glad to find in his cases and the result of the method applied, a support of my views. The critic of the *Wiener Medic. Wochenschrift* can not suppress his scepticism in saying, "The effect of the method of Brown does not sound very credible, but nevertheless it might be tried, since the remedies we possess in regard to the named incidents are not very numerous." Oui Monsieur le Referent, "Le vrai n'est pas toujours le vraisemblable." The King of Siam, when once told by a Dutch traveler that in Holland at certain seasons of the year, water became so solid that an elephant might walk over it, took the traveler for a liar, though he had up to that time taken him for a man of veracity.

Supplementary to the different methods I have discussed, it may be of interest to mention the views of some other authors on the resuscitation of the dead from chloroform.

Onimus and Legroo, in a lecture held before the Academy of Paris, advise the use of the galvanic current. They say, that in all cases where delay and a cessation of the beating of the heart and of respiration had taken place, without an alteration of the blood, the continuous current would deserve the palm of all remedies yet recommended. They introduce the negative pole of a Remack's battery of 20 elements in the mouth and the positive into the rectum, till respiration is properly restored. On the other side, these gentlemen cannot condemn too severely inductive electricity, considering the same as the best means to bring to a perfect stand-still a heart, which through the action of the anæsthetic, has already been enfeebled; effecting thereby that, which it has been our endeavor to avoid. These gentlemen endorse the use of the galvanic current after experiments made on animals. It has been of late also effectively tried on man, contrary to the opinion of the celebrated Richardson of anæsthetic fame.

Dr. Baillie of Calcutta asserts, that no remedy could be found, on which he might rely so much for resuscitating a narcotised person from syncope and to revive respiration, than by introducing a lump of ice into the rectum.

There is the good in all these different "highly recommended" methods that they can be employed at the same time, even with an icicle in posterioribus, without interfering with each other, if the operator should not be satisfied with the simple procedure proposed by me.

ARTICLE III. *Galvanocaustic.* By Y. R. LEMONNIER, M. D., Visiting Surgeon, Charity Hospital, New Orleans.

[*Continued from September No*]

Writing for a journal, our space is limited, and we have to condense our subject. The readers of the JOURNAL who honor us with a perusal of this paper, and who take an interest in the subject, are referred to the following works for more complete and interesting details:

Die Galvanocaustik, ein Beitrag zur operativen Medicin: Breslau, Novembre, 1854. By Dr. A. Th. Middeldorpf.

Archives Générales de Médicine; 1852 ou 1855. De la Galvanocaustique. Extrait par le Dr. Axenfeldt.

Traité des Tumeurs, par Paul Broca; chapitre De la Galvanocaustique. Vol. i: Paris, 1866.

De la Galvanocaustique. Thèse de Strasbourg, No. 73, 1868. Par E. H. Collin.

OF ITS USE.

Galvanocaustic to-day has been employed in almost every description of surgical case. Amputations in young subjects are said to have been performed. We have made several operations with our battery, in this city, two of which are published below.

Case I. Hemorrhoids—Extirpation with the Galvanocaustic—

Cure.—Theodore McLeod, æt. 36 years; native of Scotland; in America 22 years. Hotel Waiter. Entered my ward, Charity Hospital, September 1st, 1872, suffering from piles.

Antecedents.—Has been suffering from internal, bleeding hemorrhoids for the last ten years. Since ten days they have become very large and very painful. Never before were they as bad as they are now. Has often lost blood, and at times in great quantities. Bathing parts in cold water is the only treatment he has ever undergone. His general health has constantly been bad since suffering from the piles. When not costive, would not suffer. About ten days ago, being constipated, his piles came out, and since then he has been unable to push them in. Last operation from bowels seven days ago.

Actual State—September 5th, 1872.—The man is very anæmic. General health bad; dyspeptic; has thrown up all he has eaten since his admittance. No rest on account of pains at fundament. Here we find some hemorrhoidal tumors size of a hen's egg, gangrenous in several places, and completely obliterating the anal orifice. The finger introduced into the rectum feels that they are encircled by the sphincter muscles. This exploration is excessively painful.

The tumors are situated on the sides and front of the anus, with their origin immediately above the sphincters. Though touching each other posteriorly, they are separated by a portion of healthy mucus membrane and skin. The three largest tumors, each almost the size of a pigeon's egg, are situated, one to the left, the other two somewhat smaller, to the right, with intervening small ones.

The patient being very anæmic, his general health quite bad, fears of a hemorrhage from the gangrenous portions existing, the excision of these tumors by the galvanocaustic is proposed and readily accepted by the patient.

Operation.—September 5th, 10 A. M.—Performed with the assistance of Drs. Alpuente, Tricou, F. B. and C. A. Gaudet, De Roaldes, jr., R. R. Hopkins and others, and many medical students. The patient chloroformed, we cut with the galvanic knife the largest tumor and the surrounding small ones, on the left. Then, substituting the loop for the knife, it is placed *cold* at the base of the tumors on the right, and tightened down. Heating it to a dull red heat, these are severed, and the same thing is repeated for the tumors in front. We took care not to cauterize that portion of healthy tissue which was situated posteriorly, in order to prevent a stricture of the rectum during cicatrization.

[N. B.—It is proper to state here that this was the first operation performed with this battery, which was new, and unlike new brooms, did not work very well. The following case will more fully bring forth its advantages.]

During the operation the patient lost from 6 to 8 ounces of blood, principally from the wounds made into the tumors by the hooks which were used to pull and hold them out, and, secondly, from the delay caused by the improper working of the battery.

After the operation the fundament looked natural, the anus contracted to its normal state, and no sign was left of previous existing hemorrhoids. From this moment to the time he left the hospital, not a drop of blood ran from the fundament.

℞.—Rags dipped in cool water loco dolenti.

His temperature three hours before the operation was 38° 4′ (C). Normal temperature generally 37° 5′.

Half an hour after the operation, he is in a profuse cold perspiration with a very weak pulse. ℞, Milk punches.

Evening.—Suffered from a burning sensation at fundament for three or four hours after the operation, from which he was relieved by the cold applications. P. 96; T. 39° 8. Retention of urine, for which we give four pills, of ½ gr. each, ext. belladonna, to be taken one every hour. Syrup of Morphine (gr. j to ℥j), if necessary to procure sleep.

September 6th; 2d day.—Much better this morning; passed his water at 4 A. M. Suffers only when he moves. Took a light breakfast this morning, which he retained; first nourishment he has taken and kept for the last six days. ℞. Wet rags loco dolenti. Ferrated cinchona wine and best diet, to build up shattered constitution.

The finger introduced into the rectum feels a smooth surface, and no signs of hemorrhoids. The tumors have all been removed. The anal orifice, when dilated, represents a furred surface with commencing suppuration; when contracted it looks normal. P. 92. T. 39° 9′.

Evening.—P. 92. T. 40° 2′.

September 7th; 3d day.—Had a painless passage during the night, for first time in eight days. Walked out in the yard this morning. P. 84. T. 38° 6′. ℞. Stop local treatment; cleanliness of parts.

Evening.—P. 84. T. 38° 4′. His temperature what it was before the operation.

September 8th; 4th day.—From this day he rapidly improves, his appetite increasing daily. P. 72. T. 38° 4′. At the fundament is a healthy suppurating burn of the 2d degree, Dupuytren's classification, which is given up to nature's care. He could leave the hospital to-day, but for observation sake we keep him in a few days more.

Evening.—P. 80. T. 39°.

September 9th; 5th day.—P. 74. T. 38° 2′. Evening.—P. 78. T. 38° ′8.

September 10th; 6th day.—P. 72. T. 38° 2′.

September 15th.—Doing very well. Has fattened up. Suppuration scanty. Defecation painless.

Resume.—Entered hospital September 1st, suffering from internal strangulated piles—anæmic and debilitated constitution. Operation on the 5th. Fever at its height on evening of second day. Great fall of temperature on morning of third day, when convalescence commences. On fourth day he can resume his work, but is kept in hospital fifteen days for the sake of observation. Sufferings slight. Cure radical.

Treatment.—Rags dipped in cool water loco dolenti for 48 hours; tonics and best nourishment.

Case II—Hemorrhoids in a broken-down Constitution—Bloodless Extirpation with the Galvanocaustic—Cure.—Florentine Duluze, æt. 37 years; native of Phillipine Islands. Cook. Entered my ward, Charity Hospital, September 14th, 1872, suffering from a compound comminuted fracture of frontal bone. Malarial toxæmia, and strangulated internal hemorrhoids.

Antecedents.—Entered my ward for the wound of his forehead, which dates back three months. He reached New Orleans two days ago, from Honduras, where the injury happened from the explosion of a cannon. When he was admitted to the hospital, he was in an emaciated and weakened condition, from his former sufferings and the sea voyage on a schooner. We extracted 16 pieces of bone from his forehead, which allowed us to see plainly the pulsations of the brain. He has been suffering from chills and fever, for which we had to institute a specific treatment. Besides these afflictions, he has been troubled with hemorrhoids for the last 20 years, losing blood at times.

Actual State.—September 20th.—At the anus is a tumor, caused by prolapsed and annulated internal hemorrhoids, which have been out for the last ten days, causing much pain, and an impossibility to go to stool. The tumor is the size of a large hen's egg, of a bluish-black hue, very painful to the touch, strangulated and irreducible. It is lobed, composed of a number of hemorrhoids. from the size of a hazel-nut to that of an almond, which, by their continuity form a circular band around the anus, which is obliterated by their concentric contiguity. They are situated above the verge of the anus, just above the level of the internal sphincter muscle. The index well oiled and gently pressed over their center penetrates into the rectum and feels the parts above their origin smooth and healthy. This examination is very painful.

He is very anemic and debilitated from his long sufferings.

Satisfied that the removal of these tumors would benefit our patient, and knowing the reaction which follows galvanic operations to be very slight, we, in spite of his broken-down constitution, propose this means of treatment, which is accepted.

Operation.—It is performed on the morning of September 21st, with the kind assistance of Drs. Alpuente, Tricou, Hopkins, and Mr. Young, student of the ward.

While the patient is being chloroformed, the cutting loop (platina wire) in a *cold state* is placed around the base of the tumors, and tightened down. Just as anæsthenia commences, a pressure upon the button establishes the current, and in *fifteen seconds or less* the tumor is cut, and *not a drop of blood* is seen. The patient is astonished at the rapidity of the operation.

After the operation, at the fundament was a circular band about a third of an inch in width, in the center of which was the anus, contracted down to its normal state. The circular band was a burn of the 2d degree—Dupuytren's classification—dry, yellow, and black, and similar in all respects to such burns inflicted with a hot iron; e. g., the result obtained after branding animals.

Before the operation the pulse is at 84; temperature 38° (C).

℞—Cold applications (in the shape of rags dipped in cool water) to fundament. ℞—Syrup of morphine (gr. j to ℥ j). ℞.—Nourishment.

Evening.—Burning sensation at fundament. P. 72; T. 38° 4′. ℞—Continue treatment.

September 22d; 2d day.—Night restless. Finger introduced in rectum feels everywhere a smooth surface. [This exploration is slightly painful.] Burning sensation at fundament continues. ℞—Same. P. 92; T. 39° 4′.

Evening.—P. 96; T. 40° 6′.

September 23; 3d day.—P. 96; T. 39° 5′. No operation from bowels since eleven days. ℞—Castor oil ℥j.

Evening.—P. 92; T. 39° 3′.

September 24th; 4th day.—Has had 5—6 painless passages. Suffers no more from fundament. P. 96; T. 38° 8′. ℞—Ferrated cinchona wine and best nourishment. No more local treatment.

Evening.—P. 96; T. 38° 5′.

September 25th; 5th day.—Much better; wound suppurates freely. P. 84; T. 38° 2′. ℞—Tonics and cleanliness of parts.

September 26th; 6th day.—P. 100; T. 38° 4′. Does so very well that he insists upon going out. Fundament doing very well. Discharged.

September 30th.—We call at the patient's boarding house and find him doing very well. All eschars have fallen, leaving a rosy and healthy granular surface, in the center of which is the anus, through which the finger penetrates without difficulty. His appetite and general health are much better, and he is without fever since the 27th.

Resume.—A constitution broken down by a compound comminuted fracture of the frontal bone; malarial toxæmia and hemorrhoids. Galvanocaustic operation in this unfavorable condition. Patient well enough to leave hospital on 6th day after operation, cured of his chills and fever, wound of forehead doing very well, its final cure being but a question of time, and radically relieved of his hemorrhoids. Stay in hospital 12 days. Fever at its acme on night of second day after operation; rapid fall on morning of third day; total disappearance on morning of seventh day.

Treatment of hemorrhoids—operation, cold applications for three days, tonics and best nourishment.

Reflections.—Quite a diversity of treatment exists for the cure of hemorrhoids, and each has its advocates. Hemorrhoids being a very common affection, we have thought that cases of this nature would prove more interesting. These two cases will, we hope, be so much more interesting because they were very serious and bad ones, the general health having been in both seriously impaired by the long duration of the affliction on the one hand, and the despondency of the patients on the other; besides, complications of malarial toxæmia and a serious wound of the frontal bone in case 2.

If we compare the state of the pulse and temperature, after the operation, in both cases, we see their gradual ascension for 36 hours, then a rapid fall in the ensuing 12 hours, which may come down as low as it was before the operation, as is the case in Obs. No. I—T. 38° 4′ before operation, 38° 6′ on morning of third day, i. e., 48 hours after operation. Case II, judging from the latter and other cases, would, but for the existing complications, have followed suit to Case I.

After the third day, in both cases, all local treatment ceases, a healthy suppuration sets in, and the final cure becomes a question of time. From this date the men could have gone about their business. In Case I, we kept the patient in the hospital 14 days for observation sake, when he runs off; in Case II, he is kept 6 days.

If with two such cases we have similar results, with better cases, *cæteris paribus*, we should have better results. These two patients were certainly among the worst cases of men suffering from hemorrhoidal affections.

The treatment was very simple, lasting some 36 hours in Case I, and over 48 hours in Case II. The cure is a *radical one* in both cases, as we have had the proofs, by seeing the patients lately. In cases where there exists such a state of anemia as was here present, a loss of blood, however insignificant, is to be taken into serious consideration. In the first instance we had a loss of blood of only 6 or 8 ounces, subsequent to which we find our patient, half an hour after the operation, in a profuse cold perspiration, with a very weak pulse. A few milk punches and he is soon brought to.

In the second case the tumors, larger than in Obs. I, are extirpated in the twinkle of an eye, *without a drop of blood being lost.* In this case, however small might have been the loss of blood, it certainly would have been great enough to have brought on serious complications and may be an hydræmic state of the blood, since his condition was, by far, worse than the patient of Case I.

These sessile tumors were internal hemorrhoids, prolapsed and compressed by the sphincter muscles, with ulcerations, commencing gangrene, and great sufferings. Immediate action was necessary, and such a one as would assure a rapid cure and little or no loss of blood.

Tumors of this kind are always soft, spongy and erectile, diminishing under pressure, but immediately regaining their former volume when the pressure is removed. (Gross.)

Let us, in a brief sketch, compare the most ordinary means of treatment with the galvanocaustic. The knife should not be thought of, on account of the hemorrhage. Most authors are opposed to it. Gross, on this subject, says: "To cut off an erectile tumor, composed as it is of numerous dilated and tortuous vessels, would certainly be a most dangerous undertaking, etc." He recommends ligation as the proper operation for the radical cure of internal piles. Besides that, the after treatment by ligation be more complicated, the author himself admits that, "although ligation of these tumors is generally entirely free from danger, yet, now and then, a case occurs where it causes severe pains and inflammation, erysipelas, or even death by pyemia. * * *" Now in the many cases which we have seen operated upon by galvanocaustic, abroad and at home, and especially in Paris, where pyemia is often so terrible that surgeons have to close their wards, we have never heard of a case of either erysipelas or pyemia resulting from this method of operating. Ligation of hemorrhoidal tumors is known to have been followed by tetanus. Mr. James Lane, of London, reports 2 cases, Mr. Gowland 2, Dr. Ashhurst 2.

The écraseur is sometimes followed by serious stricture of the rectum, and several instances have occurred in which the patient perished from hemorrhage. (Gross.) It is a tedious work, lasting sometimes, as in a case reported by a confrère, over half an hour, and even then there was a small loss of blood.

Dr. Henry Smith, of London, prefers seizing the tumor with a clamp, cutting it off, and searing the surface with the actual cautery. In his opinion it is a safer, less painful, and a quicker method than by the ligature. He reports having performed it nearly a hundred times without the slightest mishap.

The object of Mr. Smith's method is the same as that of the galvanocaustic. He has the clamp, we have the cutting loop (platina wire), which we tighten down; he has the knife, we have it in the loop; he has the actual cautery, we have the galvanic current. We simplify things; a loop and a pressure on the button, and all is over. Again, the instrument being applied in a cold state, we cauterize without the patient seeing anything. To-day I operated on a lady for a nœvus maturnus of the left nates, without chloroform, and made 36 punctures. During the operation she exclaimed, that had she known what it was she would not have submitted. It is evident that had she seen the actual cautery, she certainly would have refused the operation. Not an eighth of an inch outside of the limits were the parts cauterized, there being no radiation with the galvanocaustic.

In our first operation, it will be seen that we acted in such a manner as to prevent a stricture of the rectum. In the second we took no notice of this possibility, made a circular cut, and nine months after, when we saw the patient, there was *no stricture*. A future experience will prove whether such is always the case.

ARTICLE IV.—*Yellow Fever and the Results of Disinfection in New Orleans.* By Alfred W. Perry, M. D., Sanitary Inspector of N. O. Board of Health.

The yellow fever of 1873 commenced in this city on July 4th, in the person of I. M. Arrau, the mate of the Spanish bark Valparaiso, which left Havana in ballast June 16th, arrived at the Quarantine Station below the city June 24th; after a detention of two days, the vessel arrived in the city and was moored at post 48, at the foot of Second street. The man died July 8th, with well-marked yellow fever. On July 12th the mate of a steamboat, which was laid up for repairs at the same wharf about thirty yards distant, was attacked with yellow fever and died. From these two cases the disease slowly spread, there being 6 cases in July and 24 in August. Of the first 10 cases, 8 had recent and direct communication with the first two cases, or had visited the vessels above mentioned. During the first week in August the Board of Health commenced extensive disinfection with carbolic acid, of all places where yellow fever had been reported. The disinfection was performed in two different ways, viz: when a case of yellow fever was reported, all the yards, alleys and drains in the square were sprinkled with carbolic acid by hand sprinkling pots; about 70 gallons of the carbolic acid were used per square. This was done to destroy any disease germs that might be on the ground, and to prevent the spread of the disease germs over the other parts of the same square. Thirty entire squares and 21 half squares where yellow fever had occurred were thus disinfected in the Fourth District, and in only 7 of these areas disinfected were there any subsequent cases of yellow fever.

In the square bounded by Rousseau, First, Soraparu and Fulton streets, from August 14th to September 8th, there were 6 cases. The whole square was disinfected September 13th, and there have been no subsequent cases. There are in this square 33 persons liable to yellow fever. In the square bounded by Chippewa, Annunciation, Eighth and Ninth streets, there were, from September 10th to 16th, 3 cases of yellow fever. The half square was disinfected September 20th. No subsequent cases have occurred in this square, which contains 27 persons liable to yellow fever: the total number of these cases after disinfection was 11. The number ot cases which occurred before the disinfection of the squares on which they lived was 91. To ascertain whether or not the small number of subsequent cases was because of the small number of persons liable to yellow fever who lived in these squares, a census was taken of the total population of each square, and also of the white persons who had come to the city since 1867, the last epidemic year. In 30 squares in which most of the yellow fever cases occurred, the total population was 5223, an average of 174 per square; of these, 1249 were liable to take yellow fever, being nearly 24 per cent. liable. Of the liable persons, 7 3-10 per cent. took the disease before disinfection, and 9-10 of one per cent. after disinfection.

These statistics cannot be denied, nor can the conclusions to which they lead be overturned by any isolated examples of failure, or bad consequences to a few patients.

The disinfection of the streets with carbolic acid by sprinkling water carts was done to prevent, if possible, the disease from extending from square to square, and this has practically been effected. On the second week in August, when the street disinfection was commenced, the cases of yellow fever were scattered irregularly over that portion of the Fourth District between Chippewa street and the river, which was called the infected district.

The greater part of all the cases the present season have been within these limits—

Of 6 cases on July 6th, they were all between Chippewa street and the river.

Of 24 cases in August, 21 were between Chippewa street and the river.

Of 48 cases in September, 38 were between Chippewa street and the river.

Of 31 cases in October, 21 were between Chippewa street and the river.

Never before has yellow fever spread so slowly in this city, while in other cities—Shreveport, Memphis—the disease, undoubtedly derived from this city, spread with its usual rapidity and fatality. A few cases have occurred in Mobile and were treated with the same method of disinfection; and with the result of extinguishing the disease.

Nowhere in the world has disinfection on so extensive a scale been used as in New Orleans, and it has consequently met with considerable opposition. In sprinkling the streets about 20 gallons were used to every 100 yards; this was repeated several times at intervals of 5 to 10 days. The large amount of carbolic acid used made the air of a disinfected locality exceedingly irritating to the eyes, and sometimes produced headache and nausea. These disagreeable effects are due to the naptha and napthalene, which constitute the impurities in the crude carbolic acid: these have no disinfecting value, and in future a purer acid should be used which is not very unpleasant and equally effective and cheap. This purer acid could not be procured during this last season. The purest carbolic acid that can be practically used has some offensive odor, and may produce headache and nausea in a few persons; but it requires more evidence than has been presented by physicians opposed to disinfection to prove that it is really hurtful. One physician has condemned it in the public prints, and his evidence is that he had a case, and after being sick four days the pure carbolic acid was sprinkled in the yard, and the man died the following night. From this experience, carbolic acid has been condemned as being hurtful. It has also been asserted that the yellow fever appearing in the Fourth District during three successive years, when disinfection was applied, shows that disinfection did no good. The yellow fever of 1871 was principally within three hundred yards of the corner of Magazine and Washington streets, and the yellow fever of 1872 was principally around the corner of Jackson and Magazine streets. In fact, in three successive years the cases have occupied areas far removed from each other, and which were not disinfected the previous year. It may even be admitted, that in a few critical cases of yellow fever where life is wavering in the balance, the use of carbolic acid may cause a fatal issue; but this admission does not at all condemn disinfection as a hygienic measure. Hygienic measures are not for the sick but for the healthy. The removal of cases of small pox and typhus fever to special hospitals is practiced with extreme rigor by most European governments, although the removal of these patients from their homes unquestionably causes scores and hundreds of deaths in the persons removed, who without removal would have recovered. If these cases had not been removed, instead of scores and hundreds of deaths there would have been thousands. The true principle of all legislation, sanitary or other, is the greatest good to the greatest number; nobody but the sickliest kind of a humanitarian doubts it.

CLINICAL REPORTS.

Clinical Notes of a Case of Vaginal Ovariotomy with the Correspondence in Regard to the Operation.

MOBILE, ALA., November 3d, 1873.

Professor S. M. Bemiss, Editor of N. O. Medical and Surgical Journal:

Dear Doctor—Enclosed you will find a description of an operation—*Vaginal Ovariotomy*—I did on the 6th of September. The case is fully described in a letter I wrote my friend and preceptor, Professor T. G. Thomas, the author of the operation, who has replied, advising me to publish it in your Journal.

I herewith enclose my letter to Dr. Thomas, and an extract from his reply, also the clinical notes of the progress of the patient, taken by Dr. Frank B. Hamilton, who placed her in my hands for operation, and attended her afterwards.

I give the case to the profession in this shape, because I have no leisure to rewrite it as an article on *Vaginal Ovariotomy.*

Very truly your Friend,

J. T. GILMORE.

Professor of Surgery, Ala. Med. College.

[Professor Gilmore's letter to Professor Thomas.]

MOBILE, ALA., September 13th. 1873

My Dear Doctor—Knowing your enthusiasm about anything that appertains to gynæcology, I write to inform you of my first case of *Vaginal Ovariotomy.*

I was recently on a visit to my wife's relations in Tenn., and was invited to see the patient upon whom I did the operation, by her attending physician. I found her about 48 years of age, and that she had suffered for many years from pain in the ovarian region. During the past year, she had menstruated only twice. For some time (several years) she had complained of, and had been treated for anteversion with endometritis, which still existed.

The endometritis was, however, confined to the cervical canal, and, I think, came from a rupture of the cervix bilaterally with her last child.

By elevating the head and shoulders, I could distinctly feel in the retro-uterine space a tumor as large as a small orange. Your operation was fresh in my mind, and was advised for the following reasons: the woman was an opium eater, acquired because of the pain in the left ovary; and at the age of forty-eight, with her habits and damaged health, abdominal ovariotomy would in all probability prove fatal. Secondly—Vaginal ovariotomy is safer than abdominal ovariotomy, for the following reasons: Through the vagina the incision is through structures that heal more readily than those covering the abdomen. Then again, the vaginal incision is better for drainage. Thirdly—Every practical surgeon knows, that the more remote an incision into the abdominal cavity is from the diaphragm, the less is the danger from acute peritonitis. These reasons influenced me to dissent from the opinions of the learned Peaslee, expressed in his monograph on *Ovarian Tumors.* The patient, after appreciating her condition, readily consented to the operation. I placed her in Sim's position, and after introducing Sim's speculum, seized the posterior lips of the cervix with a *Museux* forceps, and drew the uterus gently forwards and downwards. I then carried the index finger of the left hand into the rectum, and the same finger of the right hand into the vagina. I found that by this manœuvre I had a vaginal space of 2½ inches through which to enter the abdominal cavity. I then introduced the speculum, the patient being all this time chloroformed, and the bowels having been thoroughly emptied by a purgative dose of castor oil. With a long-handled tenaculum I seized the vaginal mucous membrane, and examined carefully to determine the absence of all pulsating vessels. Being satisfied on this point, with a pair of curved scissors I divided the structures embraced by the tenaculum longitudinally, extending from a few lines posterior to the uterus to within a few lines of the rectum. I then awaited the cessation of all oozing of blood. Then I carefully explored the line of the wound, some two inches in length, and found myself down upon the peritoneum. By making firm pressure in the direction of the body of the uterus in the incision, I found that the rectum was out of the way, and with a small-pointed tenotome I punctured the peritoneum. This puncture I enlarged sufficiently to admit the index finger. The opening into the peritoneum I then enlarged, so as to correspond with the external cut. I then readily introduced the index and middle fingers of the right hand. I found I could explore the pelvic cavity—could readily feel the fundus of the uterus. I embraced the tumor between the two fingers. After pressing firmly upon the lower part of the abdomen, and having brought it down until its lower part presented at the incision, it could be distinctly seen to be a cyst. One of my assistants, Dr. J. M. Collins, punctured it with a tenotomy knife, and evacuated its contents partly: when thus lessened, it escaped through the opening. By drawing upon the cyst, I dragged out the ovary, from which it grew by a peduncle. The ovary contained a cyst the size of a small marble; and the Fallopian tube, which could be felt before the abdominal cavity was opened, was brought out with the cyst, its frimbriæ being spread over the large cyst. The peduncle of the large cyst was about one inch and a half in length. With all these structures well drawn down into the vagina, I proceeded to effect their removal, by first using Nott's rectilinear clamp. I passed it up in front of the cyst, and embraced a portion of the Broad Ligament, and Fallopian tube. After screwing it tightly down, I removed it, and applied at the crushed point a waxed silk ligature; then with a curved pair of scissors I removed the whole—the left ovary, the cyst, and the Fallopian tube—leaving a stump sufficient to prevent the slipping of the ligature, which I left hanging out of the vulva, and to the distant end of which I tied a piece of cotton to prevent it, perchance, from slipping into the abdomen. I finally closed the vaginal opening with three silver sutures. I passed one of the sutures through the pedicle, so as to keep the distal stump to the ligature in the vagina.

I left Tennesee the day succeeding the operation, and this morning's mail informs me that she has escaped fever and peritonitis up to the end of the sixth day. Now, I firmly believe an abdominal ovariotomy would have killed this woman. I have done normal ovariotomy once, and intend writing an article on that subject shortly, and I know in slender women this operation could be done through the vagina.

Peaslee does your operation great injustice when he says it is not less hazardous than abdominal section. The vaginal tissues are possessed of a high degree of vitality, and there is not in the line of incision either fat or tendinous structures that are lowly organized to interfere with immediate union. Then, again, there are no muscles in proximity, which, called into action, would interfere with union. All these obstacles to immediate union exist in the abdominal section. Indeed, I intend hereafter, in all cases that I meet, in which I suspect a unilocular cyst, and especially when it crowds down into the pelvis posterior to the uterus, to open the vagina and tap the tumor, and, if possible, to drag it through the vaginal opening. If I fail in this, I can hold in reserve the abdominal opening, and thereby free drainage would be obtained through the vagina. Peaslee objects to it on the grounds of its being an operation difficult of execution. In a deep vagina it would be, and deep vaginæ are usually found in fat women, who are bad subjects for ovariotomy. But in the great majority of women, the operation is more difficult of execution. In the case I operated on I found the whole procedure extremely simple and easy. The whole operation was executed without a change of posture, and consumed only about ten minutes. Peaslee's third objection is fully answered by the fact that in my case the whole ovary was removed.

As soon as the result is fully ascertained, I will report it.

I have written you fully, hoping you will make whatever suggestions or criticisms upon my method of operating that may occur to you.

Very truly your Friend.

J. T. Gilmore.

[Dr. Hamilton's letter to Professor Gilmore.]

JACKSON, TENN., October 2d, 1873.

Dr. J. T. Gilmore:

Dear Doctor—Mrs. H. came out as I predicted, with flying colors. I dismissed her to-day, with a vagina as sound as it ever was; indeed, it has been well since the 20th of September, at which time she menstruated. She never had any peritonitis or cellulitis.

Respectfully,

FRANK B. HAMILTON.

Notes of Mrs. H's Case.—The operation was performed on the 6th of September.

September 7th.—Called at 12 m. Found the patient suffering with considerable nausea. Pulse 96; temperature $99\frac{3}{4}$. Continued opium. At 3 p. m. I was sent for. I found the patient suffering with considerable nausea, much more than at my last visit. Other symptoms unchanged. In place of the opium heretofore ordered, I substituted McMunn's Elixir of Opium in teaspoonful doses every six hours.

At $9\frac{1}{2}$ p. m. temperature $99\frac{3}{4}$; pulse 100. Introduced catheter and drew off $\frac{1}{2}$ pint of urine. Continued elixir of opium.

September 8th., 8 a. m.—Temperature $99\frac{3}{4}$; pulse 80. Introdroduced catheter and drew off $\frac{1}{2}$ pint of urine. Patient rested well all night. Complained of a slight tenderness in the pelvic region. Continued elixir and pouitice to abdomen. Dr. Gilmore ordered a poultice before he left and I continued it. For diet I I ordered beef essence and *soft* boiled egg.

12 m.—Passed the morning well. Washed out the vagina with warm water—used a fountain syringe.

6 p.m.—Temperature 99; pulse 80. Has passed water freely since last visit, eaten two eggs and taken beef essence. Continued elixir and poultice.

September 9th, 6 a. m.—Patient suffering from retention of urine. I introduced a catheter and drew off 1 pint. Washed out the vagina with warm water. Patient slept well all night. Says she would prefer going through with the operation again to having a baby. Temperature 99[illegible]; pulse 88. Nausea somewhat abated. Slight tenderness on the abdomen, though it is diminishing. Can straighten the legs without giving any pain. Continued elixir and poultice. She takes one bottle of elixir daily.

6 p m.—No change.

September 10th.—Patient rested badly last night, and is very nervous this morning. Temperature 100; pulse 130. Washed out the vagina and moved her on a soft bed.

6 p. m.—Much improved. Temperature 98½; pulse 86. No nausea.

September 11th, 8 a. m.—Patient nervous. Rested well until midnight—slept none after. troubled with her bladder. Pulse 120. Washed out the vagina with warm water. Continued elixir and poultice.

6 p. m.—Is to take a teaspoonful of elixir in flax seed tea every 3 hours.

September 12th, 6 p. m.—Patient is troubled with her bladder. No peritonitis. No tympanitis. Continue same treatment.

September 13th, 8 a. m.—Patient is doing well. Pulled at the ligature but it did not come away. Continued treatment, but dropped poultice.

September 14th, 12 m.—Was sent for. Found patient suffering with distension of the rectum, took away a large quantity of hardened fæces with the finger.

6 p. m.—Suffering with piles; applied ice, which relieved the pain.

September 16th and 17th.—No change.

September 18th—Took out the sutures and removed the ligatures; the incision had healed entirely; the pedicle was a little fresh.

September 19th.—Still suffering with piles and her bladder.

September 20th, 11 p. m.—Was sent for. The patient much alarmed about a hemorrhage; suspecting it was catamenial, introduced a speculum and found that she was menstruating. Left her happy.

Nothing of interest afterward occurred; she gradually improved, and on the 1st of October we dismissed her as cured of the operation, and entirely well, but suffering with piles and very slightly with cystitis.

Mrs H. is 48 years of age; has been suffering with that or some other trouble located in the pelvis since the birth of her first child, who is now 27 years old. She afterward gave birth to four or five children; the youngest is 17 years old. She came under my treatment two years ago, at which time I discovered the tumor. She has been under no treatment for nearly or quite a year, except that she used morphia freely. She commenced to use morphia by my directions. As I was unwilling to operate I decided to give her ease. She was treated by a good many physicians, but none, she says, ever said anything about the tumor.

Respectfully,

F. B. HAMILTON.

[Professor Thomas's Reply to Professor Gilmore.]

NEW YORK CITY, Oct. 29th, 1873.

My Dear Doctor Gilmore—Your case of vaginal ovariotomy delights me. I trust that the patient recovered. I offer no criticism upon it, for the simple reason that your procedure was excellent; nor do I present any in reply to Dr. Peaslee's notice of the operation, for in your letter you fully cover the ground. Publish by all means in the *New Orleans Medical Journal.*

I would like to introduce your case in my 4th edition, now being finished, and if agreeable to you, will incorporate your letter, or rather that part of your letter describing it.

Yours Truly,

T. G. THOMAS.

Clinical Report of a Case of Rheumatic Fever with Carditis. By L. S. McMurtry, M.D., Chief of Clinic to Chair of Practice of Medicine, University of Louisiana.

Owen Murray, aet. 21, was admitted to ward 21 of Charity Hospital, January 22d, 1873. Stated on admission that he had previously suffered from an attack of rheumatism, from which he recovered with but little difficulty. Was again attacked ten days previous to admission. On admission the knee and ankle of each lower extremity were involved in the inflammatory process. There was extensive effusion into and around the affected joints, and the muscles of right shoulder and arm were very painful upon slight motion. Pulse quick and full; heart sounds normal. Morning temperature 101 3-10° Ordered Dover's powder in ten grain doses every four hours during the day, and good nourishment.

January 23.—Patient rested well during the night. Appetite good. Excretory functions in good condition. Condition of joints same as on admission. Febrile movement increased. Temperature (morning) 102°. Action of heart is rapid and excited. Pulse 120—intermittent, quick, jerking, and without great force. On auscultation of the heart, a distinct systolic murmur is heard. Ordered the following:

℞. Potass. Nit., ʒij.
Aquæ, f℥iij.

Ft. Sol. S.—Tablespoonful every four hours. Also Dover's Powder, to be used as before.

January 24.—Condition somewhat improved. Intermittency of pulse has disappeared. Cardiac murmur still distinctly heard, and in addition, a loud friction sound is discovered at the base of the heart with every movement of the organ. The effusion in the joints is diminished; pain and tenderness are also subsiding. Temperature, 101° 5′; Pulse 104. Appetite good. Excretory functions in good condition. Ordered the following:

℞. Potass. Brom., ʒij:
Potass. Iodid., ʒss.
Aquæ, f℥iij.

Ft. Sol. S.—A tablespoonful three times daily. Also Dover's Powder, gr. x. at night.

January 25.—Condition the same as yesterday. No change in the physical signs. Temperature 101°; Pulse 102.

January 27.—Effusion disappearing from affected joints. Patient moves about in bed without great pain. Friction sound at the base of the heart has disappeared, but the endocardial murmur remains distinct. Temperature 99° 5; Pulse 100. No change in treatment.

Patient continued to improve from this time. The febrile movement subsided, the effusion into and in the vicinity of the affected joints disappeared. The friction sound at the base of the heart did not recur, and the endocardial murmur became softer and less rude in character; but at the time of discharge of the patient from the hospital, February 9th, it could be distinctly heard. It is worthy of mention that during the entire attack the patient never complained of the heart, or attracted attention to it in any way.

EXCERPTA.

The Propagation of Zymotic Disease by Milk.

The present outbreak of enteric fever in Marylebone has had the effect of directing professional attention, in the absence of other assignable causes, to the milk supplied to the infected houses as a probable source of the mischief. We believe that there can be now no reasonable doubt as to the well-grounded character of the suspicion. The proof is being collected and sifted by Mr. Netten Radcliffe, who has been sent into Oxfordshire to inspect the dairies and farms whence is obtained the milk of the company which supplied, it is said, nine-tenths of the smitten houses. We may be certain that no pains to arrive at the truth will be spared by Mr. Radcliffe and by Dr. Whitmore (the Health Officer of Marylebone), and the public and profession will confidently accept their verdict.

The occurrence, however, and the suspicion to which it has given rise, are not likely to be soon forgotten. Coming on the outbreaks of enteric fever at Islington and at Armley, Leeds, which were distinctly traced by Dr. Ballard to contaminated milk; an earlier outbreak of the same fever at Penrith, observed by Dr. W. M. Taylor; and the local epidemic at Parkhead, near Glasgow, observed by Dr. Russell—to all of which the same cause was clearly assigned—the public are not likely soon to lapse into their usual state of indifferent security as to the source and character of their milk supply. We say "source," for we shall directly prove that there is some evidence that milk may be contaminated with the contagium of zymotic disease, although it may be apparently of fair quality and present the chemical characters of a normal unadulterated fluid.

The subject has been treated with considerable acumen by Dr. John Dougall, the medical officer for the Burgh of Kinningpark, Glasgow, in a paper read before the Sanitary Section of the Philosophical Society of Glasgow, in April last, and which, after being published in the *Glasgow Medical Journal*, has since appeared in a separate form. One of the principal positions maintained by the author is that milk is "a congenial soil for the propagation of zymotic disease." This he argues first from its constitution: it contains a fermentable or putrescible body, casein, capable of acting as a ferment on sugar of milk, and, when putrefying, capable of inducing similar changes in other organic substances. Milk contains all the elements necessary to keep up the nutrition of the body, but it is dead organic matter, and is therefore incapable, like the animal body itself, of withstanding the attacks of toxic germs. "It is a more favorable *nidus* for the nurture of contagia than even a sickly organism." Practical dairy-keepers know that it rapidly imbibes effluvia. Milk allowed to stand near putrescible fish will taste and smell of it. The same is true of other putrefying organic matter, and strong-smelling substances, such as turpentine, onions, tobacco, paraffin, lime, etc., will rapidly impart their odor to milk standing near them. Milk, moreover, in virtue of the amount of water it contains, is a soil admirably adapted for zymotic poison. Dr. Dougall also argues that colostrum or "beasting milk" and diseased milk—both of which would contain more or less albumen, and the latter probably epithelium, casts of the lacteal tubes, pus corpuscles, or granular *debris*—would be especially favorable to zymotic vitality.

Accepting the fact that enteric fever can be conveyed through milk, two questions present themselves. First, is enteric fever the only disease that can be conveyed through this channel? The second is, in what way or ways is the contagium of disease introduced into milk?

The first question must be answered in the negative. Enteric fever is not the only disease that can be propagated through milk. Professor O. Bell, of St. Andrew's, and more recently Dr. Robinson, of Leeds, have called attention to the transmission of scarlatina by this agent. In the St. Andrew's outbreak twenty-six children took scarlatina from swallowing milk mixed with cuticle from the hands of a person who had milked the cows, and was herself desquamating after scarlatina; she had also nursed others with the disease. Dr. Robinson has recorded that twenty-one children were attacked with scarlatina after swallowing milk obtained from a house where several children were ill of the same disease. Dr. Grimshaw, of Dublin, announced in a lecture, delivered in March last, his belief that the propagation of small-pox and cholera by milk had been observed by himself, and has since communicated to Dr. Dougall the facts on which he grounded his belief. These seem not more than sufficient to warrant a suspicion.

With regard to the second question, in what way or ways may contagion be introduced into milk? it seems possible that the answer must be, in two ways—through water and through air. The most obvious channel of mischief is undoubtedly water—used either for purposes of adulteration, or it may be accidentally introduced in processes of cleaning, etc. Knowing as we do how infinitesimally small is the bulk of solid contagium capable of conveying vaccinia or variola, it is impossible to deny that the most trifling accidental addition of infected water may be sufficient to contaminate a considerable quantity of milk. A speck of contagious matter from a typhoid patient left in a can by the water with which it was washed may do all the mischief. But it would seem that even admixture of water is not necessary. It would be dangerous to assert this absolutely, but it is the conclusion to which the observations made in the outbreak of enteric fever at Parkhead, in a second outbreak at Leeds, and in the outbreak at Penrith in 1857, seem to point. In the case of the second Leeds outbreak, reported on by Dr. Robinson, the inmates of the dairy farm whence the milk came were the victims of typhoid fever; the water supply of the farm was remarkably pure, being obtained from a source at a higher level than the house; but the sick were in a room communicating with the dairy, those who nursed them attended to the milk, the sanitary arrangements were as bad as possible, and the house, cow-house and dairy seem to have been in an atmosphere of emanations from the sick. In the case of the Penrith outbreak, three children were down with typhoid fever; their mother nursed them; she milked the cows, which were kept in a byre adjoining the house; the milk was brought into the room where the children were lying sick, and there it remained until distributed to the customers, many of whom took the disease.

Still, we must acknowledge that these facts have not the precision which would warrant us in asserting that pure milk exposed to an atmosphere of contagium is certain to become a vehicle for its propagation. It probably is so, but absolute proof is yet wanting. The evidence in favor of the contamination of milk by water containing febrile poison is stronger, and it is supported by the known facts of the propagation of enteric fever by water supply. That milk will convey zymotic disease we hold to be absolutely proved, and it is a question whether it is not one of the most certain and dangerous modes by which it may be disseminated. Itself an organic fermentable fluid, it may be that it is suited for the conveyance and spread of zymotic poison in a higher degree than either water or air.—*Medical Times and Gazette.*

Treatment of Diphtheria.

Dr. Lolli, of Trieste, states that while diphtheritis is very fatal in that city, he has lost less than 2 per cent of his cases in consequence of the efficacy of the treatment he employs. He does not resort to cauterization, bleeding, purgatives, or emetics, save in very exceptional cases. He maintains the skin in a state of great activity from the very first by keeping the patient in bed, and, if necessary, applying warm applications or mustard. These measures are continued until all local or general symptoms have disappeared. As the sole medicinal agent, he employs the following mixture in different concentration: Liq. calcis ℥iv. ad lb. j., liq ferri sesquichl. ℈j. ad ʒij., phenic acid gr. j. ad ℈j., mel. rosæ ℥j. With this he paints the fauces every two hours, and gives two spoonsful of the same in water every two hours.—*Wiener Med. Zeit.*, July 8.

The Value of Sodic Bromide as a Nervous Sedative.

Bromide of sodium, although known to have a therapeutic action analogous to that of the bromide of potassium, has lately somewhat fallen into disuse, while the latter salt has been recommended as a remedy for nearly every disease. The bromide of sodium has a pungent saline taste, is freely soluble in water, and forms a colorless solution. Shortly after it is taken into the stomach, a burning sensation is experienced at the epigastrium; this quickly passes off, giving place to drowsiness and sleep, followed by numbness in the extremities, which does not disappear until several hours after waking.

The following cases illustrate its beneficial action in nervous diseases.

Fred. B., æt. 21 years, came under treatment for epilepsy, November 13, 1872. From early childhood the attacks had occurred three or four times weekly. He was treated for the first month with thirty-grain doses of bromide of potassium thrice daily, combined with one-third of a grain of extract of belladonna at night. As the attacks diminished but little in frequency, a seton was inserted in the back of his neck; for a short time after this the fits appeared to be less frequent and severe, but, as he complained of lowness of spirits and debility, one grain each of sulphate of iron and sulphate of zinc were ordered to be taken three times daily. This was continued only one week, as the symptoms returned with their former severity. Bromide of potassium was resumed, in forty-grain doses; this, with the addition of succus conii and a fresh seton, composed the treatment up to May 22, 1873, no effect being produced. On the 22d he was ordered three grains of bromide of sodium three times a day, and during the next week he had only two fits. On May 29 each dose was increased to fifteen grains, and on June 5 to twenty grains; in the interval he had several attacks of "petit mal," but no marked epileptic seizures. After this he improved much in general health, and had but one fit.

In another case, a boy 14 years old, who had been subject to epilepsy from birth, after subduing the paroxysms by taking ten grains of bromide of potassium three times daily, suffered no return on the substitution of three-grain doses of the bromide of sodium, although he felt much depressed.

In a third case of epilepsy, the fits were checked by taking daily fifteen grains of the salt in three doses; here also general depression was marked. This depression of spirits very frequently accompanies the use of the medicine in a watery solution, and might possibly be counteracted by the administration of a tonic in combination.

In two cases of nervous excitement due to mental auxiety, and in one of epileptic vertigo, small doses of the bromide produced great relief, while in a case of insomnia in an old man it appeared to do harm. We have, therefore, in sodic bromide, where judiciously used, a valuable nervous sedative.—(W. Ainslee Hollis, M. D.: *The Practitioner*, August, 1873.)

Bromide of Potassium in Cholera.

Dr. William Pepper, (*Medical Times*, July 12th, 1873) recommends the use of bromide of potassium in the collapse of cholera. He advises it given in doses of forty-five grains in three ounces of water every twenty minutes, by mouth or injection. This drug, he thinks, has a wonderful power in quieting irritation of the sympathetic nerve, which irritation he regards as the source of the symptoms of relapse.

Researches in the Physiology and Pathology of the Brain.

The following are Dr. Ferrer's conclusions. Imperfect as he admits they are, nevertheless they are most worthy of examination, and we commend them to the attention of the profession. He says:

"1 The anterior portions of the cerebral hemispheres are the chief centres of voluntary motion and the active outward manifestation of intelligence.

"2. The individual convolutions are separate and distinct centres; and in certain definite groups of convolutions (to some extent indicated by the researches of Fritsch and Hitzig), and in corresponding regions of non-convoluted brains, are localized the centres for the various movements of the eyelids, the face, the mouth and tongue, the ear, the neck, the hand, foot, and tail. Striking differences corresponding with the habits of the animal are to be found in the differentiation of the centres. Thus the centres for the tail in dogs, the paw in cats, and the lips and mouth in rabbits, are highly differentiated and pronounced.

"3. The action of the hemisphere is in general crossed; but certain movements of the mouth, tongue, and neck are bilaterally co-ordinated from each cerebral hemisphere.

"4. The proximate causes of the different epilepsies are, as Dr. Hughlings-Jackson supposes, 'discharging lesions of the different centres in the cerebral hemispheres.' The affection may be limited artificially to one muscle or group of muscles, or may be made to involve all the muscles presented in the cerebral hemispheres, with foaming at the mouth, biting of the tongue, and loss of consciousness. When induced artificially in animals, the affection, as a rule, first invades the muscles most in voluntary use, in striking harmony with the clinical observations of Dr. Hughlings-Jackson.

"5. Chorea is of the same nature as epilepsy, dependent on momentary and successive discharging lesions of the individual cerebral centres. In this respect Dr. Hughlings-Jackson's views are again experimentally confirmed.

"6. The corpora striata have crossed action and are centres for the muscles of the opposite side of the body. Powerful irritation of one causes rigid pleurosthotonus, the flexors predominating over the extensors.

"7. The optic thalamus, fornix, hippocampus major, and convolutions grouped around it, have no motor signification, and are probably connected with sensation.

"8. The optic lobes or corpora quadrigemina, besides being concerned with vision and the movements of the iris, are centres for the extensor muscles of the head, trunk and legs. Irritation of these centres causes rigid opisthotonus and trismus.

"9. The cerebellum is the co-ordinating centre for the muscles of the eyeball. Each separate lobule (in rabbits) is a distinct centre for special alterations of the optic axes.

"10. On the integrity of these centres depends the maintenance of the equilibrium of the body.

"11. Nystagmus, or oscillation of the eyeballs, is an epileptiform affection of the cerebellar oculo-motorial centres.

"12. These results explain many hitherto obscure symptoms of cerebral disease, and enable us to localise with greater certainty many forms of cerebral lesion."—*Medical Times and Gazette.*

Clinical Reminiscences—No. II. By Peyton Blakiston, M.A., M.D., F.R.C.P., F,R.S.

Intestinal Obstruction.—Obstructions taking place in different parts of the intestinal canal are of frequent occurrence, and, arising as they do from various causes, they occasionally assume a peculiar form and excite great interest.

There is generally a marked difference in the symptoms arising from obstruction in the small and in the large intestines; although when it takes place near their union at the ileo cæcal valve it is difficult to diagnosticate its exact position. Usually, however, the urgency of the vomiting and the rapidity with which exhaustion is produced sufficiently separate obstruction of the small from that of the large intestines, which latter is sometimes prolonged to a period of thirty or even thirty-three days, during the greater part of which time little or no vomiting takes place.

Small Intestines.—When obstruction takes place at the origin of the intestinal canal—the pyloric orifice of the stomach—it is usually, but not always, occasioned by carcinoma.

Two remarkable cases have fallen under my notice in which it arose from a different cause—one that of a gentleman, the other that of a lady, both middle-aged, and both previously in fair health. The symptoms and progress of the affection were so exactly similar in both cases that a description of one will suffice for both. About an ounce of Burnett's disinfecting fluid (chloride of zinc) had been swallowed in mistake for fluid magnesia. The urgency of the symptoms arising from the destruction of a portion of the mucous membrane of the stomach had been mitigated and relieved by suitable soothing treatment during some three or four weeks, and the patients were progressing favorably, and complaining of little or no pain or discomfort after taking food, when periodical vomiting came on, the stomach becoming much distended before each act of vomiting—the symptoms thus gradually assuming the same character as those which occur in carcinomatous narrowing of the pyloric orifice of the stomach, and the patients eventually dying seven or eight weeks after the accident from inanition.

A post-mortem examination revealed the same appearance in both cases. The effects of the irritating poison on the mucous membrane of the stomach were chiefly seen on the great curvature, but the ulcers may be said to have in a great measure healed over. The pyloric orifice, however, was nearly blocked up by thickening of the sub-mucous tissue, thus presenting somewhat of the same appearance as in carcinoma.

A case of carcinoma pylori once came under my notice in which the progress and termination of the case were most unusual. A man about 42 years of age had been suffering for some time with all the symptoms of a carcinomatous affection of the stomach, including frequent and copious vomiting of fluid containing dark brown shreds resembling tobacco, when the vomiting gradually ceased, the action of the bowels became regular, and the patient regained so much strength that he was able to walk four or five miles daily. One day he was suddenly seized with vomiting of semi-solid stercoraceous matter, and speedily sank.

On examination of the body, extensive carcinomatous disease was discovered in the stomach, involving not only the pyloric orifice, but a large portion of the great curvature. The pyloric opening had been enlarged by ulceration, which had destroyed much of the morbid growth around it, so that it had a diameter of an inch or more. The great curvature adhered to the tranverse colon, and communicated with it by a large opening, through which the contents of the colon had passed into the stomach.

I know not whether the pyloric orifice was enlarged in a similar manner in two other cases wherein an amendment took place, and life was prolonged for six or seven years afterwards. As there was not a post-mortem examination in either case, the matter must remain in doubt.

Whilst on this subject I may mention that I have found great relief afforded, when there have been sharp lancinating pains, by the subcutaneous injection of a few drops of a strong solution of morphia in the left hypochondriac region—a remedy which is perfectly heroic in cases of genuine sciatica, as shown in a paper of mine published some years ago in this journal.

Two or three cases of carcinoma of the duodenum occurred in my practice, but they did not present any feature requiring notice. In one case, however, obstruction of the duodenum was produced from without. A middle-aged man was affected with medullary sarcoma of the testicle, which, as is often the case, crept along the chain of glands skirting the abdominal veins, and expanded into a large tumor at the upper part of the abdomen. This tumor pressed the duodenum upwards, and became adherent to it for some inches, thus producing intestinal obstruction, attended with much the same symptoms as in carcinoma pylori, except that there was no evidence of ulceration. After death it was found that the intestines were free from all disease.

As is well known, obstruction of the small intestine more frequently arises from hernia than from any other cause, but such cases have only accidentally come under my notice, as in the following instance: About thirty-five years ago an old man came under my care, as a patient of the Birmingham Dispensary, suffering from bronchitis. Suddenly there appeared symptoms of obstruction of the small intestine. He was therefore carefully examined to ascertain whether there was a hernia. None, however, could be discovered, but a small hard knob of the size of a pea was found close to the right side of the arch of the pubis. Now, it happened that some years before, when dissecting in the Ecole de Mars at Paris, I had seen a curious specimen of hernia, which was caused by a portion of the small intestine having passed through a slit in Gimbernat's ligament, and having been retained there, formed a tumor about the size of a pea. This specimen being in pickle, I had examined it repeatedly whilst Mr. Thompson, an English medical student, was making a drawing of it. It struck me as possible that the same occurrence might have taken place in this case, as no other source of obstruction could be discovered. I therefore sought the assistance of my surgical colleague, Mr. George Elkington, and subsequently that of the senior surgeon, Mr. Baynham. Both of them thought the small lump was a gland, but at my urgent solicitation, they agreed to cut down upon it. They did so, and it proved to be a hernia caused by a portion of the small intestine having passed through a slit in Gimbernat's ligament, exactly similar to the one I had seen in Paris. The patient made a complete recovery.

In the following case, too, an unusual state of things was revealed. A schoolboy, aged 15, feeling unwell, was placed under the care of the medical attendant of the school, who gave him some medicine which purged him violently. Soon afterwards he complained of severe pain in his right flank, urgent vomiting set in, and there was no action of the bowels. Seen in consultation, he was found to be in a state of complete prostration. His countenance was hippocratic and covered with a profuse cold sweat; his pulse 140, small, wiry, and feeble. On examining him I found a scrotal hernia on the right side, which he said had been there for a long time. A consulting surgeon was then called in. He thought the hernia was omental, and was not the cause of the obstruction in the bowels. Still we thought it right to tell the parents of the lad that it was possible that the hernia might be the cause of the obstruction, and to put it to them whether it should be cut down upon to ascertain whether this was the case or not. They wished it, and accordingly the hernia was explored, and found to be omental, as the surgeon had surmised, and in no way connected with the intestine. Consequently no relief was obtained, and the patient died six hours afterwards. A lump of excessively indurated fæcal matter, about the size of a pea, was found impacted in the appendix vermiformis, which, as well as some portion of the neighboring ileum, was highly inflamed and embedded in pus.

I take this opportunity of stating that I have witnessed several instances in which great injury has been induced by the administration of strong drastic purges in cases of intestinal irritation and obstruction.

Years ago I often heard obstruction attributed to intussusception, but I myself never saw a case of this kind which was not accompanied by inflammation of the ileum at its juncture with the cæcum, unless, indeed, the following case might be considered one:—An aged female was suffering from obstruction, and the symptoms were sufficiently urgent to render it probable that it lay somewhere in the small intestines, but not high up. No traces of hernia were discoverable. Small doses of opium were administered, and salt and water thrown up per anum. I am afraid to state the quantity injected before she complained of inability to retain more, but it was enormous. On its being allowed to escape, it brought with it a large quantity of fæces without any scybala, and relief, followed by speedy restoration to good health, resulted.

Large Intestines.—Many cases of obstruction of the large intestines have come under my notice arising from various causes, amongst which the most frequent have been an accumulation of foreign bodies, as fruit-stones, etc., carcinomatous narrowing, chiefly at the commencement of the descending colon or the sigmoid flexure, and once in the rectum. Some cases, however, occurred in which none of these causes of obstruction were present.

A lady, aged 34, after her confinement, suffered from obscure pains in the abdomen, and the bowels ceased to act, the abdomen being at the same time considerably distended. There were, however, no symptoms of peritonitis or effusion within the abdominal cavity. Enemata passed up a considerable distance and in large quantity came back slightly tinged with fæcal matter; but no relief was obtained, and she gradually sank in a typhoid state. On examination, the ascending and tranverse colon was found greatly distended and perfectly flaccid, the injected state of its vessels giving traces of inflammatory action, but no pus was found. The obstruction seemed to have been caused by the loss of muscular power in the coats of the intestine.

The following curious case was that of a policeman, aged 32, whose bowels had been confined for some days, and who, on suffering from severe griping pains, applied for admission to the Birmingham General Hospital. He derived comfort from small doses of gum opii; but copious enemata failed to bring down any fæcal matter. After a few days a round swelling was seen to come up from behind the pubis, looking like a distended bladder. My colleague, Mr. Hodgson, being called in, passed a catheter into the bladder; but only a small quantity of urine was drawn off, and the size of the tumor was in no degree diminished. It was therefore evident that the swelling was caused by distension of some portion of the colon, probably the cæcum. But where was the obstruction that caused the distension, and what was its nature, we knew not. It continued to increase till it reached the size of a small child's head, and fluctuation was perceived by the finger passed up the rectum. I proposed to Mr. Hodgson to puncture the swelling with a trocar; and to prevent effusion into the abdominal cavity I had a curved grooved needle made with a movable handle, which, after being threaded, could have been passed into the swelling, and having by its groove revealed the nature of the contents of the sac, could have been pushed on, and its point having been turned backwards towards the outer surface of the abdomen near where it had entered, could have been brought out, by which means the sac could have been fastened to the abdominal wall; it could then have been pierced, and its contents evacuated by means of a large trocar. Mr. Hodgson thought the operation would have been attended with too much risk, and declined to perform it. The patient died after about thirty days of obstruction. On examination of the body it was found that a mass of small intestine had passed over into the right flank, and had bound down the ascending colon over the internal psoas muscle. Had the operation been performed, it is probable that, after the evacuation of the sac, the intestine would have righted itself and the patient would have recovered, as there were no strong adhesions.

Another case occurred, in which I think recovery might have resulted from the performance of an operation. A girl, aged 16, became a patient of the Birmingham Dispensary, suffering from obstinate constipation evidently resulting from obstruction in the large intestines. On introducing the finger per anum a stricture was discovered just within reach. I could myself see no reason why a blunt-pointed bistoury should not have been introduced and the stricture cut through—as the sphincter is divided in cases of fissure of the anus,—but my colleagues declined to perform the operation, and the patient died. The stricture was found to be of a simple fibrous character.

The late Mr. Jukes published the case of a woman who was under my care suffering from obstruction of the large intestine, and on whom he performed Amussat's operation, opening the colon in the loin, and forming an artificial anus. The patient survived the operation sixteen days, I think, dying of peritoneal inflammation of a low character extending from the wound. The obstruction was found at the sigmoid flexure, and was caused by a carcinomatous growth.

For some time previous to this occurrence, Amussat's operation had been much discussed, and we were in constant habit of injecting bodies per anum in the hospital dead-house, and performing the operation on them. Subsequently two of our pupils, when engaged in practice, I believe performed the operation successfully; but I do not remember their names, nor the particulars of the operations.

About twenty-three years ago, a case occurred which interested me very much. The wife of a medical man, about 38 years of age, had symptoms of obstruction in the large intestine. She was in rather a delicate state of health, and her countenance had a leaden, earthy appearance, particularly under the eyes. It was found that she had a largish hard tumour attached to the back of the uterus, if not incorporated with it. As the case progressed the convulsions of the intestines were strongly marked, and the course of the distended transverse colon could be distinctly traced, the distention terminating abruptly at its left extremity, where the descending portion commenced. After a time, however, these markings were obliterated by a more general distention of the abdomen. The seat of the obstruction was considered to be at the commencement of the descending colon, and its character, as well as that of the uterine tumour, to be carcinomatous. The late Dr. E. and Mr. C. H. J., being friends of her husband, came down and met us in consultation. Dr. E. was of opinion that the obstruction was caused by pressure of the uterine tumour on the rectum, on which I requested Mr. J. to pass the colon tube if possible, and to inject warm water. He passed it with ease, and more than a quart of water was thrown up. It was thus proved that the obstruction lay above the rectum. Dr. E. then proposed that a drop of croton oil should be given every hour, and was of opinion that the stricture and tumour were both of a fibrinous nature. To this I strongly objected, as being calculated to give much pain, and to cause irritation, if not inflammation of the intestine, and thereby greatly increase the discomfort of the patient, without offering the slightest chance of the obstruction being removed by it. I only agreed to one dose being given, under the distinct understanding that should it produce serious discomfort it should not be repeated, but that I should revert to my previous treatment by opium and warm enemata. The patient gradually sank, having lived about twenty-eight days from the time when the bowels first ceased to act.

The whole of the back of the uterus was found to have become converted into a large carcinomatous mass projecting backwards. A tumour of similar character, about the size of a pullet's egg, was found in the left ovary, and there was carcinomatous stricture of the colon at the commencement of its descending portion, an opening being left through which a crow-quill could hardly pass.

Five or six cases of obstruction of the large intestines terminated in complete recovery, the obstruction having been caused in some cases by a collection of fruit stones, and in others by that of numerous and hard scybala impacted in the caput coli, and even in the rectum. In all cases the line of treatment was the same. At the onset a purgative was sometimes given; but, failing to act, was never repeated. When vomiting was urgent ice was given when it could be obtained, and throughout the illness small doses of gum opii were administered with such frequency as the symptoms called for. At the same time enemata of warm water or gruel were thrown up in such quantities as the bowel could receive. When it was found practicable to introduce the colon tube it was always employed, but sometimes it was found impossible to pass the promontory of the sacrum. The tube was larger and less flexible than those in general use some years ago, in order to prevent its doubling up in the rectum when its progress was opposed by the projection of the sacrum. Its extremity also was made large and rounded in order that it might not hitch in the folds of the mucous membrane of the bowel. It was slightly curved to assist the operator in his endeavor to pass it into the sigmoid flexure by a semicircular sweep, such as is employed in passing a catheter. But it was often a matter of no small difficulty, and required great dexterity to pass it well into the colon. I would strongly advise all young practitioners to take every opportunity of practising its introduction, in order to be ready in time of need.

Here I may perhaps be allowed to say a word about the treatment of certain forms of constipation which sometimes terminate in obstruction—such, for instance, as arise from want of tone in the muscular coats of the intestines, occurring in persons of sedentary habits or suffering from debility arising from various causes. In such cases I have seen great improvement produced by the employment of pills containing one grain each of quinine and capsicum and two grains of the myrrh and aloes pill, the latter ingredient being gradually diminished as the bowels regained their tone. Combined with this treatment, enemata of *co d* salt and water were thrown up when the pills failed to produce the desired effect, but no stronger aperient was ever given. When the patient was subject to piles, myrrh and the watery extract of aloes were substituted for the myrrh and aloes pill.

By this line of treatment the *vix medicatrix naturæ* was allowed fair play. The patients may have died from the effects of an incurable disease, but their end was never hastened by ill-advised attempts of the medical attendant to arrest the progress of the disease.—*Medical Times and Gazette.*

Cod-Liver Oil Loaves.

MM. Carre and Lemoine state that of all means of disguising the taste of cod-liver oil its introduction into bread during panification is the best. Every pound of bread should contain seventy-five grammes of oil (five spoonfuls) and about ninety grammes of milk. Small loaves may be made weighing 150 grammes, and containing only two spoonfuls of oil. They are very white and pleasant to look at, and have so little taste of the oil that both children and adults eat them with ease. Thirty-four of these rolls are delivered every day at the Enfants Malades for the use of M. Bouchut's little patients, and the children look out for them with pleasure. They are easily digested, and create no repugnance whatever. In private practice adults make use of them as their ordinary diet.—*Bulletin de Thérap.*

Removing Bitter Taste of Medicines.

Sugared substances in concentrated solution much diminish bitter tastes. Thus, while the infusion of gentian is excessively disagreeable, its syrup can be very well taken if it be not diluted with water, and weakening the action of the sugar. But the body that seems to enjoy this property in the highest degree is glycerhizin, or the sweet principle of liquorice. By its aid we can almost immediately dispel the bitter taste of quinine, colocynth, aloes, quassia, etc.—merely chewing a morsel of liquorice root. Aloes may thus be powdered and sifted without inconvenience. The liquorice must be kept in the mouth for a longer time in proportion as the bitterness of the substance to be overcome is intense or its solution more concentrated.—*Rev. Méd.*, July 5.

Intussusception.

Dr. Affleck reports two cases of intussusception in children. 1. A child, aged seven months, generally healthy, had diarhœa, vomiting, severe retching, and pain, which resisted ordinary remedies. On the fourth day blood passed per anum. Large enemata were at once rejected; no hernia was present; inflation of the bowel by bellows was tried without success; fluid mercury was given by the mouth, but the patient died on the fifth day. On post-mortem examination, an invagination of the ileum into the cæcum was found in the right iliac fossa. The bowel above was greatly distended; below it was pale and empty.

2. The second case was that of a child aged five months, previously healthy. In the course of a diarhœa a copious evacuation was followed by a sudden cry, vomiting, retching, and exhaustion, after which no fæces passed, only blood. Nothing was felt

in the rectum; there was no hernia; the abdomen was soft. Enemata were at once expelled, but strong inflation with the bellows after two or three minutes *suddenly* overcame the resistance, and the abdomen became tympanitic. Vomiting ceased; a warm bath and castor oil were followed by a free evacuation, and the patient next day was quite well.—*British Medical Journal*, July 26, 1873.

Marey on Uniformity of the Heart's Work, when the Organ is not subject to any Exterior Nervous Influence.

The author states (*Comptes Rendus*, August 4), that for twelve years he has lost no opportunity of verifying the theory that (the innervation remaining constant) the heart always performs an amount of work sensibly uniform, its beats being rare when each of them has to overcome considerable resistance, and frequent, on the contrary, when the resistance diminishes. The resistance is the pressure of blood in the arteries.

Cyon's experiment with the depressor nerve (producing retardation of the heart-beats and diminishing the pressure in the arteries), belongs to the cases in which the heart has been impressed through the nervous system. Cyon, however, says that, experimenting with three rabbits, he sought to destroy all the nerves running along the vessels, and to isolate the heart from all exterior nervous influence; and that even here the depressor nerve, when stimulated, produced retardation of the heart-beats. M. Marey, remarking on the difficulty of this experiment, doubts whether some nerve-fibres may not have escaped the scalpel.

In order to study the effects of varying the arterial pressure, in a heart detached from all exterior nervous influence, he removed the heart of a tortoise, and fitted to it an artificial circulatory apparatus formed of caoutchouc tubes, in which circulated fresh calf's blood. From a raised reservoir the blood was brought by a syphon into the veins and the auricles; passing from the ventricles to the arteries it was forced into the elastic tubes, which conveyed it back to the reservoir. These last tubes represented the arteries and small vessels, and various apparatuses could be applied, in order to study the physical phenomena of this circulation. Notwithstanding a high temperature, the circulation continued over five hours, and the following experiment was frequently repeated. Whenever the pressure of blood in the arteries was increased, either by contracting the orifice of outflow, or by raising it, the heart's movements were retarded; whenever the pressure was diminished, the beats were accelerated. This experiment was performed before several members of the Academy, and shows that the heart beats more quickly in proportion as it performs less work in each of its beats.

Schmitz on Idiopathic Retropharyngeal Abscess in the First Two Years of Life.

Dr. Schmitz (*Jahrbuch für Kinderheilk*, vi. 3, p. 283, 1873) says, in three years he has seen sixteen cases of retropharyngeal abscess. Not one of these cases was associated with caries of the vertebræ, and therefore the author calls them idiopathic. He believes that the disease is commonly due to a lymphadenitis of the postpharyngeal lymphatic glands, which are constantly present up to the third year of life. In seven of the sixteen cases, the abscess formed a soft swelling below the jaw, and under the sternomastoid muscle. All Schmitz's cases were less than two years old; thirteen of them less than one year old.

The symptoms are quite peculiar. Respiration is labored, carried on through the half-open mouth, and attended by a loud snoring noise. The noise made by breathing is unlike that observed in croup, and very much like that in enlarged tonsils. The neck is stretched out; the head somewhat bent backwards. There is a sense of fulness, or even actual swelling, in the neighborhood of the angle of the lower jaw. Milk returns through the nose and mouth. Inspection of the throat is not easy; when the tongue is depressed by a spatula, the infant chokes, and the fauces become filled by regurgitated milk or mucus. Under favorable conditions, a prominence can be seen in the posterior pharyngeal wall. Palpation, by means of a finger passed into the fauces, is much more decisive; in a few seconds the presence, position, and size of the abscess can be made out. In every case of dyspnœa in an infant, without obvious cause, the possibility of retropharyngeal abscess should be considered.

The result in the sixteen cases was as follows: thirteen recovered perfectly, one was lost sight of, two died. One death was sudden, and attributable to œdema glottidis (the abscess having been opened); the other child was neglected by its mother, and died of marasmus.

Spontaneous bursting of the abscess is usually fatal from the pus entering the larynx. Resolution never occurs.

The treatment consists in opening the abscess by the knife. Whether the opening be made in the pharynx, or in the neck, or in both, depends upon circumstances. An opening in the neck should be avoided if possible. Seven times Schmitz made the opening in the pharynx only, thrice in the neck only, and five times in both places. He uses a conveniently guarded knife, the blade of which is uncovered at the very time it is wanted, and then covered again, so that all possibility of accident in introducing or withdrawing the knife is avoided. At the moment when the knife enters the abscess, the tip of the left forefinger is used to depress the epiglottis and shut the larynx.

SAMUEL GEE, M.D.

Treatment of Scarlet Fever.—Medicines.

As early as possible after the recognition of the disease, and before the fever has attained the extreme of violence, I have derived much satisfaction from the beneficent action of *hyposulphite of soda*. My friend, Dr. M. J. Moses, has a formula to which I commonly resort:

℞. Soda hyposulphite, grs. lxiv.
Syr. tolu, - - ℥j.
Aq. cinnamomi, - ℥iij. M.
S g. A teaspoonful every two hours. (Two grains of soda hyposulphite in each dose.)

In certain other forms of disease, I consider the hyposulphite of soda as possessing almost the qualities of a prophylactic when employed in time. It is certainly actively eliminative. It is not intended to supercede the fever-powder at any time. They are to be taken conjointly, and at alternate intervals, which will not cause mutual interference.

Where we have diphtheritic involvement, I have found much satisfaction in the use of what was suggested by Dr. A. Jacobi:

℞. Acid. carbolic. solut., gtt. x.
Chlorate sodæ, - - ʒij.
Aq. distil., - - ℥iv. M.
Sig. Teaspoonful.

As an agent in the prompt elimination of the poison, and as a general tonic and sustaining medicine, I have a formula suggested by Dr. James R. Leaming, and slightly modified by myself:

℞. Ammon. murias,
Potass. chloras, - aa ʒj.
Ext. bellad. (English) gr. ss.
Tinct. ferri. mur., - - ʒj.
Aq. cinnam.,
Aqua, - - - aa ℥ij. M.
Dose, from thirty to sixty drops, repeated every two or three hours.

This medicine, or some essentially similar preparation, cannot be dispensed with throughout the entire course of the disease, even long after the fever, as an objective symptom, has disappeared. It both neutralizes and expels the specific poison, and gives nature a chance to rally on the basis of her own and other judiciously supplied resources.

In the matter of inunction, I would call your attention to a mixture which seems to have the property of preserving the caloric to a degree not much inferior to that possessed by the butter of cocoa in the direction of its withdrawal. It is of importance to have such a preparation, for there are times when the sudden sinking and exhaustion of the vital powers necessitate the substitution of calorifics for refrigerants. This can only be a temporary condition at any time during the active progress of the disease, but during early periods of invalescence it is often the case that the temperature runs down to a point requiring some prompt and special efforts to induce reaction, and I have found the following formula of great value:

℞. Ol. olivæ,
Glycerine puræ, aa ℥ijss.
Salut carbolic acid, gtt. x.
Ess. rose-geranium, gtt. xx. M.
Ft. lotio.

As a liniment for the throat and chest, as occasion requires, I commonly use the camphorated oil and oil of turpentine in equal proportions, applying the same with cotton-batting and oiled silk.

It not unfrequently becomes necessary to take some measure for restraining the undue action of the bowels. Among the many medicines in ordinary use, I find the tannic acid in mucilage of gum-acaciæ, in proportion of eight grains to the ounce, the most uniformly successful in overcoming the relaxation.

Diet.—Very much might be said upon the subject of diet in scarlet fever that would apply with equal aptness to many other forms of sickness, but alimentation in scarlet fever is, or ought to be, a very simple matter. In extremely grave cases of the disease, I scarcely look beyond milk for the alimentary nourishment required. Milk may be plain or condensed, warm or cold, even ice-cold if preferred. It may be reënforced with diffusible stimulant, or with egg, or it may be simple but well-made ice-cream. It is fluid or dissolvable food that is needed, ripe with nourishing properties, and rendered stimulating or not, as the case may require. Milk, generally simple, but at all events to serve as a basis for other simple sick-room preparations, is all that is required. It must be plentifully supplied, and very fresh. Ice-cream, usually so palatable and acceptable to the stomach, is, in this disease, a food of unparalleled excellence. Made of pure cream, it will nourish the body as well as the body will consent to be nourished. During convalescence, farina and corn starch gruels or puddings, and plain rice puddings, are good. Oyster broth I have found very acceptable, and something of an appetizer. If cod-liver oil is indicated, but cannot be tolerated, pure fresh cream of milk will answer just as well, if not better. Fruits are generally allowable, especially after exhaustive, restless nights. Lemon-juice, to regulate the action of the hepatic function, is very serviceable.

Gelatine jellies are gratefully taken, and are doubtless very nourishing. If medicine is to be taken (and here I hope I shall not be regarded as indulging in a triviality), I have conceived quite an affection for the enticing qualities and merits of the confectioner's "soft gum-drop," both before and after the act. It serves as an efficient aid and inducement to submit to the dose.

Of course, not a shred of meat or meat-essence is allowable until all danger of kidney complication is passed, if we would lean loyally upon the side of caution. Cold water, always craved, is, in my judgment, ever permissible in plenty. If the stomach rejects water, the thirst may be assuaged with pellets of ice allowed to dissolve in the mouth, or, with very young children, teaspoonfuls of ice water very often administered In the throat complication, the grateful impression of ice water swallowed is a very noticeable fact, and may be regarded as a remedial adjuvant —George Bayles, M.D., *New York Medical Journal.*

On Some Recent Results in Pathological Histology, and On Scientific Therapeutics.

Dr. Fox, in a paper "On Some Recent Results," &c., says: Much of what seems unscientific in our practice depends upon the very anxiety for our patient's life. In fever, for example, one may think the poison itself the all-important element, and in treatment may favor elimination; another may fear lest the high temperature may destroy life, and use all his energy towards its reduction; another may watch the patient's strength, and do little but feed or stimulate. In all the result may be good. In all, paradoxical as it may sound, a real step forward has been made towards scientific therapeutics. But when in ague we see the pyrexia, the splenic enlargement, and the absence of urea in the urine—and by quinine treatment the subsidence of all pyrexia, the diminution in the volume of the spleen, and the reappearance of urea, it is impossible to deny that here our therapeutics are scientific. Nay, more! by means of our therapeutics, we are nearer an accurate understanding of the morbid phenomena.

The same may be said of other diseases, of the pathological anatomy of which we know little or nothing. We can often treat with success affections such as epilepsy, chorea, delirium tremens, spinal irritation, and that strange spinal jar with which we are now so conversant as the result of railway accidents. It is not too much to say that the therapeutics of these affections have shed some light on the nature of the affections themselves. Such examples might be multiplied.

The action of diaphoretics, of many diuretics, and of most of the purgatives, the *modus operandi* of the alkalies on the urine, of ammonia in the treatment of arterial clot, of the bromides, of strychnia, and of ergot, are all illustrations of advance in our knowledge of scientific therapeutics; whilst at least as much may be said as to the mode of action of several of the sedatives and narcotics.

Experience itself is a scientific factor, on the ground that the same phenomena always occurring under similar conditions form a law. As to what is beyond and above that law, human reasoning will scarcely carry us. But it is incompatible with common sense not to be sure that laws so grand in conception, so minute in detail, necessarily imply the existence of a law-giver. And it seems to me impossible that any physiologist in the highest sense, or any worker in pathology, which is only physiology under different conditions, can be so blind to the plainest teachings of his own science as to deny the existence of a first cause. Such men are not numerous in our profession; and we shall all agree in some noble words of Lecky, in his *History of Rationalism*, with which I shall close this address.

"Even scientific men sometimes forget that the discovery of law is not an adequate solution of the problem of causes. When all the motions of the heavenly bodies have been reduced to the dominion of gravitation, gravitation itself still remains an insoluble problem. Why it is that matter attracts matter, we do not know; we perhaps never shall know. Science can throw much light on the laws that preside over the development of life; but what life is, and what is its ultimate cause, we are utterly unable to say. The mind of man, which can track the course of the comet, and measure the velocity of light, has hitherto proved incapable of explaining the existence of the minutest insect, or the growth of the most humble plant. In grouping phenomena, in ascertaining their sequences and their analogies. its achievements have been marvelous; in discovering ultimate causes it has absolutely failed. The first principle, the dynamic force, the vivifying power, the efficient causes of those successions, which we term natural laws, elude the utmost efforts of our research. We know nothing, or next to nothing, of the relations of mind to matter, either in our own persons or in the world that is around us; and to suppose that the progress of natural science eliminates the conception of a first cause from creation by supplying natural explanations, is completely to ignore the sphere and limits to which it is confined.—*The British Medical Journal.*

Diphtheritic Endocarditis.

Prof. Eberth states that in his researches on bacteritic mycoses, he has observed a special disease of the cardiac valves in pyæmic subjects, and considers that this is due to the small organisms which he has recognized as exciters of secondary suppuration. The disease presents the same characters as ordinary rheumatic endocarditis, and its seat is identical. Under the microscope the deposit appears to be chiefly made up of fibrin threads with large quantities of sphæro-bacteria, resembling those found in the diphtheritic condition of a wound and in embolia of the kidney. That the bacteria developed in the blood should congregate together and remain adherent to somewhat roughened surfaces of the heart is no more surprising than that the colorless corpuscles should be similarly found to form large coagula, and Eberth is therefore not inclined to agree with Hüter, that they have been transported in mass from the primitive focus of pus. Eberth does not agree with Klebs in regarding the diphtheritic fungus as a separate species, and in holding that both septicæmia and pyæmia proceed from another fungus, the *microsporon septicum*, but thinks that this fungus is identical with the microsphæra of diphtheria. Eberth, however, considers a distinction may be drawn between the septicæmic and the pyæmic diseases, since under the former are included those disturbances which may arise from chemical poisons, whilst the latter are caused only by bacteria. He agrees with Hüter in attributing great importance to diphtheria in the production of pyæmia; and the malign ulcerative endocarditis he describes in this paper he regards as strong corroborative evidence of his view, since it is quite independent of traumatic diphtheria, and constitutes a perfectly independent process, presenting, however, all the symptoms and characteristic morbid changes of pyæmia.—*Virchow's Archiv*, lvii. 2, 1873.

Treatment of Hæmorrhoids.

In the article on this subject in the just published part of the *Dictionnaire de Médecine*, M. de Lannelongue mentions the following plans of treatment that have been suggested: 1. Incision. This should be free, and after having been made the contents of the tumor should be squeezed out. Relapses often occur. 2. Extirpation. This may be total or partial, and may be accomplished with the bistoury, with scissors, with a ligature, or by means of the écraseur. When excision is practised with the bistoury or scissors, care should be taken to leave a little of the skin at the base of the tumor lest retraction of the anus follow, and also to prevent serious hemorrhage. Removal by the écraseur is followed by little bleeding and no pain, but pyæmia is unfortunately not an unfrequent result. The rule laid down by Gosselin is an important one, namely, never remove simultaneously internal and external hæmorrhoids. The former disappear, or at least lead to no accidents, when the latter are cured. 3. Cauterization. Three principal modes of effecting cauterization have long been in use, namely by the actual cautery, by solid, and by liquid caustics. Red-hot iron was applied as long ago as the time of Hippocrates. When adopted, it should be done thoroughly. Richet, combining écrasement with cauterization, uses forceps, which, brought to a white heat, are made to constrict the base of each hæmorrhoidal tumor, leaving some space between each point of application in order to prevent retraction of the anus. Jobert de Lamballe has invented a peculiar kind of forceps, which embrace the tumor and permit the ready application of the cautery without any risk of injury being inflicted on the skin. The action of Vienna paste can thus be easily localized Amongst the solid and liquid caustics, the caustic of Filhos and nitric acid are the best.—*Noveau Dictionnaire de Médecine et de Chirurgie*, 1873, p. 431, tome xvii.

Mettenheimer on a Fatal Case of Thrush (Oïdium Albicans).

Dr. Mettenheimer (*Betz's Memorabilien*, vol. xviii, part 6), says that apthæ on the mucous membrane of the mouth occur in old people not merely as a sympton of gastric disorders, and in dyscrasiæ and the last stages of exhausting diseases, but also as an independent malady; *i. e.*, on the basis of catarrh of the mouth, just as thrush is met with in infancy. He published a case in *Betz's Memorabilien* for 1863, which terminated favorably. But thrush may sometimes end fatally, even when it seems to be idiopathic. This was the case in a road maker, aged seventy, who suffered from a neglected and irreducible inguinal hernia, which often induced stoppage of the bowels. Except for this, he was a fairly strong man. Although not entirely indigent, he was very miserly, spent very little on himself, ate but little, and neglected cleanliness. His bowels had not been moved for eight days, when he was at last induced to seek medical aid. Dr. Mettenheimer found him in bed, very feverish, without appetite, and complaining of his throat. His tongue was covered with a thick white fur, and a thick whitish membrane covered almost all his spongy gums, but on their margins consisted of solitary patches. Its thickness was greatest posteriorly and inferiorly. At the first glance, it might easily have been mistaken for a diphtheritic membrane. The case was treated with stimulating clysters and purgatives, a d gargles of potassic permangate were ordered, whilst the cavity of the mouth was to be painted with tannic acid dissolved in Hoffman's ether, and rubbed with rags soaked in rum. The membranes were easily detached, and the spots which they had covered showed the mucous membrane still unbroken, although reddened in spots. These directions for cleansing the mouth from the fungus vegetation (which the microscope showed to be a rapidly growing oïdium albicans) were not properly carried out, on account of the obstinacy and indolence of the patient, who persistently opposed all the means adopted for his relief. The fungi were thus allowed to grow again from day to day, and filled the whole oral cavity, in such a way that when the man opened his mouth, thick white threads might be seen stretched across it in all directions like cobwebs ('*spinnwebenartig*). Brought to this pass, the man lost all desire of either eating or drinking, and began to cough, because the fungi began to invade the glottis, and died eleven days after the last relief of his bowels. (Dr. Mettenheimer has recorded a case of fungi extending to the larynx in apthæ occurring in a child, in the *Memorabilien* for 1866, pp. 8, 9.) No doubt the origin of this fungous disease must be sought in the advanced age, indolence, want of cleanliness, and imperfect nutrition of the patient. The proximate causes, however, would seem to be his extreme constipation, and what we may call a sub-paralytic condition of his digestive canal.—*The London Medical Record*: W. B. Woodman, M.D.

Luton on Cherry-Laurel Water as a Solvent for Hypodermic Injections.

In a letter to Dr. Constantin Paul (*Répertoire de Pharmacie*, June 10), Professor Luton says that no vehicle is better suited for narcotic substances, such as morphia and atropia, when administered subcutaneously, than the distilled cherry-laurel water. Besides adding its measure of hypnotic action to that of the principal medicament, it prevents better than any other aromatic distilled water the formation of mould which readily takes place in solutions for hypodermic injection, being in this respect equal at least to eucalyptus water. Its contact with the tissues does not cause more pain than ordinary distilled water. When cherry-laurel water is injected alone, its physiological effects are the same as when it is administered by the stomach, but in an increased degree.—*The London Medical Record.*

A Safe Method of Inducing Premature Labor. By Beverley R. Morris, M.D.

It is not my intention to enter upon the general subject of the induction of premature labor, or of abortion, as the case may be; nor of the rules, as to the amont of deformity, or of other causes, which may justify any operative interference. I will suppose that it has been decided to operate; and the question which then naturally arises is, What is the safest method of producing the expulsion of the fœtus? The ordinary means have usually been either the rupturing of the membranes, thereby causing the death of the child, and its ultimate expulsion as a foreign body; or the separation of the membranes from the uterus to a greater or less extent; or galvanism, but how applied I am not aware, except that it is external.

The rupture of the membranes or their separation is, without doubt, attended with considerable risk to the mother The fatal cases are, I believe, over 6 per cent; while the mortality of the children is 40 per cent. in the later months, and, of course, 100 per cent at the earlier dates. This serious mortality, even in the most skillful hands, must make us anxious to lessen the danger to both mother and child, if it be possible. I fully believe that this may be done. The indication seems to be to imitate the natural process of parturition as closely as possible; while, at the same time, the means used must be available, with certainty, whenever it may be thought desirable. I think that all this may be effected by the means which I am about to submit to the section.

The process that I have to describe is an adaptation of the third method of inducing labor—that is, by galvanism; but, as far as I am aware, by an entirely different application of the principle from any before attempted. The principle involved was introduced by Mr Dancer, of Manchester, many years ago, for the purpose of arresting *post partum* hæmorrhage, and this it undoubtedly effected satisfactorily; but the apparatus was so cumbersome, that few practitioners could carry it about with them, and, probably from this cause, I do not think it was ever generally used. The instrument invented by Mr. Dancer was so arranged that one pole of the galvanic current could be introduced into the uterus, while the other was applied over the abdomen; it was so constructed that either a continuous or an interrupted current could be applied. The instant effect was a powerful contraction of the uterus, and a consequent cessation of hæmorrhage.

The application of this principle to the induction of premature labor was made by Mr. John Varley, surgeon, of Nottingham, through whose kindness I am enabled to exhibit the instrument as modified by him. The mode of using this instrument is to insert the metallic point within the os uteri, and then, placing the other pole to the abdomen, pass a slight continuous current through the uterus for ten minutes or a quarter of an hour. This induces a dilatation of the os. which is further increased by substituting a larger conical point, and again continuing a gentle current for a few minutes. In each case in which this method has been used so far; labor has followed in two or three days; but, should this not be the case, it will only be requisite to apply the current daily until it does. The safest way is to expose the os uteri by a speculum, and then insert the point of the instrument through the speculum, which may then be withdrawn over the instrument The great portability of the instrument and battery will allow it to be readily carried in the pocket, and it is always ready for use at a moment's notice; and the induced current seems to me amply sufficient for the purpose. The arrangement for giving a continuous or broken current is very simple, and entirely and instantly within the operator's power.

The instrument consists of a metallic sound, covered, except at the point, with a non-conducting material, and having a metallic connection at the handle, and so arranged as to be either broken or continuous by a touch of the finger. The intermediate part is connected with one pole of the battery; while the other pole is attached to a metallic tube or conductor for external application, either direct or through the hand of the operator The extreme portability of Gaiffe's battery led Mr. Varley to this adaptation, which, I trust, will soon be widely used, and lead to a safer and more efficient method of inducing uterine contraction than any at present in use. It is manifest that there are other cases in which it may be most usefully applied, as, for instance, in sluggish or atonic labor, and other similar states.—*The British Medical Journal.*

On Chronic Bright's Disease. By T. Grainger Stewart, M.D.

The author first insisted upon the fact that the term chronic Bright's disease in reality includes three different processes and their combinations; although from the latency of symptoms and the chronic course which it usually follows, the term is specially applicable to the cirrhotic, gouty or contracting form. He referred to one instance of waxy disease which he had watched for eleven years, and to one of inflammation which he had watched for seven years, besides others which, though not so prolonged, were unquestionably chronic. A granular condition of the kidney—*i.e.*, unevenness of surface—occurs in all the forms of Bright's disease if the cases be sufficiently prolonged. Dr. Stewart then discussed the pathology of the cirrhotic kidney, described and commented on the theories of Gull and Sutton and of Johnson, and that maintained, among others by Dickinson and the author himself. After satisfying himself regarding the exact appearances to which Sir W. Gull and Dr. Sutton had applied the term "hyalin-fibroid" formation, he examined carefully the vessels of the pia mater in twenty-three cases, and found in a considerable number the appearance to which they referred; he found also that a similar appearance may be artificially produced by soaking in glycerine or acidulated fluids. The thickening of the outer coat, however, bore no special relation to cirrhosis of the kidney, being absent in some cases, and present in others in which the kidneys were healthy. Thickening of the middle coat was present in a large proportion of his cases of chronic Bright's disease, whether cirrhotic or inflammatory. The appearances described by Dr. George Johnson admirably corresponded to what he regarded as the third stage of the inflammatory form; but in true cirrhosis he had never failed to find increase of connective tissue. He therefore believed in the correctness of the views advocated by Dr. Dickinson and other writers. In speaking of the clinical history, he founded his observations upon two tabulated statements; one, giving the complications which existed in each of thirty-six cases examined after death; the other, showing the leading clinical features of a series of twenty cases which he had examined closely during life. From these tables he showed that the disease—*i. e.*, true cirrhosis—is essentially chronic; that it specially affects the male sex; that it is most common between the ages of forty and sixty, but occurs not unfrequently between twenty and thirty, or even at an earlier age; that it is specially connected with intemperance, while the other forms of Bright's disease are not; that it is also associated with lead-poisoning and with gout; that its origin is insidious, marked by no definite symptoms, and its course very chronic, that it is unattended by dropsy, unless in advanced stages or when inflammation is superadded; that the quantity of urine is at first natural or small, although frequently greatly increased in the advanced stages; that the specific gravity is generally low, and the quantity of urea diminished, while a few hyaline and granular tube-casts may usually be found on careful examination; that, as the disease advances, the heart becomes hypertrophied, the arteries thickened, their muscular coats increased; that hemorrhages are common, especially from the kidneys, the nose, and the uterus; that there is a marked tendency to gastric derangement and sometimes to diarrhœa; that bronchitis, congestion, œdema of the lungs, are frequent results, and often prove fatal; that among the nervous symptoms neuro-retinitis, convulsions, severe headache, and coma, are frequent results, delirium and acute mania more rare; that the disease often exists for years unsuspected, and is only discovered when important complications, especially those of the nervous system, occur.

Dr. Sutton remarked that Dr. Grainger Stewart said that he had found the outer coats of the arterioles thickened by fibroid material, but he had failed to find this change in the vessels of the pia mater in some cases where the kidneys were granular and contracted; and he had found the vessels in this manner diseased where the kidneys were not contracted and granular. Dr. Sutton had also observed that the arterioles of the pia mater were not thickened in some cases, where the kidneys were granular, but the capillaries seemed altered and thickened by homogeneous or fibroid material; and in some of these cases where the vessels of the pia mater were seemingly healthy, he found hyalin-fibroid changes in the arterioles of the skin and other parts. In some cases, the only part of the body microscopically examined was a small piece of the pia mater. It was therefore possible that the vascular disease existed in other parts and escaped notice. In by far the majority of the cases in which hyalin-fibroid vascular changes were found, the kidneys were granular and more or less contracted. In some, the kidneys were healthy, but the heart was hypertrophied, as in Bright's disease; and in two cases, this vascular disease was found in connection with atrophy of the brain, whilst the kidneys were healthy and the heart but little or not at all hypertrophied. These facts led to the conclusion that the fibroid changes might be local or general; and taking into consideration the clinical, etiological, and histological facts of the disease, it seemed that this morbid state, for which the term "arterio-capillary fibrosis" was suggested, might begin in the kidneys, the pia mater, brain, lungs, or other parts. It was apparently a common morbid condition after the age of fifty; and persons in whom the vessels were undergoing these fibroid changes, might die not only of kidney disease, but of other local affections. Dr. Sutton further said that there were other questions in Dr. Grainger Stewart's paper to which he would have an opportunity of referring in a communication which Sir William Gull and he proposed soon to place before the profession.

Dr. Dickinson generally assented to the views expressed in the paper, but wished to remark upon one or two points. He understood Dr. Grainger Stewart to express the opinion that the kidneys sometimes acquired a granular surface from disease limited to the tubes. He had seen many instances in which the kidney had wasted in consequence of disease thus limited, but believed that granulation of surface, restricting this term to the production of alternate elevations and depressions, did not occur except as the result of intertubular fibroid thickening with subsequent contraction of the interstitial growth. This fibroid thickening was common in the ordinary form of granular degeneration, and was found also in lardaceous change. He believed that nodulation of surface, in which sense he used the term granulation, was always dependant on excess of fibroid growth. This, no doubt, sometimes took place in kidneys primarily affected by disturbance limited to the tubes—the change in these cases had extended from the tubes to the interstitial tissues. As a general law, granulation—limiting the term to superficial nodulation—implied fibrosis, though this fibrosis might spring from different causes. When the kidney had shrunk from simple destruction of the tubes, the surface, though not always perfectly even, was never affected as described. The greatest interest at present attached to the relation of the thickening of the arteries to renal disease. He had no doubt that these vessels were, under renal disease, thickened throughout their whole structure, in their fibrous coats as well as in their muscular. He had satisfied himself that the fibroid thickening described by Sir William Gull and Dr. Sutton was a pathological fact, and not the result of reagents. He considered the change in the arteries to be of a complex kind—hypertrophy associated with alteration and degeneration of structure. The question next arose as to the relation of this arterial change with renal disease. Dr. Bright considered the hypertrophy of the heart found with granular degeneration of the kidney to be due to a change in the blood, which caused it to pass with increased resistance through the capillaries. Dr. George Johnson attributed the thickening of the vessels to efforts which they made to keep the blood out of the tissues, while the heart became hypertrophied by its endeavors to force it in. Thus the heart and the arteries were hypertrophied by mutual conflict, as if animated by antagonistic volition—a view which presented nature in an inharmonious attitude. Between the heart and the arteries, we could not tell which to encourage or which to wish success. At the same time, though he did not accept Dr. Johnson's explanation, he gave him full credit for his observation of the arterial thickening. With regard to the view of Sir W. Gull and Dr. Sutton, according to which the heart and the kidneys were affected simultaneously, but independently, as the result of general fibrosis, further observations were needed. Some objections could be urged to this view, especially the general absence of fibrotic change, save in the kidney and the arteries. The liver war rarely cirrhosed in the cases in question. Then, again, the arterial affection was occasionally found where there was reason to suppose that the kidney had suffered in consequence of a purely local change, such as obstruction caused by a stone. He was disposed to look upon the arterial change as consequent upon the renal, rather than as connected with it only as having a common origin. He thought the renal condition was primary, the arterial secondary, the hypertrophy of the heart tertiary. A less degree of the arterial alteration was sometimes found with kidneys affected otherwise than with granular degeneration. When granular degeneration existed, the arterial change was, as far as he had seen, always present Two cases of this disease, fatal under the age of 14, had come under his notice; in both, the arterial change was marked. In such cases it was not easy to recognize any influence allied to senility. Any conclusion on the subject, however, he regarded as only provisional; not that the subject involved any special difficulty, but because problems were involved which required time for their solution.

Dr. W. Roberts (Manchester) said he was hardly prepared to take part in a discussion which turned wholly on pathological facts. His attention had been called more especially to the clinical aspects of the malady; nevertheless he was quite prepared to say that the reception which Sir W. Gull and Dr. Sutton's paper had met was hardly justifiable. He had listened to the paper and the remarks on it with great interest.

Dr. Gairdner (Glasgow) said that, like the last speaker, he was scarcely entitled to take part in a purely pathological discussion, as his opportunities of continuous study, from the anatomical and histological point of view, had of late years been few, and most of the disputed facts referred to were beyond his personal knowledge. He had, however, listened with great interest to Dr. Grainger Stewart's paper, and was disposed to concur in many of his conclusions. There was obviously a difference of opinion as to the use of the term "cirrhosis" in the case of the kidney; and this encouraged him (Dr. Gairdner) to remark that, in his own early studies upon the subject, he had been by no means convinced of the occurrence of *primary* intertubular changes in these cases, being rather of opinion that the apparent excess of the fibrous element was usually, if not always, the result of atrophic changes in the other elements, and of retrograde metamorphosis in the tubular and vascular tissues. The granulations, so-called, were simply the still pervious, or, at all events, turgid tubules with their contents, surrounded and demarcated from each other by masses of shrunken and atrophied convolutions, in which fibroid tissue represented the remains of all the other elements that had in great part disappeared. Dr. Grainger Stewart appeared to recognize this as, at least, one way in which kidneys might become granular, but he argued for a distinction from this of what he called "true cirrhosis;" the latter being always dependent upon intertubular changes, as described by Virchow, and also by Dr. Dickinson, who, however, thought that all cases of nodulation or of granulations proper were due to primary intertubular changes. It was necessary to remark that the word granulation is often used equivocally, the yellow opacities, so well figured by Dr. Bright, and which we now know positively to be dependent upon degenerative changes within the tubules, being as often as not called granulations; while Dr. Dickinson's use of the word referred entirely to the nodular condition of the surface, which was undoubtedly atrophic, and had no necessary connection with the other. Notwithstanding the high authorities to whom he had referred, he (Dr. Gairdner) was still not entirely convinced of the intertubular origin of granulations; but, if Dr. Stewart should succeed in establishing the pathological distinction and mode of origin of his "true cirrhosis," then the clinical history he now gave of it, and the view so clearly presented of its complications and pathological associations, would be fruitful in valuable results. To him (Dr. Gairdner) it had always appeared that the majority of cases of chronic Bright's disease were not of *inter*-tubular, but of *intra*-tubular origin, and their true analogue was to be found in the various forms and stages of chronic capillary bronchitis, in which we find—(1) A leakage of the albuminoid elements of the blood, followed by (2) various degenerative changes in the epithelium, etc., extending over the interior of the ultimate bronchi, air-vesicles, and intercellular passages; (3) atrophic changes, leading, in some cases, to over-expansion; in others, to an almost entire disappearance of the textures of certain lobules, with correspondingly impaired function; (4) a frequent appearance of fibrous overgrowth, both in the emphysematous and the condensed and atrophied parts, between the remaining active lobules. In one point he was able personally to corroborate Dr. Grainger Stewart's clinical observations on the atrophied or cirrhosed kidney. It was a surprising fact, but still no less a fact, that a kidney in this condition might continue secreting an over-copious though depreciated urine, long after it had apparently ceased to contain almost any sound secreting structure, and after its actual bulk had been reduced probably by two-thirds.

Dr. J. M. Fothergill (London) said that some time ago he held several conversations with Professor Traube, of Berlin, as to the changes in the vascular system which followed upon chronic Bright's disease. Traube held that there were two forms of change—1, a degeneration of the coats; and, 2, a true hypertrophy of the muscular walls of the arterioles. According to Ludwig and himself, this latter change was brought about by repeated spasm in these small vessels, from the action of the products of histolysis in excess in the blood upon the vaso-motor centre. This change in the arterioles caused obstruction to the blood-flow, and hypertrophy of the left ventricle followed; and the action of the two hypertrophied muscular ends of the arterial system against each other led in turn to overdistension of the elastic tubes connecting them, and so to atheroma. Thus rupture of a vessel in the heart was common in these cases. As to Dr. Grainger Stewart's remark, that in time all kidney-disease tended to cirrhosis, he thought we should not overlook the effect of sustained hyperæmia in leading to an excessive growth of connective tissue. Such growth occurred in the brain, lungs, liver, and spleen, after prolonged hyperæmia; and its presence in the kidney under similar circumstances was but what might be expected.

Dr. George Johnson said that to discuss in a crowded room questions based upon minute points of anatomy, without the opportunity of appealing to specimens actually present, was in a high degree unsatisfactory. He would not occupy time by entering upon the disputed question of the intertubular character of the changes in the small granular kidney. He was prepared at any time to demonstrate by the aid of numerous specimens that the chief and essential changes were intratubular; and he remarked that those who adopted Virchow's doctrine did not even attempt to explain the striking appearances presented by the tubes which have been deprived of their epithelial lining—appearances which many years ago had formed the subject of a friendly controversy between Mr. Simon and himself, with reference to the minute anatomy of renal cysts. He was glad to hear that Dr. Grainger Stewart recognized the reality of hypertrophy of the minute arteries. Dr. Johnson, however, wished to say emphatically that the arteries of the pia mater, which had been chiefly examined by Dr. Stewart, were less constantly and decidedly hypertrophied than those in the kidney, in the skin, and in the mucous membrane of the intestines. Hypertrophy of the arterial walls implied a proportional overgrowth of all the tunics, of the external fibres as well as of the middle muscular. Dr. Johnson admitted the existence of atheromatous fatty, calcareous, and lardaceous degeneration of the arterial and capillary walls. He admitted, as did all pathologists, that inflammatory and tuberculous exudations often occur abundantly in the fibrous tunic of the minute arteries; but, after a careful examination of the specimens exhibited by Dr. Sutton the day before in the museum, he saw in them nothing pathological. Three specimens of pia mater arteries mounted in glycerine had the fibrous tunic of the arteries distended and rendered hyaline; while in a fourth specimen, preserved in strong spirit and water, the arterial tunics were all corrugated, and the external tunics rendered coarsely fibrous; the changes being all artificially produced.

Dr. Sibson remarked that the discussion had been carried on by six of the men who had done more than any others to advance our knowledge of this important question. Although some of the speakers held strong and original views, yet each evidently aimed not at the triumph of his own views, but at the discovery of truth. Indeed, all felt that, if any two of the speakers, however apparently opposed in opinion they might be, came together quietly, as Dr. Johnson had suggested, with specimens and microscopes before them, they would, without difficulty, ascertain the truth and come to a common opinion. It was evident, from the important communication of Dr. Grainger Stewart, containing a great body of facts bearing on the subject, and the discussion that ensued, that two different conditions of the artery were under examination. One of these conditions was degeneration of the walls of the small arteries, which was apt, like atheroma, dilatation, and aneurism of the aorta, to take place in spirit-drinkers, which might be present with contracted kidney, that kidney-disease being also caused by spirit drinking, but which might be, and often was, present without contracted kidney. The series of cases occurring in the Edinburgh Royal Infirmary, and observed and brought forward by Dr. Grainger Stewart, conclusively supported this view. The other condition was thickening of the muscular structure of the artery, which was present in the majority of cases of contracted kidney, though absent in a considerable minority of them, which was generally associated with thickening and enlargement of the left ventricle, and which was seldom observed in cases in which the kidney was not contracted. As a clinical worker, the speaker had for years observed, and carefully recorded, the effects of contracted kidney on the condition of the heart and arteries. In those cases he generally observed, though not always, tension of the arteries, evidenced by feeling, not the pulse, but the radial artery itself, tight and full under the finger, and capable of being moved backwards and forwards, and yet not presenting the hard, beaded surface of atheromatous artery; the pulse being, at the same time very feeble and soft, and in marked contrast to the tight condition of the artery. The sphygmographic tracings of the pulse gave evidence of the great arterial tension. The ascending aorta presented the signs of great tension and enlargement. The first sound was very feeble, often quite absent, owing to the blood being gradually injected into an artery already tense with blood, and the second sound was loud, ringing, and extensive, especially to the right of the upper sternum The impulse of the enlarged and tense artery could, in some cases, be felt beating in the second right spaces; and in these and other cases in which the pulsation of the artery could not be perceived, sphygmographic tracings were obtained by placing the sphygmograph and. on some occasions, the modified cardiograph over the ascending aorta. In some instances, the size of the aorta increased to such an extent, that a diastolic aortic murmur was audible, owing to slight regurgitation from insufficiency of the aortic valve; and, in one case recently observed, the diastolic murmur appeared and disappeared on several successive occasions, the alternate appearance and disappearance of the murmur being evidently associated with the alternate increase and diminution of the tension and size of the arch of the aorta. The left side of the heart was at the same time, in these cases, enlarged and beating over a large area, and with increased force, and doubling of the first sound was audible over the interventricular furrow, and sometimes over both ventricles, the *finer* first sound due to the closure of the contraction of the right ventricle, the second *finer* sound to the delayed closure of the contraction of the left ventricle, owing to the difficulty with which it emptied itself into the tense arteries, and the increased time therefore required. The tension of the arteries, the thickening of their walls, the enlargement and thickening of the left ventricle, were all due to one common cause—the difficulty of sending the poisoned blood, poisoned owing to the kidney-disease, through the smaller vessels. The paper read by Dr. Grainger Stewart, and the discussion, had done much to make this difficult, and apparently contradictory, question clear, and to show that we have to do not with one, but with two conditions—one, degeneration of the arteries; the other, thickening of their muscular fibres. The thanks of the Section were eminently due to Dr. Grainger Stewart, and to the gentlemen who had taken part in the discussion, for this important contribution to our knowledge of disease.—*The British Medical Journal*: Discussion, at the Forty-First Annual Meeting of the British Medical Association.

An Address delivered at the Opening of the Obstetric Section, at the Annual Meeting of the British Medical Association, in London, August, 1873. By George H. Kidd, M.D., F.R.C.S.I.

Gentlemen,—It has fallen to me, as one of the Vice-Presidents of this Section, to occupy the chair to-day, owing to our President having met with an accident, from which he has not yet sufficiently recovered to enable him to take the place he would have filled much more worthily and much more to the advantage of the Section. When your Council nominated me one of your Vice-Presidents, I accepted the office, believing it would be altogether an honorary one; but, when I found, within the last few days, that it would be necessary for me to assume the responsibility of opening the proceedings of the Section, I regretted exceedingly that I should be obliged to occupy a position of such honor, and to address such a distinguished audience, even as deputy for another, without having had time for the careful and deliberate preparation the due performance of the duty would require.

It is one of the advantages arising from our annual meetings, and not the least, that we are led by them to pause for a time and review our position, and to ask ourselves, Are we making progress, are our labors so directed as to enable us to obtain the best results, or is it possible that we have been so occupied with particular branches of our great subject, that we have neglected others of equal importance? There is, I believe, no department of medicine, the recent progress of which has been so marked and so rapid as that of uterine pathology, and for this we are indebted, in a great degree, to two members of our Association, one of whom is, alas! no longer among us, no longer with us to stimulate us by his enthusiasm, to lead us on by his example, or to open new fields for us by his great inventive genius. The other (though absent to-day) we are proud and happy to have among us still, ardent and courageous as ever, and ever ready to assist and guide us by his matured experience. To these two leaders and their followers we are indebted for a knowledge of uterine diseases as perfect and as accurate as our knowledge of the diseases of any other organs in the body. Henry Bennet has taught us the pathology and treatment of the diseases of the neck, and Simpson has made our knowledge of the diseases of the body of the uterus equally accurate, and, by teaching us the use of the uterine sound and dilating tent, made the diagnosis and treatment of its diseases as simple as those of the more easily accessible parts.

Now the question I would here raise is, whether the very rapid progress we have made, and are still making, as to diseases of the uterus, has not led us away from the study of the diseases of other organs of not less importance, especially of the ovaries. That this question must be answered in the affirmative will, I think, be proved by an examination of contemporary literature, and, still further, by the frequent occurrence of cases where treatment directed exclusively to the uterus had quite failed to afford relief. That we should have fallen, in any degree, into this error is the more remarkable, because, in our standard works of a few years ago, such as those of Tilt, of Churchill, of West, and of others, the diseased conditions of the ovaries have been accurately and minutely described.

Dysmenorrhea is one of the diseases, in reference to which the tendency to refer all the symptoms to the condition of the uterus, and to neglect or ignore the influence of the ovaries, is perhaps most marked. That dysmenorrhea, dependent on an obstruction to the exit of the menstrual fluid from the uterus, is of frequent occurrence, no physician of practical experience can doubt. Moreover, that, when it does occur, it can only be relieved by treatment directed to the uterus, and of such a nature as will remove the impediment, is a matter of every day experience, and cannot be questioned; but, when we find it asserted that, without obstruction, there cannot be dysmenorrhea, or that obstruction is the essential cause of the disease, and that it can only be cured by removing this obstruction, then we are bound to enquire whether clinical experience will confirm the statement, or prove that it is one founded on a too limited sphere of observation. I shall ask you, then, to allow me to trace, in rapid outlines, the clinical history of dysmenorrhea, and to enquire into the varying nature of the symptoms we meet with. In the first place, I shall speak of cases in which the pain is, beyond a doubt, due to some cause preventing the escape of the menstrual fluid from the uterus.

The typical and most simple form of this class of cases is when the obstruction is produced by a small os uteri and narrow cervix. In a typical case of this kind, the condition of the os is a malformation, and is congenital; but it may also be an acquired condition, and is then the result of the contraction either of a cicatrix or of effused lymph. The impediment may, however, and often does, depend on other causes, such as a flexion, and then the symptoms may manifest themselves from the beginning of menstrual life, or not till a later period. A polypus, especially if so situated as to cause a valve-like obstruction, as in one of Marion Sims' cases, or the growth of a fibrous tumor, or some forms of inflammation, may also give rise to obstruction and dysmenorrhea as an acquired disease.

The pain in dysmenorrhea, depending on obstruction, commences either when the discharge is beginning to flow, or some time afterwards. Patients frequently say it begins some hours before the discharge; but, if an examination be made with the speculum when the pain begins, it will be found that the discharge is actually exuding from the uterus, though not in sufficient quantity to make its way out of the vulva and attract the patient's attention. When the obstruction is not very great, and the discharge scanty, the pain may not occur for some hours, until, in fact, the discharge becomes so copious, that it cannot escape through the narrow os.

The pain is paroxysmal in its character, and seems to depend on the efforts of the uterus to expel its contents. As soon as these efforts have so far overcome the obstruction as to allow the free escape of the discharge, the pain ceases. During the interval of menstruation, there is freedom from pain, and the general health may be unimpaired, but the same cause that hinders the exit of fluid from the uterus prevents, in general, the entrance of semen into it, and the result is sterility.

On examination, the impediment, its position, and true nature can be ascertained, and, in the majority of cases, it can be removed by means adapted to the circumstances of the case.

I have thus sketched the history of dysmenorrhea caused by obstruction to the exit of the menstrual fluid, chiefly from the facts recorded in my own case-books. From the same source, I have now to describe another form of the disease, one in which the symptoms are so different, that it is impossible they can depend on the same condition. In these cases the disease, instead of being usually congenital, is always acquired. It may be in early girlhood, or it may be after having given birth to several children. In one case, the patient had been married eighteen years and had no family. "While at school, through neglect," she said, "uterine disorder commenced, and has continued without intermission ever since." In another case, the patient had been married six years; she had had two children, the youngest nearly four years old. She had not nursed either. She had never recovered thoroughly after the birth of her last child, but it was only within the last year menstruation became painful. In another, the disease set in after the birth of the third child. The patient became pregnant a fourth time, and nursed this child three months; but she was in bad health all the time of her pregnancy and while nursing. When menstruation returned, after weaning the child, it was as painful as ever. In many cases, the disease supervenes on the mechanical dysmenorrhea, but the symptoms are so different, that the patient can herself tell when this took place.

In the former group of cases, the pain commences simultaneously with the discharge or after it has appeared. In this the pain begins a week or ten days, or more, before menstruation, and at the same time that the pains occur in the pelvic region the breasts become painful, hot, swelled, and tender to the touch. The pelvic pains are spoken of as dull, achy pains; they are felt in the pelvic region, and extend down the thighs to the back. They are not the acute paroxysms of pain of the former cases; they are aggravated when menstruation actually begins, and often continue throughout the whole period, but more frequently are relieved as soon as the discharge is established. They then cease, and return on, it may be, the fourteenth day; that is, at the middle of the interval. This "intermediate pain," as Dr. Priestley calls it, may last only a few days, or it may continue and increase in severity till the next menstruation, the only interval of ease being for the first ten or twelve days after menstruation.

Menstruation in these cases is often irregular, generally retarded, sometimes it comes too soon, and in some cases, a whole month may be passed over, but the pain occurs when the menstruation is due, even though the discharge does not appear.

The discharge is generally scanty, but sometimes it is excessive. Its appearance is almost always preceded or followed by severe headache, often by vomiting, and during its flow, palpitation is often complained of, also frequent micturition, and sometimes tenesmus and kneading in the rectum.

Miss H. states that menstruation has always been painful during the first two or three hours, but for the last two or three years she has suffered very much from pain for a week before menstruation begins, and at the same time her breasts have also become very painful. She has had much palpitation lately, and severe headaches before menstruation begins.

Mrs. W., married seven years, no children, states that menstruation was always painful at the beginning, but, since marriage, she has suffered for a week before it begins, from pain round the sides, stomach, and back, and from pain in her breasts which become swollen. About five years ago, the os uteri was slit, after which she became pregnant, but aborted at the end of the third month. The painful menstruation continues, notwithstanding the operation and pregnancy. These were cases in which the form of dysmenorrhea, of which I now speak, supervened on that due to obstruction; on examination, in this latter case, the uterus was found normal in position and size. The os and cervix were quite healthy, but the os was very open in consequence of the operation that had been performed on it. The right ovary, however, was found to be swollen, and very tender to the touch.

In many cases, in addition to the symptoms already described, there is a constant dull, aching, sickening, pain in the back; and there is so much pain, *in coitu*, that all attempts at intercourse have to be given up. Mrs. C. has been married ten years, and has no family. For many years she has had painful menstruation, the pain beginning more than a week beforehand. The os uteri was twice slit, without in any way relieving the pain of menstruation. She has also had the orifice of the vagina dilated for the pain *in coitu*, but without benefit, On examination, the vagina admitted a full sized speculum with ease; there was no contraction or spasm at the orifice. The uterus was found with the cervix slit, but otherwise healthy, and the right ovary was lying in Douglas' space, somewhat enlarged and tender to the touch, the pain, on pressure on it, being of the same character as that caused by intercourse.

This prolapse of the ovary into Douglas' space was described by the late Dr. Rigby. It is a frequent accompaniment of the form of dysmenorrhea, now spoken of, and is productive of great pain *in coitu* If it should be the left ovary that is prolapsed, there is also pain in defæcation, and this pain and the pain in intercourse can generally be relieved by the use of the lever pessary of the late Professor Hodge.

It has been mentioned that, when the menstruation has missed, the pains occur at the time, notwithstanding the non-appearance of the discharge; and it may be further mentioned, that in some cases it continues for a year or more after menstruation has finally ceased.

When we make an examination in these cases, we may find the os uteri small and contracted; or the uterus bent on itself, or presenting evidences of endometritis; but that these are only complications, is made evident by the fact that in a large proportion of cases we find the uterus normal in position and size, and its tissues perfectly healthy. If we place the patient on her back, with her head and shoulders raised, and her legs well drawn up, and, having introduced the right forefinger into the vagina, make pressure with the left hand over the hypogastrium, we shall find the ovaries, which in the healthy state can seldom be recognized, one or both of them enlarged and very sensitive to pressure. If one of them should lie in Douglas' space, the true nature of the case will be recognized still more easily, and there will be no hesitation in referring the symptoms to their true pathological cause—subacute inflammation of the ovaries.

To understand clearly the sequence of the symptoms and their true nature, it is only necessary to bear in mind the function of the ovaries, and their sympathetic relations with other organs, especially the breasts; to remember that the ovaries preside over and initiate the process of menstruation; that in preparing for this, the Graafian vesicles, originally deeply seated in the substance of the organ, gradually enlarge and approach the surface till they become prominent, and then rupturing its coats, discharge their contents into the Fallopian tubes, thus constituting the essential part of menstruation. It is not necessary to dwell on the physiology of menstruation on such an occasion as the present; but, if we consider for a moment, as was suggested by Dr. Meigs, the pain and various reflex irritations that so frequently attend the performance of another physiological process—dentition—we will have less difficulty in understanding that pain and various reflex irritations may attend the growth of the Graafian vesicle, its approach to the surface, and its bursting through the coats of the ovary, if this organ be in an unhealthy state.

In dysmenorrhea arising from obstruction, we may speak with much confidence of effecting a cure by dividing or dilating the os uteri, or by other appropriate means. In dysmenorrhea caused by subacute ovaritis, surgical or other treatment directed to the uterus is of no avail, and, indeed, we must be very cautious in promising permanent relief. Leeching, especially at the anus, hot baths, hot syringing, sedatives to the rectum, counterirritation over the ovaries, the internal use of the bromides, and, above all, rest, and especially physiological rest, will procure relief, and in my hands have often done so after surgical operations have utterly failed.—*The British Medical Journal.*

On the Fillet or Loop as an Obstetric Aid, with Especial Reference to a New Modification of the Instrument. By R. Eardley Wilmot, M.B., Lond.

The author pointed out that the fillet was an instrument of great antiquity, but that it had fallen into disuse; that it was treated in our text books either with silent contempt or unqualified condemnation. In spite of this he believed the fillet to be a useful instrument. It may be used in cases where slight or great force is required, and, as a general rule, in any case where the head is clear of the os uteri. It is lighter, more portable, and can be used more easily than the forceps, and it does not frighten the patient. If desirable, it can even be used without the patient's knowledge. He had employed it in twenty-five cases. All the children had been born alive, and in only one was there slight rupture of the perineum. The fillet in its old form he believed to be difficult of introduction and adjustment, and liable to injure the child. Dr. Westmacott had improved it by rendering the instrument capable of being easily removed, one end of the loop being made so that it can be detached from the handle, but the difficulty of adjusting still remained. This the author overcomes by having the handle of the fillet divided longitudinally, so as to leave one end of the whalebone loop attached to each section of the haft. The two portions are separable at pleasure, or united, when compressed, by steel pins projecting from one half of the handle and perforating the other. The instrument may be introduced as usual. Let one-half of the handle then be taken in each hand, and by a gentle sawing movement in the direction required, and by pressure on each limb alternately, the loop is readily brought into its due position.

Dr. Westmacott said that four years ago he had shown the Society his fillet with the improvement of being able to remove the end of the whalebone loop from the handle. The idea struck him then of dividing the handle, but wishing to keep the instrument as simple as possible, he had abandoned it. He had since added a strong india-rubber ring, which slides up and down the loop, to make it more portable and to compress the head of the child. He objected to the author's plan of applying the loop over the chin, as it might slip towards the neck and strangle the child. He usually applied it over the eyebrows or nose, and he had not seen any other bad result than a slight mark which disappeared in a few days. He thought the loop of the instrument now exhibited too thin. Its sharp edges might scratch the skin, or twist or split. He had used his own fillet sixty or seventy times, and with favorable results in almost every case.

Dr. Aveling thought obstetrical writers very properly omitted any lengthened description of the fillet. Compared with the forceps, it was an unscientific instrument. Its liability to slip had been observed long ago, and Levret, to prevent this accident, added a third branch. This same modification had been a short time since reinvented by Dr. Sheraton, and he was sorry to say also patented. If the fillet were hooked over the chin, as recommended by Dr. Eardley Wilmot, there was a chance of its slipping round the neck and producing strangulation; and if over the nose or brow, as advised by Dr. Westmacott, it might injure the former or slip off the latter. The instrument might answer when slight traction was required, but he would be sorry to have to rely upon it where largeness of the fetal head and rigidity of the maternal passages demanded the exercise of much force.

Dr. Playfair believed that the reason why the fillet did not sink into well merited oblivion was the appearance of simplicity about it, and the fact that it could be used without the knowledge of the patient, this latter being, in his opinion, one strong reason why it should not be used. But the truth was, as Dr. Aveling had remarked, that the fillet was essentially an unscientific intrument. If it were applied when the head was high in the pelvis, traction over the face would necessarily produce extension of the chin before the time of that change had arrived. Another strong objection to the fillet was that it drew attention from the forceps—an instrument perfect in its adaptation to the natural mechanism of labor.

Dr. Eardley Wilmot found his own fillet much more easy to use than Dr. Westmacott's. He did not think there was fear of strangling the child or of the loop slipping; nor did he think the fillet an unscientific instrument, or likely to interfere with the natural course of labor. He never intended to place it in competition with the forceps as a means of delivery in difficult labor — *Obstetrical Journal:* Proceedings of the Obstetrical Society of London.

On Peri-Uterine Inflammation. By H. S. Halahan, L.K. and Q.C.P.I., &c.

The following case occurred lately in my practice, and is (I think) of sufficient rarity, interest and instruction, to be laid before you. I will do so, with your permission, by extracts from my note-book. A young woman, who had been eight months married, called upon me in last January, complaining of great pain in the lower part of the abdomen, sickness of the stomach, great nervousness, and amenorrhea for the past two months, together with a slight enlargement of the abdomen. She was very anxious to know whether she was pregnant or not. Upon questioning her I found that the sickness took place every morning, sometimes continuing throughout the entire day; that she had attacks of nervousness and slight shivering during the day; that the pain over the uterus was continuous, the bowels confined, the water scanty and high colored, and the pulse 88. I first examined the breasts, which did not indicate pregnancy; then I passed my hand over the lower part of the abdomen, and found there was great pain over the uterus and in a considerable measure over the entire abdomen. I discovered also a fulness in the left groin, slightly painful. Upon examination per vaginam, I felt a distinct fulness, or tumor, at the left side; the uterus slightly enlarged, but otherwise normal. I would not, although pressed very hard both by herself and husband, say whether she was pregnant or not. I ordered her a slight aperient, together with a mixture containing spirits of lavender, aromatic spirits of ammonia, spirits of camphor, and tincture of henbane, which relieved her for a day or so. On the third day I saw her at her own house, she not being able to leave her bed with the sickness and pain in the abdomen, both having greatly increased since she was with me. Bowels had been freed; pulse

88; countenance pale and anxious; very restless and sleepless. Ordered a poultice of bran over the abdomen, not too hot; to take pills, with calomel and opium; to continue the mixture, and to use the following drink, viz.: an egg well beaten up, to which add one pint of good milk, one pint of cold water, and salt to make it palatable; let it then be boiled, and when cold any quantity of it may be taken. If it turns into curds and whey it is useless. I cannot give this drink too much praise. It has now stood the test of twenty-four years in may hands, and I must say that a marked success has accompanied its employment. You may give it in all forms of sickness of the stomach arising from whatever cause. It is also an admirable drink for infants with choleric diarrhea. I also told her to take a glass of sherry in a bottle of ginger-beer during the day. This drink often stops sickness of the stomach when other remedies fail.

From this to the seventh day nothing particular occurred, except that the sickness of the stomach was greatly relieved. On this day the left leg was painful and swollen, as were also the veins of the entire surface, which were red and hard; ordered her to continue the pill and other remedies, drink, &c. On the tenth day diarrhea set in, which necessitated the discontinuance of the pills. The left leg remained in the same state till the thirteenth day, when suddenly she complained of pain in the right groin and leg, which now became even worse than the left had been; and it was curious to observe that when the right one became affected the left one got well. There was a difference, however, between the two—as there was not any perceptible fulness in the right groin. The diarrhea having ceased, ordered her to renew the pills, to continue other treatment as before. Shivering had gone on daily, I may say from the first, and the pulse ranged from 80 to 96. The lower extremities were cold; the breathing sometimes very difficult, and the heart's action feeble. The stomach was able to retain some iced beef-tea and chicken jelly, together with a small quantity of wine during the twenty-four hours. The pills were continued for three days, when diarrhea again set in, which, however, I do not think was owing to the mercury, but rather to the swelling in the left groin, which I afterwards discovered to be an abscess, bursting into the bowels; she at all events passed pus from them. I discontinued the pills. The right leg became very large and painful, and the veins all over it as hard as whipcord. On the 19th day I had the able assistance and advice of Dr. Churchill, who, upon examination, found the uterus fixed with the pelvis tilted over to the left side. He ordered the pills to be renewed, the lower part of the abdomen to be stuped and poulticed, and the leg to be wrapped up in medicated cotton-wool, and to take as much nourishment as the stomach would bear. The pulse had risen, and was now 110. For the next week she continued in much the same state. The pain in the leg being very great, extreme pain was experienced if the limb was touched. The sickness of the stomach only recurred at intervals, and she was able to take nourishment and retain it. I gave her bark in effervescence, and twenty grains of chloral at night, which caused her to sleep a little. Dr. Churchill then again saw her, and considered that she was, if anything, a shade better, but still in a very precarious state. On the thirtieth day she complained much of a pain in her right side, and great difficulty of breathing. I passed my hand over the painful part and found the liver enlarged and congested, and all the veins in the same state as those of the leg—great pain over them. The veins both in the legs and over the liver gave me the idea as though they were injected with wax. The bowels kept regular; the urine was not so scanty; all through there was not much thirst. The pills were discontinued as the mouth got slightly touched. In two days after this, the veins all over the surface of the abdomen, chest, neck, and head, of the right side, became similarly affected. The right leg had by this time reduced greatly in size, the veins becoming softer and softer each day, till at length they became normal. No one could imagine the strange appearance she presented, the veins of the entire right side being prominent, hard, and quite plainly seen, and a blue hue all over the surface contrasting strongly with the other side. In three days she complained of great difficulty of breathing, and as if her heart were ceasing to beat, together with great annoyance whenever she lay on her back. I could not detect anything wrong with the heart, but, on examination, found her back to the right side, presenting the same appearance as the chest. This state continued for four days, she during all that time taking a fair share of nourishment, such as beef-tea, jelly, wild fowl, and about eight ounces of wine daily. She now began to get better, and by degrees the veins all over the right side of her body put on a natural appearance. The moment she was able, I had her removed to the country, and now she is as well, or, as she says herself, better than ever. I have endeavored to give an accurate account of this curious case without entering too much into details I note particularly with respect to it, the following points of interest—

1st. The sudden flight of the phlegmasia dolens from the left leg to the right, which was the more remarkable from the fact that there was an abscess in the left groin, which discharged itself per rectum, which would seem to indicate that the left side would be the one most seriously attacked, whereas in point of fact it became immediately well when the disease manifested itself in the right leg.

2d. The fact of the veins of the portal system, as also the veins of the front and back of the chest and abdomen, becoming one after another affected.

3d. That this woman had suffered from something of the same kind two years before, and I am enabled, through the kindness of the gentleman who attended her, to give you his opinion of the case. He says: "She suffered most severely from attacks of chronic phlebitis, as I thought, of the thigh and leg, amounting almost to phlegmasia dolens. This I connected in my mind with something uterine."

Since she has recovered she has menstruated, and the uterus is of a normal size.

Dr. Churchill said that, having seen the patient with Dr. Halahan, he would make a few remarks upon the subject. He thought then, and he thought still, that it was one of the most remarkable cases he had ever seen. First, there was the remarkable fact of the woman getting this phlegmasia dolens in such a marked form before she was married. That was not a common thing; and next, the sudden transference of the phlebitis from one leg to another. He was not sure that it did not throw some light on the true theory of phlegmasia dolens He thought that those who looked upon it as a retrograde process of inflammation from the uterus downwards fell into a mistake. He would rather adopt Makenzie's theory that the cause which excites phlebitis traverses the circulation and then excites it in the limbs, and the occurrence of the phlebitic affection here in the veins of the chest, abdomen, and back, would bear out that view.

Dr. Kidd said that there was a case on which he and Dr. Churchill were consulted independently of one another. The patient was the wife of a medical man, who wrote a very graphic description of her condition, and occasionally consulted them by letter, and even by telegram. It was a case of peri uterine inflammation, probably the result of some hematocele; and the point he would recall to Dr. Churchill's recollection was that the symptoms of phlegmasia dolens occurred first in the leg and afterwards in the left arm. It appeared to him that the phlegmasia dolens affecting the upper extremities threw some light on the pathology of the disease. Dr. M'Clintock published a case in which phlegmasia dolens, after attacking the left leg, attacked the left arm. With respect to its occurring before marriage, he had himself seen it in an unmarried woman and in a man occurring as a sequence of fever. It appearing first in the left leg and afterwards attacking the right leg was almost the natural history of the disease; in nine-tenths of the cases that was the course it took. It was said this was so because women lay on their left side in labor. Here was a case where the left leg was affected first and no labor, and the right leg affected afterwards—so that he did not think that explanation could hold good.

Dr. Henry Kennedy thought there was a constitutional tendency in some individuals to phlebitis; he alluded to the form that presented itself in phlegmasia dolens. He had seen five or six cases of it which he could not account for in any other way. He had seen it after fever, phthisis, diabetes, and even in cases of cancer. He believed that they would meet with constitutions that were, so to speak, given over to the disease, just as certain constitutions were liable to rheumatism or gout. The jumping from one side to the other was a very constant thing, as far as he had seen. He might mention that Trousseau had written a splendid essay on peri-uterine inflammation, in which he had touched on this affection in a masterly manner.—*The Obstetrical Journal:* Proceedings of the Obstetrical Society of Dublin.

Infantile Enteralgia.

Dr. John Boyd, in an interesting paper (*Edin. Med. Journal*, Feb., 1873) on an affection which he terms "infantile enteralgia," remarks: "In male children especially, from two weeks to four or six months, of a lively mobile temperament, we very frequently observe them subject to attacks of abdominal pain, which come on suddenly, generally at night, commencing at a little after twelve, and continuing with slight intermissions to four or five in the morning. The little sufferer draws up its knees and tosses about in the nurse's arms, the cry varying from an agonized scream to a plaintive wail, with intervals of sobs and long-drawn breaths; but neither the pulse nor the respiration is accelerated, nor is there usually any abnormal elevation of temperature. The natural language of the malady denotes unmistakably that the bowels are the seat of the pain, though the tenderness on pressure does not seem excessive. After a time the local uneasiness appears to have produced a quasi-hysterical action on the nervous system. If the infant be old enough to be attracted by any glittering object, or a series of moderately loud noises, he may forget his woes for a time, and all at once recollect them and resume his ululations as vehemently as before, bearing on his countenance that expression of conscious ill-usage which is so generally seen in those afflicted beings of maturer age and opposite sex, of whom it has been quaintly remarked that they are so very ill because there is so very little really the matter with them. After disturbing the whole household for the best part of the night, and exhausting all the curative efforts of the establishment, the young gentleman falls quietly asleep, and seems so well and fresh next day that the history of the direful nocturnal events sounds like a baseless romance when related even to sympathetic auditors. Yet such experiences constitute one of the most painful trials which the youthful primipara is called upon to undergo, although mater-familias of fifteen or twenty years' standing sustains them in general with philosophic equanimity.

"The enteralgia referred to does not commonly depend on mere fecal accumulation. In thriving children who are not as yet subject to the pangs of teething, the alvine evacuations are comparatively scanty so long as the maternal lacteal secretion is the sole or preponderating source of nutrition. In such cases I have invariably noticed, that so long as the abdominal suffering lasts the urination is suspended; that a true ischuria renalis exists for the time being, and that whenever micturition occurs the crying and distress cease, presenting exactly the same termination as that of the passio hysterica—the copious flow of a large quantity of clear limpid fluid. Acting on this indication, I have for many years past been in the habit, whenever such attacks were brought under my care, of prescribing from eight to ten minims of spiritus etheris nitrosi in a drachm of water to children of the age above mentioned. Generally, after the administration of this draught there occurs a discharge of flatus from the superior or inferior orifice of the alimentary canal—the ether acting as a diffusible stimulant and carminative; but without exception the passage of urine in large quantity takes place within a few minutes after its imbibition, the cries cease, and the small patient sinks into a refreshing slumber. Whatever view may be taken as to the causation of the malady in question—whether it may depend on a non-secretion depending on a temporary congestion of the glomeruli of the kidney or a partial paralysis of the more elaborated and complex urinary passages of the male, or merely from the presence of flatus in the colon mechanically suspending the renal function—the fact is well ascertained that the phenomena above depicted are extremely frequent in male infants of all classes, and every variety of social and hygienic surroundings; also, that in some instances very serious mischiefs have been the consequence of such nocturnal pervagitis."

Glycerine of Borax in Facial Erysipelas.

Prof. D. M. Salazar, of the Hospital Nacional, Madrid, reports that he has cured eight cases of facial erysipelas in 48 hours by this remedy. Notwithstanding the rapidity with which the affection disappeared, there were no consecutive pathological affections. In one case, the disease had existed three days before treatment was commenced, and there was bilious vomiting, intense cephalalgia, high fever, inflammation of the entire face, and some phlyctenulæ in the vicinity of the right lower eyelid and the root of the nose. He applied the solution to the diseased parts with a brush, and then covered them with a mask of raw cotton. After 24 hours all the symptoms, local and general, were notably diminished, and the next day all the phlyctenulæ had disappeared and desquamation was commencing.—*El Amfit. Anat. Espan.*, Mar., 1873.

Combination for Chronic Diarrhea.

Rayer (*Union Medicale*, No. 73) advocates the combination of cinchona, charcoal and bismuth, in the management of chronic diarrhea in these proportions: Subnitrate of bismuth, ʒj.; cinchona, yellow, powdered, ℥ss.; charcoal, vegetable, ℥i.; M. chart.

xx. S. Two or three times daily during the intervals between meals.—*Canada Medical Record.*

Puerperal Fever. Treatment by Intra-Uterine Disinfection. By J. E. O'Brien, M.D.

Having had several cases of puerperal fever during the past year, I have given them much study, and made an advance in treatment which I do not find on record; if the same should have escaped my limited researches, however, I beg to be directed to it.

In all the cases of puerperal fever which I have seen, I have recognized the presence of a septic poison in the womb, the detritus of placenta, membranes, or clots; or pus, a result of inflammation caused by violence at the hands of the midwife. The axiom which I would give the profession (if I have not been anticipated), is—

To neutralize the septic matter by *intra-uterine* injections of carbolic acid.

A very good illustration of the treatment usually employed may be found in the JOURNAL, Vol. XXVI, p. 110, but nowhere have I found a suggestion of anything *beyond* opiates, eliminants, and disinfectant vaginal injections. The latter, as recommended in our text books, forms a curious anomaly in practice, for it is not the vagina which absorbs the organic poison, but the open veins of the womb, or its absorbents now actively engaged in the process of involution.

The most serious objection to intra-uterine injections in gynæcological practice, is the alarming colic which they produce unless their exit be provided for by previous dilatation with sponge tents; the syringe which has been constructed to return injected fluids is practically a failure. This objection, however, does not apply to the post-partem uterus, as it has been dilated, and is tolerant of fluids and used to expelling them.

In a recent case of commencing puerperal fever, I injected into the womb four ounces of warm water, which washed out ropy, offensive pus; I then injected two ounces of warm water containing half a drachm of carbolic acid (crystals). The patient had a slight colic after the water injection, but none after the carbolic acid, and in a few minutes she said that the soreness of the womb, which had been very great was easier; she then took cathartics, Dover's powder, had hot water, in flannel, to the abdomen, etc. The lochia, previously suppressed, occurred again immediately after the syringing, and continued profusely.

Six hours later the fever was less, the soreness of the abdomen much better, tongue cleaner, lochia continuing, and further injection, which I had determined upon, apparently not required. The next day she had stitches in the right and left hypochondrii, and one or two spells of faintness, but she made a good recovery.

I would not attempt to prove anything by a single case, but I believe the proposition is self-evident that if we think there is septic matter in the womb we ought to reach it directly with disinfectants.

A syringe with a long tube, curved like a uterine sound, is necessary. (They are made with a return gutter, which, as I have said, is generally useless.)—*Chicago Medical Journal.*

Bellevue Hospital, New York; Notes of Treatment. Bright's Disease. By W. H. Farrington, M.D.

In this affection diuretics are employed, a favorite prescription on one division being—

℞ Potass. bitart., ʒiv;
Inf. digitalis, ℥iv. M.
S.—ʒij—ʒiv t. d.

On another division a case is being treated by the administration of large quantities of water—about six pints being given in twenty-four hours. Diminution of this quantity is followed by serious symptoms, which disappear when the amount is again increased. Inhalation of the vapor of ol. juniperi has been tried on another division, the effect in some cases being well marked, but negative in others. The bowels are kept open by occasional doses of Murchison's powder on one division, by elaterium on another. Iron and quinine are given as tonics; the tr. ferri chlorid. being preferred by some.

A favorite prescription on the second division is—

℞ Ferri sulph. exsic., gr. ij;
Quin. sulph., gr. j;
Ext. gent., q. s. M.
S.—Pil. j t. i. d.

If there be much anasarca, strychniæ sulph. is sometimes added to the above. In ascites, stupes of digitalis infusion are placed over the kidneys occasionally with benefit.

If delirium or convulsions ensue, in addition to the use of eliminative remedies, as elaterium, hypodermic injections of Magendie's solution of morphia are given, with the object of lessening the sensibility of the nervous centres to the action of the blood-poison. This treatment, suggested by Prof. Loomis, seems to be efficient in a large proportion of cases. In uræmic coma, stimulating enemata, with the hot-air bath, are the means usually adopted.

Delirium Tremens.—In cases of injury complicated with this trouble, Dr. Griffith, of the third surgical division, is in the habit of giving as a drink, in twenty-four hours, infus. artemisiæ absinthe. Oij; also giving porter. On other divisions chloral hydrate is given, associated with bromide of potassium, as in the following:

℞ Chloral hydrat., ʒij;
Potass. bromid., ʒiv;
Aq. cinnamomi, ℥ij. M.
S.—ʒj q. i. h. until sleep occurs.

Usually only a few doses are required to produce this result.

Cholera Infantum.—If the disease have reached the cold stage, the best results are obtained by the administration of the "eau albumineuse," prepared by dropping the white of an egg in a teacup half full of water, gently stirring (not beating), until the albumen is dissolved. To this brandy is added, so that each drachm contains from two to five drops, varying with the age of the child. A teaspoonful is given every half hour, the patient being also wrapped in blankets; and the surface stimulated by applications of ol. camphorat.—*Philadelphia Medical Times.*

A New Treatment for the Prevention of Hydrophobia After Inoculation. By Paluel de Marmon, M.D.

On the 28th of June, 1871, Ella——, of New York, was bitten by a dog, which, according to all the evidence, as hereafter described, was rabid. I saw the child one hour after the accident: a piece of the right cheek, about the size of a silver-dollar coin, irregular in shape and depth, had been torn out by the animal. She also bore the marks of the dog's teeth upon the right arm and leg.

I cauterized the wound immediately with a saturated solution of carbolic acid, and had it kept wet constantly with a weaker solution of the same. I ordered, besides, two drops of liquor ammonia fortis to be given every two hours in water.

June 29th.—The little girl slept well, is in good spirits, has good appetite, and no pain. June 30th.—Continues to do well. July 1st.—Increased the dose of ammonia to three drops; wound cauterized upon the edges with nitrate of silver to correct some irregularities in the cicatrix. The same treatment was continued until August the 9th, and was religiously followed; the wound was not allowed, during the whole time, to be dry a single instant, thanks to the unremitting attention of a devoted mother. On the 10th of August the wound was entirely closed, and the cicatrix, healthy and regular, reduced to about one-tenth of its original size, and without a single bridle.

It is now two years since the accident happened, and no symptoms of hydrophobia have made their appearance. I think I am well authorized to suppose the patient out of danger.

The Dog's History and Post-mortem Examination—The dog, which was totally unknown in the neighborhood, was lying in the coachman's room, under the bed. When the man entered his apartment the animal looked at him and walked out. It then attempted to pass by the patient's sister, a little girl seven years old, and did not appear to notice her; but when it went by the patient, this little child, probably on account of fear, made a motion with her hand as if to drive away the animal. It was at that time that the dog sprang at her and bit her.

The dog was chased by four men, and finally caught and killed. During the chase he bit a duck, which was killed a short time after. The dog was first struck on the back of its neck with the butt-end of a whip; it did not yell, but only groaned slightly. In the chase given to him he did not seem to get out of the way when any of the men were in front of him in a threatening position—when he was at last struck to the ground with a hay-fork, without yelling or attempting to defend himself, and was then clubbed and his head broken.

Autopsy was made 15 hours after death, June 29th. Rigor mortis very pronounced, no signs of decomposition, no smell; all the internal organs were healthy, the gall-bladder very full, the lungs slightly congested, the blood extravasated in the splanchic cavity was dark and liquid.

The stomach was rather small, and contained a quantity of *hair*, *mud*, two whole *bumble-bees*, one large *butterfly* with wings almost intact, one small *white mushroom*, some *straw*, *grass*, and the piece of the child's cheek nearly all digested but the skin.

The mouth was filled with bloody froth, and on the tongue—that is to say, beneath and on the sides of it—some small pustules, varying from the size of a millet-seed to that of a grain of wheat, irregular in shape, and filled with a light, whitish liquid, could be plainly observed; I counted twenty-three of them. These, in all probability, were what has been described by some authors under the name of *Lyssæ*, and supposed by them to contain the rabid virus.

The above data display undeniably all the features of hydrophobia in the dog as described by authors; and in fact, who ever heard of a dog in a normal condition having such polyphagous propensities? On the contrary, when he is mad "the stomach contains a strange mixture of straw, hair, paper, hay, horse-dung, and earth." (*Clymer's ed. of Aitken's Practice.*) "The dog who is mad swallows *péle-méle*, objects the most foreign to alimentation" (*E Littré et Ropin in Dict. de Nysteu*, 12*th edition*). "It eats the straw of its bed, horse dung, excrements, pieces of leather, wood * * * in him there is no feeling; he may be beaten, struck, burned, without uttering a complaint" (*Nouveau Dict. des Sc. médicales et vétérinaires*). "Very frequently we can see him eat his litter, pieces of wood, earth, etc. The knowledge of this fact has a great importance, because, in making the autopsy of the rabid dog, we find in his stomach all the substances which have not been subjected to digestion, and that in this we have a proof of the disease" (*A. Trousseau, Clinique méd. de l'Hôtel Dieu*).

"A mad dog does not always refuse to eat, but a fact quite remarkable and characteristic," says M. Bouley, "is the depravation of appetite; the animal may be seen to tear, destroy, or swallow objects not made to eat; and one should always mistrust a dog which tears with obstination carpets, blankets, pillows, or eats wood, earth, litter, etc." (*Grisolle, Pathologie interne.*)

As we may easily see by the above, eminent authors agree upon this point of pathology, and confirm my views of the case I have reported. It is true that cases of hydrophobia have been cured spontaneously; but nevertheless, the treatment by carbolic acid may be tried again in combination with ammonia, and I should be happy to hear of any other case where it may have been successful.—*The Medical Record.*

Prophylaxis of Asiatic Cholera. By Henry MacCormac, M.D.

I have had a good deal of experience of Asiatic cholera. In the year of its outbreak, I was physician to the Cholera Hospital in Belfast, and for some months was day and night in the midst of the malady. I do not recollect the exact statistics, but two or three thousand cases passed at that time through my hands. There is considerable resemblance between English cholera in the stage of collapse and Asiatic cholera. In English cholera—I speak of the period of collapse—the pulse ceases at the wrist, the skin becomes deadly cold, and the features shrink, but the patient does not display the blue black skin which we witness in Asiatic cholera. There is not the stench which attends the latter; and, more especially, the *zumé* or leaven which causes Asiatic cholera to be a communicable malady does not exist in English cholera.

Many, I know, do not look upon Asiatic cholera as communicable. I do not share this conviction. Within certain limits, I consider Asiatic cholera a highly communicable malady; and I have no hesitation in proclaiming, speaking of my own conclusions, that every case without exception, occurring in Europe, is, was, and will be the result of infection. All the assistants and all the servants who had not had the malady before, myself excepted, contracted the disease; some of them, indeed, twice or thrice when they came to reside within the hospital boundaries. Two, if not three, gate-keepers died rapidly in succession. Out of hospital the instances which, as I believe, I could trace to infection, were very frequent, and the negative evidence of cases where infection could not be traced, or at least was not traced, did not, at least as I most firmly believe, invalidate the direct evidence of infection. The number of those in indigent circumstances who contracted Asiatic cholera were out of all proportion greater than of those in opulent life. Wherever crowding was excessive, exposure to the malady great, and sanitary laws were otherwise violated, there cholera was at once frequent and destructive. The disease, when epidemic, followed, indeed, precisely the same law as to prevalence which plague and fever always do. The ancient motto is inverted. The rich are spared while the poor are decimated. It was, indeed, *parcere superbis, debellare subjectos.* The rich, indeed, were not all exempt, but they were very much less frequently assaulted than the poor.

It becomes then vastly desirable under these circumstances, first, if possible, or at least as much as possible, to stay the advances of Asiatic cholera altogether; and next, until that be done, or even if that cannot be done, to realise as much security as is practicable in the event of the actual invasion of the malady. No disease more strikingly attests the exceeding efficacy of early treatment than does Asiatic cholera. The evidence afforded in Glasgow, to mention no other locality, is quite conclusive on this point. Persons went daily, if not twice daily, from house to house, and whenever they found any one laboring under premonitory diarrhœa, as it was termed, they instantly administered a dose of cholera mixture, and, I believe, left other doses to be used in case of any return of the diarrhœa. The result was, that in every 1400 cases of diarrhœa thus met, there was but one death; whereas, if it had been left alone, the half of those attacked probably would have perished. It would be difficult, I think, to adduce any stronger evidence of the efficacy of remedial measures zealously, timely, and effectively administered than this. Nevertheless, numbers died in Glasgow; and the ravages of cholera, since its first introduction into Europe, have been very great indeed.

Under these circumstances, it occurred to me that it would be excessively desirable, so far as it was possible, to anticipate even the premonitory diarrhœa. For, if only we can succeed in averting the disease, were it in its mildest form, we also avert the dangers and the mortality, which more or less attend the developed malady. In 1854–5, some repairs going on, and a communication having been opened with the infected town, forty of the inmates of the District Asylum for the Insane, to which I was visiting physician, were assailed with Asiatic cholera, and seventeen almost immediately perished. I instantly caused to be prepared a large admixture of what might be termed sulphuric acid lemonade, in the proportion of half a drachm of the dilute acid to each dose, and, zealously aided by the resident physician and my son, had this administered daily to every one of the four hundred inmates of the establishment. The twenty-three residuary cases of the forty who were attacked remained, of course, under treatment, and made good recoveries; but not a single other fresh case ensued, and the malady then and there, in fact, disappeared. In the event of the apprehended invasion of Asiatic cholera, and, *à fortiori*, when it had actually occurred, I would urge the administration, once or twice daily, to every adult member of the community, of half-drachm doses of dilute sulphuric acid, as the most generally available, in any convenient vehicle. Drinking-water, previously filtered, should invariably be raised to the boiling point; and, while hot, flavored with a pinch of tea or coffee, a chip of cinnamon, quassia, gentian, dried orange-peel (any of them), or else a small fragment of highly toasted bread. In China and Japan, the water, before drinking, is almost invariably cooked and flavored with a little tea. I ascribe, indeed, much of the immunity enjoyed by the people of these countries from the ravages of Asiatic cholera to the prevalence of this most beneficial practice. To children, half or less of the above amount might be given. Of course, *il va sans dire*, that every reasonable sanitary precaution, such as burnt earth-closets and cooked drinking-water, should in addition be taken. I have been at considerable pains to make these views generally known; and, assuming that I have established the prophylactic efficacy of dilute sulphuric acid, and my experience has not been confined to the instance which I narrate, the profession, if they will only take the matter up, have it, I believe, in their power to abate the ravages of cholera, and bring the malady effectively within human control.—*The British Medical Journal.*

NOTICES OF NEW BOOKS.

Chemistry, General, Medical, and Pharmaceutical. By John Attfield; Ph. D., F.C S., &c. Fifth Edition, revised from the Fourth (English) Edition. Philadelphia: Henry C. Lea, 1873. 12mo., pp. 606.

The value and popularity of this manual are evidenced by the fact that five editions have been demanded within five years; two of which, the third and fifth, have appeared in this country.

The most striking feature ot the book is its adaptation speci-al y, if not solely, to the use ot medical and pharmaceutical students. "From other chemical text-books it differs in three particulars: first, in the exclusion of matter relating to compounds which at present are only of interest to the scientific chemist; secondly, in containing more or less of the chemistry of every substance recognized officially, or in general practice, as a remedial agent; thirdly, in the paragraphs being so cast that the volume may be used as a guide in studying the science experimentally."

The usual introductory chapters on the general properties of matter and the physical forces, are omitted in this work and relegated to special treatises on these subjects, of which, indeed, there is no lack. The importance of attention to these preparatory topics is not denied by the author, but his supposition that the main body of medical students in this country (for whom this edition was specially prepared) will go to these books for the needed information is not likely to be fulfilled, as their purely scientific instruction generally begins and ends with the medical curriculum. Such is likely to be the case, until medical faculties imitate the practice of literary colleges, and fix a standard of preparation for their course.

The notation adopted is that based on the latest theories of chemical combination, in which the combining proportion and volume of elements in the gaseous form precisely correspond; while the atomic weight, chemical equivalent and specific heat, always agree. It is generally conceded that this system of notation must supersede the old one, but the nomenclature of chemical compounds presents a wide field for varying ideas of propriety. The author agrees with the new Pharmacopœia, and in naming salts gives precedence to the acid component, appending the elementary name of the base. For instance, the salt formerly known as nitrate of potassa is here called nitrate of potassium; while it is variously styled by other followers of the new notation as potassium nitrate and potassic nitrate.

To the chemical consideration of the mineral and vegetable substances known in medicine are appended short articles on Chemical Toxicology; the Examination of Morbid Urine and Calculi; Quantitative Analysis, both Volumetric and Gravimetric. An appendix follows, giving tests for impurities occurring in pharmacopœial preparations. For purposes of analysis the French metrical system exclusively is used.

The fact already alluded to, that American medical students mostly come to the lecture room with no previous knowledge of physical science, renders it necessary for the professor, if he would teach to any useful purpose, to give attention first to general physics, and he hardly finds time to advance beyond the rudiments of pure chemistry, in a single course of four or five months addressed alike to beginners and advanced students. While we consider this work well adapted to the use of advanced students, and the best of its kind, it certainly will not answer the wants of beginners, such as present themselves for matriculation at most of our schools of medicine and pharmacy. The great fault undoubtedly lies in the organization of these schools; and when yearly classes can be formed, with courses of lectures arranged in suitable stages through a three-year's course, this work would be well adapted to the comprehension and use of a second-year class.

Transactions of the Kentucky State Medical Society, Eighteenth Annual Meeting, held at Paducah, Ky., April, 1873.

Following the minutes of the session is the address of the president, Dr. Louis Rogers, on the History of Medicine in Kentucky. This is a discourse of especial local interest, besides possessing value to the general medical public in commemorating some eminent professional lights that have cast their radiance far beyond the precincts of home.

Next comes an essay on the trite subject of "Medical Education," for the advancement of which so much is said and so little done. The author, Dr. Edward Richardson, very properly controverts the doctrines uttered by a late President of the American Medical Association, who depreciates preparatory and general education in the medical profession, and commends illiteracy by holding up the examples of eminent physicians who have won their positions in spite of their deficiencies. As well might he praise the intemperance which clouds the character of some of our brightest lights, and declare that it is conducive to medical usefulness and necessary to a high reputation.

"History in Disease" is the title of a paper by Dr. J. J. Speed, in which he deprecates polypharmacy and excessive faith in drugs; while he makes a strong plea for greater honesty in therapeutics, and more candor on the part of physicians in disclaiming undue power in their medication to control the progress of disease. Here he takes occasion to controvert the absurd pretensions of Homœopathy. This part of the paper we deem needless, inasmuch as it is addressed to medical men. If it were addressed to the public, we should say that it is useless, for belief in homœopathy is a religious faith quite independent of reason and evidence.

An interesting paper on Obstetrics among the Mexicans and certain aboriginal tribes in the valley of the Rio Grande is contributed by E. M'Clellan, Assistant Surgeon U. S. A. According to his account, it would be a libel on humanity to say that their manners and morals are characterized by a primitive simplicity and purity; and it would appear that the perils of maternity are greatly increased by the obstetric art practiced among them.

A Report on Surgery, by Dr. J. W. Thompson, chairman of the Committee of Surgery, presents a brief epitome of recent progress in this branch of the healing art.

A Report on Vital Statistics, by Dr D. T. Smith, is little more than an apology for the total want of any system to this end in Kentucky.

The Report on Registration, by Dr. S. A. Foss, is a plea for the reënactment of the old registration law, which was repealed in 1862.

Reports, on Ophthalmic Surgery, by Dr. Dudley S. Reynolds, and on Laryngoscopy, by Dr. Richard C. Brandeis, relate to the recent progress and present state of these branches.

The volume closes with memorial sketches of two deceased members, Drs. J. T. Bradford and Hugh Rodman.

Half-Hour Recreations in Popular Science. Boston: Estes & Lauriat, publishers.

This is a monthly publication, each number containing one or more papers by the leading scientists of the day, American and foreign. "The series will be composed of familiar lectures, essays, and other papers on scientific matters, modern discoveries, natural phenomena, social statics, and other subjects intimately connected with the mental and moral growth of mankind. It will be the aim of the editor to admit no article which is too abstruse or technical to be clearly understood by the average American reader, to exclude all merely fanciful theorizing, and to offer the public a series of papers which shall be both interesting and instructive."

The present number contains two papers: (1) a lecture by Prof. Huxley, on "Yeast, explaining Protoplasm and the Germ Theory." This was delivered at the Free Trade Hall, Manchester, in November, 1871, and, being addressed to a popular audience, is expressed in very plain language, and a familiar style suited to the comprehension of his hearers.

(2) A lecture on the "Relations between Matter and Force," by Prof. John H. Tice, of St. Louis; read before the Teachers' Association of the Second District, in January, 1872; also before the

Western Academy of Science, at St. Louis, in April, 1872. This lecture, being addressed to a more highly educated class than the other, is not clothed in the same simple language and familiar style. Still it is easily understood by all who are acquainted with the modern theories on the conservation of force and the convertibility of its various forms—mechanical motion, heat, light, electricity and magnetism.

The increasing interest felt by the reading public in scientific matters is shown by the multiplication of publications of this kind to answer a popular demand for more light. As the utility of science is more generally recognized, it is evident that all professions and callings founded on a scientific basis must profit by the stimulus, and advance together to a higher plane of thought and action. The medical profession will receive its share of the general benefit, and we therefore welcome such publications as coefficients of a higher civilization in which we all aim to be factors.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland, at its Seventy-fourth Annual Session, held at Baltimore, April, 1873.

Passing over the minutes of proceedings, reports of officers, etc., we come to the Annual Oration, by Dr. Thos. S. Latimer, on "Anæsthetics in Midwifery." His purpose is to answer the objections of opponents, and after disposing of the several points of opposition, he concludes:—"And, finally, the use of anæsthetics in midwifery cannot be defended on the ground of their absolute freedom from danger, so far as has yet been shown, but solely on the ground that the dangers from which they give exemption are at least the full equivalent of the dangers incident to them, and that their gain is in freedom from suffering."

A brief paper follows on the Theory of Contagion, by Professor A. B. Arnold, M.D., of Washington University, Baltimore. At the close he announces the following conclusions:

"1. That infectious matter essentially consists of separate particles.

2, That these particles are not portions of protoplasm.

3. That they have a vital, in contradistinction from a chemical action.

4. That some of them manifest the phenomena of germination and development.

5. That the special differences of these particles may be inferred from the special differences of contagious diseases."

The report of the Section on the Practice of Medicine and Obstetrics is made by Dr. John Morris. In it are briefly noticed some of the important practical improvements of the previous year.

"Notes on Thoracentesis" is the title of a paper by Professor S. C. Chew, of the University of Maryland, in which he discusses the conditions under which this operation is applicable, and the advantages to be expected. His views are illustrated by reference to several cases actually treated. In one case, after twice drawing off a large purulent accumulation, an injection of dilute tincture of iodine was made, to produce adhesion of the adjacent pleural surfaces. Although the fluid did not again accumulate, the patient succumbed to exhaustion and hectic. The result indicated that the operation may be tolerated, and that its purpose may be fulfilled; provided it be performed in season.

Professor Julian J. Chisholm, of the University of Maryland, reports "A keloid growth, of twenty-seven years, involving the entire lower lid and two thirds of the upper lid, including the skin of the left side of the nose. Growth removed and deformity corrected by a Blepharo-plastic operation, manufacturing the two lids from contiguous skin surfaces."

A paper on "Intercranial Necrobiosis, or Softening of the Brain," by Dr. Henry R. Noel, seems to be a compilation from various authors. Constant reference is made to their writings, and originality is nowhere claimed or implied

Dr. Oscar J. Coskery, Medical Superintendent of St. Joseph's Hospital, Baltimore, gives his views "On the Construction and Ventilation of Hospitals." His paper is illustrated by drawings of St. Joseph's Hospital and of the Herbert Hospital, at Woolwich, England, both built with wards on the pavilion plan. This plan necessitates ample room and secures the largest amount of ventilation and light—all important accessories where large numbers are brought together for treatment.

The last medical paper is a "Report of Cases treated by Electricity," by Dr. J. J. Caldwell. Two of these were tumors, and treated by the constant current successfully. The other two were cases of hip-joint disease, one of which was subjected to frictional electricity, the other to faradism—both with favorable results.

The volume closes with brief memoirs of a number of deceased members. H.

An Introduction to the Study of Clinical Medicine; being a Guide to the Investigation of Disease; for the use of Students. By Octavius Sturges, M.D., Cantab., F.R.C.P., Assistant Physician to the Westminster Hospital; formerly Registrar of medical cases at St. George's Hospital. Philadelphia: Henry C. Lea; 1873.

This little volume is designed for students and very young practitioners. The following extracts will give a sufficiently clear idea of the character and merits of the work:

The convulsions of childhood are in some respects analogous to the rigors of later life, inasmuch as they often usher in acute affections.—They may be so transient and partial (as when confined to the thumbs, which are drawn in upon the palms) as to be lightly regarded by the mother, or even altogether overlooked.* The term "inward convulsion," or "fits inwardly," is sometimes used by nurses where no muscular spasm has actually taken place, save only some twitching of the lips and eyelids.

In all the illnesses of children it is not to be forgotten how important an e ement in the history is food and clothing.—Amongst the poor there is an extraordinary ignorance as to the kind of diet suitable to childhood, and, as a consequence, a very large proportion of the infantile ailments and actual mortality of this class arises directly from improper food, and subsides as soon as this is rectified. The questions addressed to mothers under this head should be directed to such points as the following: the state of their own health and the quantity of milk secreted during lactation, the period at which the child was weaned, the sudden or gradual withdrawal of the mother's milk, and the kind and quantity of food substituted.

In respect to the significance of pain in disease, the author states:

* Convulsion in infancy is to be severed altogether from the same symptoms in the adult, arising as it does with less provocation from a far wider range of circumstances. It is due in many cases to an eccentric irritation, as the overloading of the stomach or bowels, or the cutting of teeth, conditions to which every infant is liable. It is in the abidence of this symptom, when its apparent cause is removed, or its occurrence in subjects who have other signs of nervous disease, or arising as a new feature in the course of an acute affection, that we recognize its gravity. It is often of the highest importance, therefore, whenever convulsion is alleged, to inquire minutely into the state of the child's health and functions immediately before the fit. When the frame of the child, or its state of nutrition, or this occurrence of convulsion leads to a definite suspicion in regard to it, it is always proper to inquire how it sleeps, as with half-shut eyes, twitching the face, grinding the teeth, or burrowing with the back of the head into the pillow.

There is no symptom which requires more careful examination than pain.—Its prominence as a symptom is often quite out of proportion to its value as an aid to diagnosis; for while it is impossible either to suffer or witness pain without assigning some cause for it, the explanation is often mere guessing. To the beginner pain, especially that which is fixed and acute, will always suggest some change in the structure or relationship of parts, and he will thus be led to suspect inflammation or ulceration, or obstruction or pressure, in so large a number of cases that the very frequency of the suspicion will at last assure him of his error.

The cause of pain from first to last is often conjectural.—Its nature may of course be learnt in many instances by considering its character and surroundings. Thus pain, which is periodic, or which arises upon certain movements, including those of respiration and of convulsive cough, or which is simultaneous with certain stages of the digestive process, or with fulness or emptiness of the hollow viscera, may be partly explained by these associations.

It is usually necessary to give some specific directions as to the manner in which medicine is to be taken.—Such directions have reference chiefly to the stages of the digestive process, and the fulness or emptiness of the stomach at the time the drug is introduced—circumstances which bear upon the result no less than the precise form or bulk of what is put there. We know, for instance, that certain aperients require for their action that the stomach should be empty, or nearly so; that, on the contrary, arsenic agrees best when given after a meal; and we suspect that the action of calomel may be affected by salt recently taken, and that alkalies given during the active period of digestion may interfere with that process. Considering, indeed, how large a portion of our remedies are addressed directly to the digestive organs, and how many of them depend for their earlier or later solution and absorption upon the varying conditions of secretion, it must be important in most cases to select some particular period of digestion as being best suited to the particular object in view.

There is nothing in the plan of digestion or the vicissitudes of disease, which need tie us down in our administration of medicine to the formula of three times a day.—The activity of the treatment must bear a due relation to the activity of the disease. I do not mean to imply that active disease is not often best left alone, but only that when medicine is given it must be such as is prompt and immediate in its action. The drug may be directed to the right object, yet given so sparingly or so seldom, that it is quite hopeless to expect that it can ever keep pace with the rapid development of the disease. It may be calculated to convey the right impression, but it will convey it too late, and when the opportunity has passed away.

Clinical Lectures on various Important Diseases; being a Collection of the Clinical Lectures Delivered in the medical wards of Mercy Hospital, Chicago. By Nathan S. Davis, A.M., M.D., Professor of Principles and Practice of Medicine, and Clinical Medicine, in Chicago Medical College. Edited by Frank H. Davis, M.D. New York: Woolworth, Ainsworth & Co., 51 John Street; 1873.

The first and second of these lectures are upon "Continued Fever," and their readers will find that they contain many valuable suggestions in regard to treatment. Dr. Davis is severely practical in his mode of thought and style as a teacher. Little else is found in his writings except what is designed for instruction and use. As an example of his style, I here quote some of his remarks on typho-malarial fever:

This mixed grade of fever had been very prevalent in the city from the early part of August to the present time (November, 1872), while in the surrounding country districts, purely malarious or periodical fevers have been unusually prevalent. Many of the typho-malarial cases in the city have commenced with such distinct chills and exacerbations of fever, as to lead the patient and practitioner both to regard them as simple malarious cases, and to confidently expect their full interruption by anti-periodics. In a few, the deception has been increased by an interruption of the paroxysms for two or three days after the first induction of the effects of quinia, so fully that the patients have gotten up, and supposed themselves convalescent. Yet there has remained with them a dull, unnatural feeling in the head; a dry or gummy feeling in the mouth; obscure achings in the back and limbs, especially in the afternoon, with indifference to food; and after a period ranging from three to five days, the face would become suffused with redness; the lips dry; the tongue coated; more dullness, swimming and pain in the head; and more general derangement of secretions. The pulse from 100 to 110 and temperature from 100° to 103° in the afternoon, but so much less as to constitute a remission in the morning. From this time on, every day generally adds to the predominance of the typhoid symptoms, and some of the cases run a protracted course of from four to six weeks. If, when the fever returns, after the first apparent interruption by quinia, that remedy be again resorted to, and the doses increased, with the expectation of again arresting, at once, the further progress of the case, it generally produces no other effect than to stupefy the sensibility of the patient, and add to the giddiness and confusion in the head. The method of treatment which we have found most beneficial in these cases, when called to them in the early stage, has been rest; a bland, simple diet; milk-whey for drink; sponging the surface with luke-warm water, when hot and dry in the afternoon; and the exhibition of a mixture of carbolic acid, gelseminum, and camphorated tincture of opium, in moderate doses, to counteract the typhoid elements, and moderate anti-periodic doses of quinia in the morning remission to destroy malarious influence. Four or five days since, when the present patient was admitted to the hospital, he was ordered the following prescriptions:

℞—Carbolic acid crystals............6 grs.
Glycerine (pure)..................℥ ss.
Tinct. gelseminum...............ʒiii.
Camph. tinct. opii................℥iss.
Aquæ..........................℥iss.

Mix. Give one teaspoonful every four hours.

℞—Sulph. quinia ....24 grs.
Hydg. chlorid. mite..............3 grs.
Pulv. liquorice root.............6 grs.

Mix. Divide into six powders, and give one at six and ten o'clock each morning.

He has continued these medicines steadily until the present time, and with a gradual improvement in all the febrile symptoms. He will now continue the carbolic acid solution every six hours, and take only one powder of the quinia, etc., each morning.

This case will probably require no other treatment except the gradual withdrawal of his present medicines, as convalescence becomes established, and the allowance of a more liberal diet.

When cases of this mixed fever assume greater severity, and, after the second week, present more prominent typhoid symptoms, the treatment must be more fully that which is adapted to the advanced stage of idiopathic typhoid fever.

For the prevention of relapases in "Periodical Fever," Dr. Davis has great confidence in the cornus Florida. He remarks:

The physician who is called to stop the paroxysms of intermittent fever frequently does nothing further, and there is a relapse with which the patient is dissatisfied, or a new disease may arise from the condition in which the intermittent leaves the patient. Intermittents can be easily interrupted, but the disease is not cured by merely stopping the paroxysms. Treatment should be adopted, at once, to restore the blood to its natural condition. This may be well accomplished by the use of the extract of cornus florida with iron and nux vom., as in the following formulæ:

℞—Ext. hyosciamus................40 grs.
Ext. cornus florida..............80 grs.
Ferri citras......................80 grs.
Ext. nux vom....................20 grs.

Mix, and divide into forty pills. Take one pill before each meal time, until the blood regains the normal proportion of its red corpuscles, and the patient's health is restored.

It is probably a point of some difficulty to decide, whether the nux vomica may not, after all, be the energetic curative component of this prescription. I can, however, corroborate Dr. Davis's opinions in regard to the efficacy of the cornus Florida as an anti-periodic, by recalling the very many instances in which I have observed its virtues tested in the hands of a venerated and sagacious preceptor. His prescription was a homely and home-made one. As a curiosity I will quote here his prescription, which enjoyed his unbounded confidence as a preventive of relapse in periodic fevers.

Take of the bark of dogwood and American poplar, and of the root of burdock, each four ounces; put in two quarts of water and boil it until it is nearly or quite reduced by evaporation to one half; then pour off the fluid, add one pint of whisky, and drop into the mixture two ounces of the bark of wild cherry. Of this, the patient was ordered to take from two to four fluid ounces thrice daily.

In chronic or subacute inflammations of the stomach, Dr. Davis prescribes carbolic acid.

And to hasten the disappearance of the inflammation in the stomach, I prescribed, in addition, the following solution:

℞.—Carbolic acid....................grs. vj.
Aquæ..........................℥ij.
Tinct. opii et camph.............℥jss.
Glycerine.......................℥ss.

Mix. One teaspoonful to be given after each meal.

The remarks of the author upon the "summer complaints" of children are practically very valuable. The following extract will give the readers of the JOURNAL a good idea of his mode of treating this subject.

Here is a case illustrating this class, a baby, eight months old. You see it lying languidly in its mother's lap; the face is a little pale; the eye slightly sunken; the expression sad; its surface and extremities cool; respiration quiet, and pulse soft and weak. The mother says it has had from four to six thin, yellow discharges every twenty-four hours, for the last three days. The passages are thin, copious, and preceded by a little restlessness or peevishness, and followed by languor. There is neither fever, pain, or mucus in the discharges, or anything indicating local inflammatory action. The pathological conditions are, simply, general relaxation, with undue excitability of the mucous membranes of the bowels. The ideas entertained by some, that these cases depend on some derangement of the liver, or that the discharges are the result of an effort of nature to get rid of some morbid matter, or the result of "teething," are founded on neither legitimate reasoning nor the facts involved.

This child's nursing should be regulated so as to prevent overloading the stomach at any one time; but the mother's milk is the best nourishment that it can take, and the less of any other fluid it takes the better.

For medicine, we give it the following prescription:

℞ Phloridzine........................24 grs.
Aromat. spts. ammon. ....ʒ i.
Camph. tinct. opii...................℥ i.
Aquæ...............................℥ iss.
Simple syrup.......................℥ ss.

Mix. Shake the vial, and give half a teaspoonful each morning, noon, tea-time, and at bed-time.

The phloridzine, derived from the bark of the root of the apple-tree, is a mild and pleasant tonic; while the camphorated tincture of opium supplies the necessary anodyne influence.

Another combination that we use frequently is as follows:

℞—Arom. sulph. acid......................ʒ i
Magnesia sulph.........................ʒ i
Tinc. opii...............................ʒ i
Simple syrup...........................℥ i
Aquæ...................................℥ i

Mix. Give, to a child of the age of this one, fifteen drops, every two, three, or four hours, according to frequency of the discharges.

Or the following may be substituted:

℞—Quinia tannate.......................4 grs.
Pulv. opii...........................1 gr.
Saccharum alba....................20 grs.

Mix, and divide into eight powders, of which one may be given every three, four, or six hours.

In the early part of mild cases, the use of one or the other of these formulæ will generally speedily restore the patient to health. But if the attack is more severe, characterized by, not only frequent serous discharges, but also partial or complete suspension of important secretions, such as urine and bile, we must combine the anodyne with an astringent instead of a tonic, and add to both a small dose of some alterative, to aid in restoring these important glandular secretions. In such cases, if the vomiting is frequent, and more especially if the matters ejected are sour, I make a solution of soda bi-carb., one drachm, and morphia sulph., one grain, in two ounces of water; and of this give from six to fifteen drops, according to the age of the child, immediately after each act of vomiting. At the same time, give one of the following powders every three hours, until the discharges cease, viz.:

℞—Hydrarg. chlor. mite....................3 grs.
Plumbi. acetas..........................3 grs.
Pulv. opii...............................1 gr.
Saccharum alba........................20 grs.
Mix. Divide into six powders.

The rule to give whatever medicine is designed to suppress the vomiting, in small doses, *immediately* after each act of vomiting, is one of much practical value. Vomiting is an act that cannot be perpetuated continuously, but must always occur in paroxysms, with an interval of greater or less length between them. Hence, if a dose of medicine is swallowed immediately after a paroxysm of vomiting, it will remain in contact with the mucous membrane of the stomach a few minutes, at least, before another effort at vomiting can be performed. During these few minutes, if the medicine is soluble, or already in solution, it will gain some effect, both on the nervous filaments and capillaries of the mucous membrane; and a repetition of the dose immediately after each paroxysm of vomiting will soon accumulate an effect sufficient to destroy the morbid sensibility, and consequently stop the vomiting. But if we follow the wishes of the patients, and the inclination of almost all nurses, by withholding the medicine after vomiting until the patient has "rested a little," that little period of rest is just sufficient for the muscular coat to regain its contractibility, and the mucous coat to pour out a new supply of serous fluid, and consequently the patient is all ready for another paroxysm of vomiting. Now, if the dose of medicine is administered, in nine cases out of ten it will be rejected almost as quick as swallowed, and the effect is lost.

The same rule is equally important in reference to the use of enemas for aiding in the suppression of diarrhœa or dysentery. They should always be administered as speedily after an evacuation as possible, and while the rectum is entirely empty. The longer the enema is delayed after an evacuation, the more mucus, or serous fluid will have accumulated in the intestine, and the more readily will the introduction of the enema be followed by an immediate expulsion. You thus see, gentlemen, that in the more violent gastric and intestinal affections, success in their treatment depends almost as much on the time and manner of administering medicine as on the kind of medicine used.

We have no space for further notice of this little volume. It possesses many excellencies to recommend it, and if, in a classic point of view, it claims no high rank as a work of erudition, it carries with it the better merit of containing very much that is instructive in the cure of disease. B.

Contributions to Practical Surgery. By George W. Norris, M. D., late Surgeon to the Pennsylvania Hospital, Vice President of the College of Physicians and Surgeons of Philadelphia; Member of the Société de Médicale d'Observations of Paris, etc. Philadelphia: Lindsay & Blakiston; 1873.

"Experiencia docet." The spirit of this aphorism is seen to pervade Dr. Norris's book. Facts are given, and the results to be deduced from these facts are simply and plainly stated. The subjects discussed are of great importance, and the clinical facts invoked for their elucidation are, on the whole, well arranged and clearly presented.

The book is one which will serve as a fountain from which authors of more complete and systematic treatises on surgery may imbibe many a healthful draught. But it is not one which will be very useful for general reference, even on the subjects of which it specially and somewhat elaborately treats. In other words, it will not prove so useful to the general medical reader as to the medical writer. It will furnish very useful material for the latter, while the absence of illustrations, and the dearth of practical details of treatment, dressings, &c., will render it less attractive, and, indeed, less useful, to the former. The book, in fact, seems intended rather for the "select few"(?) who write—and who will no doubt make liberal use of its contents—than for the general medical reader. In this, as in many other respects, it is in marked contrast to the flood of volumes on special subjects with which we are now dosed "usque ad nauseam;" for these are generally written as much to catch the eye of the public as even the general professional reader. Dr. Norris's system of treating his subject is, moreover, one of careful condensation, while that pursued by these voluble book-makers is one of infinitesimal dilution. The abundant material of the one is crystalized, and scrupulously deprived of all extraneous matter; the meagre items of the others become, in their skillful hands, diluted and rarefied till they are lost in a volume of gas. Dr. Norris, in his book, is even over modest in keeping himself rigidly in the back-ground—behind an imposing array of important facts, however; while the windy book-maker's object is to throw himself and his pet notions diligently forward. These books, indeed, are for the most part "gotten up," under the popular plea of speculation, more as a species of advertisement than from any sincere desire to contribute to the progress of medical science.

We would not have the reader suppose from these remarks that we desire to reflect on those who have earnestly devoted themselves for years to a special department of medicine, and thus built up such an experience as to command our respect and confidence when they present for our perusal the results of their careful observation. Medical science could hardly dispense with such volumes as Mackenzie, Lawrence, Stellwag, and Donders, have contributed on the Eye; Wilde, Toynbee, Troltz, &c., on the Ear; Sir Henry Thompson, Gross, Allingham, &c , on Genito-Urinary Diseases, Malgaine and Hamilton on the Surgery of the Skeleton; Cazenave, Neligan, Wilson, Hebra, &c., on Cutaneous Diseases; and many others on various specialties. But when we have the rage for specialties carried to such an extreme that a separate volume must be written, for example, on "Fissure of the Anus," with a pretentious detail of how Gov. ———, and Gen'l ———, and the Hon. Mr. ———, &c., &c., were all so promptly cured by the author, after numerous other surgeons had failed; when we find that these wonderfully successful results were procured by the adoption of essentially the same methods recommended by standard authorities and practiced by all; when we find that the alleged vitally important modifications by the author of such well-known methods have about as much influence as the color of the flannel worn by the rheumatic, or the tincture of lavender dropped in by the "Recipe doctor," to beautify, or mystify, the potion; when we look in vain for any evidence of careful observation or original thought, finding nothing but vain-glorious self-puffing—we feel very much as we do, when, having been seduced into reading some apparently interesting paragraph in the morning paper, we end by butting our brains out—at least we feel little enough at the time to think we have done so—against Moody, "the shirt-king," or "Singer's Sewing Machine."

The volume under consideration, while treating of specialties, is not one of these "sells," if I may quote the expression. It contains chapters on the following subjects: 1st—Non-Union after Fractures; 2d—The Treatment of Deformities after Fractures; 3d—Statistics of Fractures and Dislocations Treated in the Pennsylvania Hospital during the twenty years from 1830 to 1850; 4th—Compound Fractures; 5th—Statistics of amputations in the Pennsylvania Hospital from January 1st, 1850, to January 1st, 1860, with a summary of the mortality from this operation in the same institution for 30 years; 6—Statistics of mortality after

Ligation of the Principal Arteries; and 7th—Varicose Aneurism at the Bend of the Arm.

1st. "*On the Occurrence of Non-Union after Fractures.*"

The following quotation will give the reader an idea of the method adopted by the author in the treatment, not only of this, but of all the subjects discussed in the volume.

"The single cases which at long intervals meet the eye of the reader, like the results of treatment by practitioners from recollection alone, not unfrequently mislead us, and I am inclined to think, were the scattered facts which we find recorded in our science more frequently collected together in tabular forms, compared and analyzed, that we would be furnished with much valuable information of which we are now deprived. I am well aware that many objections have been urged to this mode of arriving at conclusions. In surgery, unhappily, we are all too prone to silence in regard to our unfortunate cases, while it is rare that success after any operation at all out of the common course is not made known. This forms the ground of the most weighty of the objections that can be brought against the mode of arriving at results which we have followed, as, by any table of published cases of any particular treatment that may be drawn out, the conclusions furnished will be much too favorable, in consequence of the fortunate cases only (generally speaking) being found recorded. We acknowledge this objection to have weight, but nevertheless look upon even an approach to certain results as of some value, and regard the method employed, when cautiously done, as one of the modes by which sure improvement in our science is to be made."

This article is a comprehensive and yet condensed treatise on the subject of the union of broken bones, as well as on non-union, it being, for obvious reasons, impossible to treat intelligently of the latter, without considering the former also. Following certain experimentalists, our author divides the process of reunion after fractures into "five periods, each characterized by distinct phenomena." The *first* is a period of effusion and engorgement, and extends to the 8th or 10th day: the *second* is a period of absorption and the formation of the "callous tumor;" it extends from the 10th to the 20th or 25th day, and during this period the fibrous reunion is effected: the *third* is the period of the ossification of the external callus, and extends from the 20th or 25th to the 40th, 50th or 60th day: the *fourth* extends from the last to the 5th or 6th month, and during this period the internal ossification and consolidation take place, or the "definitive callus" is formed: the *fifth* extends from the last to the 8th, 10th or 12th month; and during this time peripheral and central absorption of the redundant callus is effected, while the "definitive callus is wrought into cells and canals," and the medullary cavity is restored. The views of Paget, Hamilton and others, in opposition to much of the above, are also given. These authorities, it will be remembered, contend that the union of broken bone takes place normally in accordance with the same principles as those governing the union of wounds in the soft parts. The author commits himself to neither theory. The views last mentioned, however, are certainly those now held by almost all, if not all, competent pathologists. Passing on to the consideration of his subject proper, he next divides mal-union and non-union of fractures into four classes; 1st, a fibro-cartilaginous union; 2d, no union at all; 3d, and the the most common, ligamentous union; and 4th, new joint with a synovial capsule. We would suggest that a *fifth* class should be added, in which the fragments are united by one or more long bridges, like small splints. The writer of this review has seen several such specimens.

After alluding to the atrophy to which the long fragments are usually subjected, the author next treats of the causes of non and mal-union. The subject is thoroughly considered, but no views or facts are given which differ materially from those found in the standard surgical works of the day. Speaking of the occasional influence of pregnancy as a cause, the following interesting case, first published by Mr. Alanson, in 1772, is given.

"It is that of a delicate female who, in the second month of pregnancy, met with an oblique fracture of the tibia, which, in spite of a well directed treatment, had not united when she was delivered at full time (seven months after the accident), but which, as she recovered strength, after her confinement, began to unite, and nine weeks after this period she was able to walk about her room with a firm limb. What proves beyond a doubt, in this case, that the want of union was owing entirely to her pregnant state was, that three weeks before impregnation she had been very happily and speedily cured of a fractured femur" (p. 26).

Many other interesting cases and experiments are recorded bearing on the etiology of non-union, and showing much careful research on the part of the author.

We would commend the views embodied in the following extracts in reference to the obscurity of the subject.

"So often, indeed, does non-union occur after the most regular treatment that we should be cautious in ever attributing this state of things to any fault of the surgeon" (p. 50).

"Even after a fractured limb has become perfectly firm, and is surrounded by a large mass of callus, it is possible for it to become softened, or even entirely absorbed, during an attack of general fever, erysipelas, or other acute affection" (p. 52)

Speaking in the next place of the remarkable degree of usefulness sometimes remaining, the author collects a number of illustrative cases from various sources.

In discussing the treatment, the various expedients which have been resorted to are considered seriatim, and their relative value judiciously estimated. They amount to 21, with amputation as a 22d! In reference to the plan of removing the extremities of the bone and connecting the fragments with wire, the following words are used, which we most heartily endorse.

"We cannot conceive it possible that it should ever be found a difficult matter to bring the fragments in apposition after resection of their ends. The loss of bone has been in those instances we have witnessed, and must, we judge, always be, sufficient to allow of their being so placed by position and a proper apparatus alone. The drilling of holes, and fixing of wires to the bones, besides lengthening an operation which is always tedious and painful, must neccessarily expose them to denudation of the periosteum, and consequent caries or necrosis" (p. 82).

After a minute and judicious analysis of all the plans that have been tried, he concludes with the following summary.

"From all that has been observed in the preceding pages upon the treatment of ununited fractures, it will be seen that we recommend:

1st. To apply the method of cure by rest and compression. If the fracture has been regularly treated, and is not consolidated at the usual period, replace the limb in the apparatus, and insure to it a state of complete immovability: if the treatment of the injury has been altogether neglected, or been inefficient, apply proper splints, and moderate compression with a roller, and renew these as soon as they become in any degree lax.

2d. If from want of action in the seat of injury, rest and compression are in themselves insufficient to produce a cure, continue the state of immobility in which you have placed the limb, and apply blisters, moxas, iodine or some other stimulant to the seat of fracture.

3d. If both of these modes fail in producing a deposition of callus, employ frictions.

4th. If the methods mentioned fail to produce a change, or the patient has already been suffering from his injury for eight or ten months, and there is no contra-indication to it, resort to the seton.

5th. If the cure be one to which, from its long standing, or state of the injured parts, the seton is inapplicable, expose the fracture and apply caustic potash to the fractured ends.

6th. If all the above means have been carefully resorted to unsuccessfully, and not till then, resect the ends of the bone.

7th. Never resort to amputation of the member until fair trials have been made with all of these methods, and then only at the request of the sufferer, after he has found that the limb can be of no possible service to him.

In employing any of the above means the obstacle to the occurrence of union which may exist, arising from the state of the constitution, should be carefully sought for and combatted by an appropriate treatment" (p. 102).

The article is accompanied by an admirably arranged table, embodying the main features of 150 cases collected from various authors.

2. "*On the Treatment of Deformities following Unsuccessfully Treated Fractures.*"

Three plans are given: (1) Pressure and Extension; (2) Rupture of the Callus; and (3) Resection. Each of these is considered in detail, and the cases in which each plan should be followed are carefully discriminated.

(1) *Pressure and extension* he considers "applicable only to those cases in which the callus has not yet acquired all the solidity of bone, an event which in the majority of cases does not occur till the fiftieth or sixtieth day."

Exceptional cases of success after this date are quoted from Dupuytren, Desgranges, and others.

(2) *Rupture of Callus.* This method may be adopted previous to the formation of the "definitive callus," i. e., before the 4th or 5th month, but little force, indeed, being required just after the dressings have been removed, as shown by the experiments, with weights, of M. Jacquemin, and by numerous recorded cases of refracture at this period from apparently but little force. Most surgeons have seen such cases; two very marked ones have fallen under the observation of the writer of this review.

In regard to the cases appropriate for rupture of the callus, the author uses the following language.

"It is only when an angular deformity exists, arising from the union of the fragments by their extremities, that rupture of the uniting medium can be attempted with any good prospect of success. When there is shortening of the extremity from the ends of the bones slipping past each other, even supposing that the rupture could be effected, union, in the majority of cases, would not follow, in consequence of the extremities having become rounded and smooth" (p. 120).

All advanced in reference to this—as to all the subjects of which he treats—is fortified by a carefully selected array of clinical and pathological facts culled from numerous authorities.

(3) *Resection.* It will suffice to quote the following paragraph to give the reader an idea of the views held by the author years ago in reference to this method of relieving the deformities under consideration, and which may be considered as still holding their own among surgeons.

"In cases where objection has been made to the rupture of the callus, where this is impossible to attain by the application of a safe degree of force, or when the deformity is of very long standing, and the union has taken place at any considerable angle, division, or resection of a portion of the bone, has in numerous instances been performed, and followed with successful results" (p. 124).

The plan of Dr. Brainard—first practiced by him in 1858—which consists in "weakening the bone by subcutaneous perforations and causing it to soften by the inflammation thus excited, and then straightening it by pressure" is mentioned, but, very prudently, not approved.

3. "*Statistics of Fractures and Dislocations Treated in the Pennsylvania Hospital during the* 20 *years from* 1830 *to* 1850."

This is a very carefully prepared paper. Its nature, however, gives the reviewer but little to say. In regard to the differential diagnosis between fractures of the neck of the femur and femorocoxal disarticulation, we would invite special attention to the following.

"The true nature of the injury in these cases is often more evident some time after the receipt of the accident than immediately upon its occurrence, and I am inclined to think that the necessity of close *secondary* examination in all instances in which there is room for a doubt as to the nature of the injury is not sufficiently insisted on" (p. 134).

Illustrative cases follow, the perusal of which will prove highly instructive to the practical surgeon.

It is customary among surgeons, in the lecture hall or clinic, as well as in the pages of the text-books, to lay a special stress on the *time* after the accident in which the reduction of each form of dislocation may be attempted. Now the *time* is not, of itself, the important element, but the *pathological condition* which may be present. In reference to this point, the following views of the author of this volume so thoroughly command the approval of the writer, and accord so fully with what he has himself for some years taught, that he was particularly pleased at their perusal.

"I am disposed to think that we have been accustomed to direct our attention too much to the time which has elapsed since the receipt of the injury only, without allowing the situation of the bone, and the degree of motion, due weight in determining the question.

4. *On Compound Fractures.*

It is impossible for us to enter into a detailed review of this article. Suffice it to say that the important subject is handled with the diligent research, the careful analysis, and the modest and cautious generalization which characterize the volume. We must be permitted, however, to disagree with the author on the following point. Speaking of compound fractures near the knee joint, he says:

"If the fracture extend near to the knee joint, the straight position is to be chosen" (p. 177).

A slightly flexed position we, in common with most surgeons, must think much preferable. In case of anchylosis at this joint. with the limb in a perfectly straight position, the toes cannot be so readily prevented from dragging on the ground in progression as when there is slight flexion at the knee.

5. *Statistical Account of the Cases of Amputation Performed at the Pennsylvania Hospital from January* 1*st*, 1850, *to January* 1*st*, 1860; *with a General Summary of the Mortality following this operation in that institution for thirty years.*

The table is well arranged, and the summary is a good one, with one exception. The percentage of mortality should be calculated by the author, and stated, in such tables and summaries. In these days, when "of the making of books there is no end," the reader has not the time to make such calculations for himself.

6. *Statistics of the Mortality following the Ligation of Arteries.*

The same remarks apply to this article. In speaking of the six cases of ligation of the subclavian artery—of the sixty-nine included in the table—which terminated by bursting of the tumor after ligation of the artery, the author says that in two of them "the contents of the tumor were discharged through the lungs" (p. 227). But this is evidently incorrect. The second case, as seen by the account the author himself gives of it, was not so discharged. The tumor in this case emptied itself into the pleural cavity, not through the lungs. It was one of Professor Gross' cases, and Dr. Norris' own words are, that "upon dissection the aneurismal tumor was found to communicate by an aperture, one inch and three-quarters in length by an inch and a half in width, with *the pleural cavity;* it was situated between the first and second ribs, and was obviously the result of ulcerative absorption, induced by pressure of the tumor. Both ribs were denuded of their periosteum. The right side of the chest contained nearly three quarts of bloody serum, intermixed with laminated clots and flakes of lymph, the former of which had evidently been lodged originally in the aneurismal sac" (p. 230). Surely in this case it can hardly be affirmed that the tumor discharged itself "through the lungs."

Several very interesting cases are given, in which even eminently skillful surgeons totally failed in their efforts to tie the subclavian artery. They are well worthy of careful study.

The table of ligatures of the external iliac—which, by the way, the author rather awkwardly terms simply the "iliac"—includes 118 cases. In 4 of these the supposed aneurisms had been mistaken for abscesses; and all four proved fatal. In another case "the aneurism which followed a gun-shot wound, was supposed to arise from a wound of the femoral. Upon examination it was found that the ball did not pierce the fascia lata, but had passed altogether in the subcutaneous fat, and that the only vessel wounded was a superficial branch of the femoral artery, which was divided close under Poupart's ligament and nearly an inch from the main trunk" (p. 246).

While dwelling on this important phase of the subject, the author gives the following account of the mistake made by the distinguished Edinburgh surgeon, the late Prof. Syme. The case was first reported, with characteristic honesty, by Prof. S. himself, in the *Edinburgh Journal.*

"The tumor which was stated to have followed a misstep made some eight months before his presenting himself for examination, was situated in the right iliac region of a man aged 54. It was tense, pulsated obscurely throughout its whole extent, and offered a distinct bellows sound upon the application of the stethoscope. Believing that an aneurism existed, Mr. S. made an incision into the abdomen, six inches in length, with the intention of securing the internal or common iliac, but when exposed, the tumor was found to be composed of a solid cerebriform mass, and was taken away entire. Seven days after the patient died, and on dissection, a chain of tumors similar in nature, was found surrounding the great vessels on both sides" (p. 247).

The table concerning the ligation of the carotids and the innominate is arranged in six series. The *first* relates to ligation for aneurisms, and comprises 38 cases; the *second* for wounds, 30 cases; the *third*, ligations preliminary to the extirpation of tumors, 18 cases; the *fourth*, for cerebral affections, 6 cases; the *fifth*, for erectile and other tumors, 42 cases; and the *sixth*, Brasdor's operation for aneurism, 15 cases.

The accompanying remarks on, and deductions from, these well arranged facts are judicious, logical, and interesting. We have no more room for quotations, however, and must content ourselves with this general endorsement.

But we have now, in mere justice to American surgery, if for no other purpose, to notice a most remarkable "sin of omission" on the part of our author: In his account of the ligations of the innominate not a word has been said in relation to the successful case of Dr. A. W. Smythe of the Charity Hospital, New Orleans. This case has now been for years before the profession in all quarters of the globe; and for a work of this kind to be issued in 1873 without the least mention of it, is, to say the least, simply inexcusable.

The table in reference to the ligation of the femoral artery includes 204 cases, and the accompanying remarks are of equal interest, and evince the same care as is generally shown in the preceding portions of the volume.

7. *Varicose Aneurism at the Bend of the Arm.*

This short article closes the volume. It is merely the report of a case, with a few general remarks of no special interest.

The publishers have done full justice to their portion of the work—as is ordinarily the case with the house of Lindsay & Blakiston. S. L.

Pharmaceutical Lexicon; a Dictionary of Pharmaceutical Science. ......Designed as a Guide for the Pharmaceutist, Druggist, Physician, etc. By H. V. Sweringen, Member of the American Pharmaceutical Association, etc. 8vo., pp. 576. Philadelphia: Lindsay & Blakiston, 1873.

This work consists of two parts, the first being occupied by a dictionary of terms belonging to medicine and pharmacy, and comprising about four-fifths of the volume. Much valuable information is undoubtedly contained in this large body of definitions, and it will prove useful to pharmaceutists and druggists, even in its present form. The derivation of the terms defined is regarded by the author as unimportant, and is consequently omitted. To those who are quite ignorant of the languages from which these terms are derived, it is of course of no consequence; and we may conclude that he deems it equally unnecessary for pharmaceutists to extend their linguistic accomplishments beyond their mother tongue. The pronunciation of words is totally ignored, and, as this point is not even mentioned in the preface, it is likely that it was entirely forgotten by the author. The omission of these two features from a dictionary, in our opinion, detracts seriously from its value, and we hope to see them supplied in a future edition.

Although the new chemical notation is adopted, the nomenclature conforms only partially to the last edition of the U. S. Pharmacopœia. We observe also that chemical formulæ are only rarely used in the definition of medicinal substances. These formulæ exhibit with the greatest brevity and clearness the composition of the chemicals used by the pharmaceutist, and, if employed at all, might be of advantage throughout this portion of the work.

Part second contains a great variety of articles, the list being as follows: "Abbreviations used in Prescriptions; Selected Prescriptions; Formulæ and Doses for Hypodermic Medication; Formulæ and Doses of Medicines for Inhalation; Doses: Posological Table; Diseases: their Definitions; Poisons: their Antidotes and Tests; Weights and Measures; Attfield's Saturation Tables; Table of Boiling-points of various substances; Chemical Formulæ [a brief explanation of chemical notation]; Atomic Weights of Elements; Specific Gravity [explaining modes of determining and giving tables of specific gravities of many bodies, solid, liquid, and gaseous]; List of Elements, and their principal Chemical and Physical Constituents [name, discoverer, date of discovery, symbol, atomic weights according to various authorities, atomicity and specific gravity]; Table of Pharmaceutical Equivalents [giving symbol or formula, name and equivalent or combining number]; Dietary for Invalids; The Preservation of Dead Bodies for Interment or Dissection; Leaves from an Old Dispensatory [very curious, giving some idea of the materia medica two centuries ago]; The Atomic Theory in Chemistry; Miscellaneous Tables from the U. S. Pharmacopœia of 1873; Weights and Measures of the U. S. Pharmacopœia of 1873."

These articles, with two or three exceptions, we consider well selected, and calculated to be very useful for reference. The title page indicates that the book is intended for physicians as well as pharmaceutists; but in reality the former are abundantly supplied with other works better adapted to their use, and the latter alone need a work of this kind. We are therefore clearly of opinion that the thirty-eight pages devoted to Selected Prescriptions were much better omitted. Apothecaries are already tempted beyond their power of resistance to transcend their legitimate duties, and the possession of a large number of prescriptions classified according to leading properties, and recommended for particular maladies, must inevitably encourage the habit of prescribing over the counter. The same objection is not quite so decided against the formulæ and doses for hypodermic injection and medicated inhalation, but they are not needed by the apothecary.

On the whole we see much to commend in the book, and are sure that it will prove useful; while the faults that we have particularized are such as might easily be eliminated from a future edition. H.

Handbook of Physiology. By William Senhouse Kirkes, M. D. Edited by W. Morant Baker, F.R C.S., &c. With 248 illustrations. A new American from the Eighth enlarged English Edition. 12mo., pp. 656. Philadelphia: Henry C. Lea; 1873.

This is the second American edition, a previous one having been published in 1857, based on the third English edition. It is evident that the work has been more highly appreciated in England than in this country, but it certainly can not be owing to a lower requirement of knowledge in this department of medicine there than here. Probably it is due to the fact that teachers in this country recommend the larger works, and that students prefer to buy a single book which will serve all purposes in Physiology. However that may be, it is evident that a work of such moderate dimensions, practical in design and not burdened with the discussion of unsettled points, yet containing the substance of what candidates for graduation are expected to know, will prove extremely useful to students pressed by daily attendance on lectures and preparing for examination.

While the consideration of general and comparative physiology; of animal light and electricity; of animal dynamics, or the relations of food to animal heat and the various forms of work, precisely expressed by numerical equivalents; and of the functions of the brain as the organ of the mind, is omitted, we may be satisfied to find within the limits of a hand-book the latest accepted views on those general and important points of physiology, the knowledge of which is essential to the practitioner of medicine. H.

A Practical Treatise on Diseases of the Ear, including the Anatomy of the Organ. By D. B. St. John Roosa, M.A., M.D., Professor of Diseases of the Eye and Ear in the University of the city of New York, etc., etc. Illustrated by wood engravings and chromo-lithographs. New York: William Wood & Co., 27 Great Jones Street; 1873.

From the date of the death of the lamented Joseph Toynbee to the present day, treatises on the diseases of the ear have followed one another in such quick succession, both in this country and in Europe, that one would suppose that the subject had been pretty well exhausted, so far as the present state of our knowledge is concerned. The well-known and excellent writings of Politzer, Troelsch, Gruber, Hinton and others on the continent, seemed to have left but little space for improvement to any writer in the short time that has elapsed since their publication.

But there did not exist any *one* comprehensive work, embracing the views and discoveries of all the best aurists in the profession, to which the general practitioner as well as the specialist might refer for information. We are glad, however, to be able to say that such a work has at last been laid before the public by Professor Roosa, of New York; and that the general plan and execution of the task are as complete and satisfactory as the present state of Otology will admit.

Time and space will not allow of our entering into any extensive review of this book; we wish simply to draw the attention of the medical fraternity to a few of its most striking features.

The first chapter opens with a general historical account of the rise and progress of Otology, from the earliest time to the present day; a subject which has not elsewhere—at least in this country—been fully entered into, and which will prove both instructive and valuable to the student.

Chapter sixth gives a detailed account of the parasitic fungi which occasionally become implanted in the ear, which will doubtless be of great interest to many, inasmuch as the discovery of these curious vegetable productions in the human ear is only of very recent date, and the accounts up to the present time have been rather meagre and unsatisfactory. We can vouch for the general accuracy of the observations of Prof. R., in this connection, from our own experience in a very interesting case of the same kind. But we cannot entirely concur with him in the belief that *warm water alone* is a sufficient parasiticide in these cases. Indeed, this agent, after diligent use for a long time, failed completely in our hands; and the fungus only disappeared under the use of a solution of tannin and carbolic acid of ten grains to the ounce.

Perhaps one of the most important chapters in this book is that which treats of foreign bodies in the ear. This subject is ably and carefully handled, and the general practitioner will find it as important and useful as it is interesting. No greater cause of alarm to both patient and friends can well exist than the discovery of the presence of a foreign body in the ear of a child; and nowhere in the whole range of medical practice is there more useless pain inflicted than in the management of these cases. Almost invariably friends or attendant resort to the use of some instrument or other, with no other result, in more than one half the cases, than that of lacerating the canal and of impacting still firmer the offending body. The author gives a voluminous account of the accidents, deaths, &c., in this connection, and wisely insists on the disuse of instrumental interference, except in very exceptional cases and in the most expert hands.

We might enlarge this notice considerably by detailing the various methods of treatment mentioned by the author for that most difficult, and oftentimes obscure department of Otology, embraced in the general term of "Diseases of the middle Ear;" but upon this uncertain and debatable ground time and space forbid our entering. Suffice it to say, in conclusion, that the work is enriched by a multitude of engravings, many of them new; that it is well printed and carefully gotten up; and that it is worthy of a diligent perusal by all who feel an interest in the study and advancement of this branch of science. E. H.

Skin Diseases: their Description, Pathology, Diagnosis, and Treatment. By Tilbury Fox, M.D., London, Fellow of the Royal College of Physicians of London; Physician to the Department for Skin Diseases in University College Hospital; Fellow of University College. Second American from Third London Edition, re-written and enlarged; with a Cutaneous Pharmacopœia, a Glossarial Index, and Sixty-Seven additional Illustrations. New York: William Wood & Co., 27 Great Jones Street; 1873.

This we regard as the very best work on diseases of the skin published in this country. Its excellencies consist chiefly in the systemization and simplification which are brought to bear upon the study of this department of medical science. Chapters first to four inclusive, treat of the "Mode of Studying Skin Diseases;" "The Anatomy of the Skin, and Anatomical Considerations;" "General Pathology of the Skin;" and "Etiology."

Chapter five is devoted entirely to classification. As Dr. Fox claims originality in this arrangement, we make room for his synopsis.

1. Eruptions of the Acute Specific Diseases (Zymotic). These I need not specify in detail.
2. Local Inflammations, comprising—
   - (*a*) *Erythematous* inflammations, including *erythema*, *intertrigo*, *roseola*, *urticaria*, *pellagra*, and certain medicinal rashes.
   - (*b*) *Catarrhal* inflammation, or *eczema*.
   - (*c*) *Plastic*, or papular inflammation, including *lichen* and *prurigo*.
   - (*d*) *Bullous*, including *herpes*, *pemphigus*, and *hydroa*.
   - (*e*) *Suppurative*, including those diseases that are essentially pustular—ex., *ecthyma*, *impetigo contagiosa*, and *furuncular* affections, inclusive of Delhi boil, Aleppo evil, and Biskra bouton.
   - (*f*) *Squamous* inflammations, including *pityriasis rubra*, and *psoriasis*.
3. Diathetic disorders, including *strumous*, *sphilitic*, and *leprous* diseases of the skin.
4. Hypertrophic and Atrophic diseases. Under this head are included on the one hand *pityriasis*, *warts*, *corns*, and *ichthyosis*, in which the epithelial layers are mainly affected, together with *keloid*, *fibroma*, *scleroderma*, &c., in which the connective tissue of the skin is involved—amongst hyperthrophies; and on the other, *atrophy* and *senile decay* amongst atrophies.

5. New Formations, in which the neoplasm is the essential and only diseased condition present. This group includes *cancer*, *lupus*, and *rodent ulcer*.
6. Hæmorrhages—ex., *purpura*.
7. Neuroses, such as *hyperæsthesia*, *anæsthesia*, and *pruritus*.
8. Pigmentary Alterations.
9. Parasitic Diseases, including—
   (*a*) *Animal*, or *dermatozoic*, including *scabies*, or itch, and *ptheiriasis*, or lousiness; and affections associated with the chigoe, the dracunculus, the leptus, fleas, bugs, gnats, &c.
   (*b*) *Vegetable*, or *dermatophytic* including *tinea favosa*, *tinea tonsurans*, *tinea kerion*, *tinea circinata*, which embraces Burmese, Chinese, and other ringworms, *tinea decalvans*, *tinea sycosis*, *tinea versicolor*, *tinea tarsi*, *madura foot*, and *onychomycosis*.
10. Diseases ot the Glands and Appendages, including—
   (*a*) Diseases of sweat glands—ex., *hyperidrosis*, *anidrosis*, *chromidrosis*, *miliaria*, *sudamina*, *lichen tropicus*, &c.
   (*b*) Diseases of the sebaceons glands—ex., *seborrhœa*, *asteatodes*, *acne*, *xanthelasma*, *molluscum*, *contagiosum*, &c.
   (*c*) Diseases of the hairs and their follicles.
   (*d*) " " nails.

I really think that this is a very convenient method of grouping skin diseases after a clinical fashion. The student must have some plan of reducing the multifarious maladies of the skin from chaos to some order, and the above I have found to be both useful and acceptable.

Now it will be observed, I have not given in complete detail the various diseases included under the separate headings. I have purposely omitted the rarest forms of disease, and been content to indicate the various classes of skin diseases met with clinically, and to furnish examples which any one will recognize as illustrations of the different groups, even if he is only beginning the systematic study of skin diseases. Until the diseases falling under the several headings have been described in detail, it is impossible for the student to comprehend the reason of their being assigned such and such positions in the list.

It is not possible to spare the space for the critical review which the importance of this book should demand. The best atonement we can offer our readers is to copy some of the author's remarks with regard to some forms of cutaneous disease very common in this country. First, the author's "general considerations" in regard to the treatment of eczematous affections, are as follows:

Firstly: It is important to remember that a typical case of well-marked eczema has certain stages through which it must pass more or less rapidly in its progress towards cure—viz., erythema, vesiculation, ichoration, pustulation, and squamation. Now, in the earlier stages the object should be to moderate inflammatory action—I use this term as a convenient one for the vascular and cell changes; and in the latter, especially that of squamation, to rouse the skin to a healthy action, so that those changes which are comprehended in the words "chronic inflammation" may be prevented occurring. The treatment is, as the rule, essentially *palliative* in the earlier, and *curative* in the squamous stages; or first soothing, and then stimulating.

Secondly.—Under certain conditions, however, the practitioner may readily hope to cut short or to abort an eczema. This can be effected only in the slightest forms of the disease, and more particularly those excited by local irritants; or by the employment of treatment at the very earliest moment. In instances of eczema connected with internal disorder it is difficult and uncommon to prevent the disease running through its ordinary stages. It should be our desire to conduct the disease through and past its discharge phase towards that of squamation.

Thirdly.—It is requisite to distinguish between what is essential and what is accidental in eczema. The capillary dilatation, the cell changes, and the escape of fluid giving rise to vesiculation, and so on, with the disturbance of the epithelial formation, all dependent originally upon perverted innervation, constitute the essentials; the strumous and gouty diatheses, organic diseases of internal organs, and the consequences of chronic congestion, &c., form the accidentals, which in some instances powerfully influence the real disease.

Fourthly.—Inasmuch as perverted innervation plays an important part in the genesis of eczema, and as cell proliferation can be induced by nerve irritation, the main treatment of eczema must be of a soothing nature, especially as regards local treatment in the early stages.

Fifthly.—There is no specific for eczema. That is to say, eczema does not depend upon a special blood-state which is alterable by the use of any particular drug; for that is the idea which prompts the employment of specifics for eczema.

Sixthly.—It would seem that there is no better term than debility (pure and simple) by which to describe the general condition which is most intimately connected with the evolution of uncomplicated eczema.

Eczema then is a curable disease, running, as the rule, through certain definite stages—the passages through which should be promoted; aggravated by anything that "irritates" the skin itself, from within or without; occasionally relieved, or even aborted, in its slighter forms or earliest stages, by soothing remedies; liable to be complicated by accidental occurrences consequent upon the persistence of congestion, such as œdema, induration, atrophy, &c.; modified by constitutional conditions, especially gout, struma, and syphilis; influenced by organic diseases of vital organs—the liver, the kidneys; the heart, the stomach; associated always with a lowering of the general vitality of the system, and not cured by any "specific." I venture to lay emphatic stress on two of these points—viz., the modification of eczema by different constitutional conditions, and the necessity for adopting a soothing plan of treatment always in the earlier stages of the disease.

Under the heading "Furuncular Affections," carbuncle and malignant pustule are carefully considered. The treatment recommended in the former affection is the following:

Now all know that if the patient is tolerably strong and has no organic disease, the carbuncle itself will slough out, and reparative action quickly follow. Such a case gives no anxiety, but one may materially aid the cure and moderate inflammatory action, by aperients, by diuretics, by opiates, or by tonics. In some cases the patient's strength *may* fail at an early period, and here what would be inadmissible in another—port wine, plenty of strong beef-tea, and full doses of bark and ammonia—are the proper remedies. With regard to local measures, it is also clear that the sooner the carbuncle is "ripe" and the dead tissue away the better; thereby the sooner the pain and its effects on the body generally are lessened, and the sooner nature can commence repair. To this end one needs to keep out the blood from the tumor, and to destroy artificially the part that will die; taking measures, by internal medicines, to bring the blood back as quickly as possible to a condition of health. And so, locally, pressure by strips of soap-plaster may be employed; but if this does not seem to succeed, and there are serious tension and pain, the swelling must be incised. The incision should be subcutaneous, crucial or single, as the case may be.

Surgeons are mostly in favor now-a-days of pressure, and afterwards caustic applications, with poultices to hasten the softening up of the carbuncular swelling; pain being met by opium once or twice a day, When the process of repair is approached, stimulating applications are needed; the best perhaps is some Friar's balsam, a drachm, say, rubbed up with an ounce of lard, or a carbolic acid ointment. M. Soulé, of Bordeaux, has suggested that Vienna paste be applied early, and an incision be made the next day; this prevents the presence of a wound that can absorb from without into the veins, whilst the dead tissues are the more readily removed; after the incision, the wound is to be dressed with tincture of iodine more or less diluted. But the pressure plan of treatment is the better.

In both boil and carbuncle a certain part has to die and come away. The sooner this occurs the better, and therefore I think that caustics are the best remedies, incisions being employed to relieve such tension as cannot be prevented by pressure.

Malignant pustule is a disease far more common in this country than in Europe, and consequently the author's descriptions of it, are for the most part obtained from American medical literature. Our experience with this disease has been both abundant and humiliating, and fully verifies the author's opinions with respect to its mode of spread:

The cause of malignant pustule is as stated, the contact of an animal virus derived from animal affected with "charbon." Dr. Richaud, quoted by M. Raimbert (of Chateaudun),* has observed the disease largely since 1830, and he now asserts that it occurs in those who touch the dead carcasses of "charbon" animals, are in constant contact with beasts, or are stung by flies that have feasted on the former. The disease is very common in the plains about the Alps from May to October, when the sheep in their peregrinations die plentifully on the road, and the disease attacks those who reside near the line of the passage of the flocks. The disease may also be got by direct inoculation—as in butchers, herdsmen, drovers—from contact with hides or tainted hair of diseased beasts, and, it is said, by eating the flesh of the latter.

But little can be profitably added to the author's one sentence in regard to the treatment of this terrible malady. The great leading indications are to support the powers of the system, correct errors of function, and to convert the virulent pustule into a healthy, suppurating wound, if indeed, in the improved surgical nomenclature, *healthy suppuration* may not come to be regarded as a misnomer.

The Treatment consists, essentially, in fully destroying at the earliest possible moment the eschar or vesicating part by caustic (potassa fusa), subsequently incising, applying charcoal poultices, with chlorinated soda washes, and giving internally a cathartic, followed by free doses of tincture of steel, carbonate of ammonia, and brandy, with generous diet.

We earnestly recommend this work to our readers. B.

The Medical Department of the United States Army from 1775 *to* 1873. *Compiled under the Direction of the Surgeon General.* By Harvey E. Brown, Assistant Surgeon, U. S. Army. 8vo., pp. 314. Washington, D. C.: Surgeon General's Office, 1873.

This work is devoted principally to the history of the Medical Department of the U. S. Army, from its organization in 1775 to the present time. It consists of five parts, corresponding to the periods into which this branch of the public service is most

* De la Spontaneite des Maladies Charbonneuses chez l'Homme.

naturally divided: I. The Medical Department during the Revolution; II. From the close of the Revolution to the Reduction of the Army in 1821; III. From the Reorganization of the Corps in 1821, to the Declaration of the War against Mexico; IV. From the Commencement of the Mexican War until the Bombardment of Fort Sumpter in 1861; V. From the Commencement of the Rebellion to the Present Time.

An appendix contains (A.) Register of Medical Officers who served to the close of the Revolution and were discharged in 1783; (B.) Registers of Medical Officers of the United States Army—I. From 1789 to 1818; II. From 1818 to 1821; III. From 1821 to the Present Time. This Register does not include those Medical Officers belonging to the Volunteer Forces who were mustered out of service at the close of the Mexican and the late Civil wars, and we are sure that people in civil life who refer to the volume will regret the omission.

To those who are interested in the history of our country, and especially to members of the medical profession, this book will prove both interesting and valuable, as the sources of information are authentic, being based almost entirely on official documents. H.

An Account of the Cholera, as it appeared at Nashville in the Year 1873. By W. K. Bowling, M.D.

We have read this pamphlet through, which is more than reviewers generally take the trouble to do by way of preparation; but in the present case the leading motive has been the intrinsic merits of the work, for we have found it irresistibly amusing, both as a literary production and as a contribution to science.

The first six or seven pages are devoted to the topography of Nashville, both recent and as it existed about twenty years ago. Then follows a brief history of the late epidemic.

The most important part of the essay treats of the origin and mode of propagation of the pestilence. Probably the fairest way to illustrate the writer's peculiar ideas, is to quote his exact language; and this certainly will afford the best exposition of his remarkable style: "Like cholera in modern times, the malign trio [small-pox, measles and scarlet fever], every ten to seventeen years, swept through the land, *uglifying*, crippling and killing the population. Now neither doctors nor people bother themselves as to whence they come or whither they *goeth*." [The italics are ours.] "To appeal to waters, or geological formations of particular areas, in explanation, is only ridiculous; and that made to exhalations from vegetable matter, 'living, dying or dead,' or *gasses* from the earth, air, or water, or all, through solar heat or otherwise, the most unsatisfactory of all—for these things exist only in definite places, in definite seasons of the year; while no one has to learn that cholera exists, by turns, everywhere, and at all seasons." We candidly confess that the syntax of the foregoing sentence is too much for us, and must refer to its author for elucidation. As to "geological formations," according to our observation cholera has prevailed with the greatest severity in this country in limestone regions; but we have no explanation of the fact to offer.

Again he says—p. 52: "Man's body is thus converted into an elaborator of cholera germs, which are as malignant, when thus evolved, as the parent poison in the jungles of India. These are thrown off in the diarrhœa and *gastorrhœa* of the cholera patient; and while wet are innocuous. * * * * When dry, unless imprisoned, they rise up from specific *levety*, as thistle-seed in August, and, without regard to the temperature of the air, will float on it, and under favorable circumstances, descend through it, enter windows and doors of dwellings, and be breathed, as impalpable atoms of dust, to the possible destruction of the breather." [Italics our own, as usual.] He is decidedly of opinion that cholera was not introduced into Nashville either by persons or fomites of any description, but that the germs traveled long distances through the air.

"Now, as city air has power to expel malaria, there is nothing illogical in the conclusion that it may attract the poison of cholera. It is only by conceding some such law that we can account for such facts as notoriously exist in association with the freaks of cholera." We need not here invoke the spirit of an imaginary Jack Bunsby, for, in reality, "there is an opinion as is an opinion." He further proceeds to illustrate the antagonism of malaria to cholera by the history of the late cholera invasion, in its passing over malarial localities and scourging most severely those cities and towns, like Nashville and Lebanon, which are markedly exempt from these endemic influences.

It appears that the irrepressible Dr. Peters, in his late report on cholera, rather strongly intimated that Nashville was punished for her filthiness. After declaring that Nashville is, at the date of writing, the cleanest city on the continent, Dr. Bowling continues in the following strain, which may illustrate his somewhat remarkable style: "Ah! filthy Nashville! Sewer, screw her, and renew her, till she is purer. Give her insides, that she may have bowels of compassion for her poor cholera-bedeviled citizens. Then the Gospel of soap and water will foreshadow her millenium. Wash well her outside, and pour the soap-suds down her inside, and let them deposit their solid filth in the convolutions of her bowels, to belch up such stinks upon every vibration of the atmosphere, as would amaze one not accustomed to it, like myself, who, having a hole at my office door, to let the surface-water of the street into a sewer, reaching to the river, have the advantage of a mile of concentrated stink, composed of such a combination of gases as would bewilder a chemist."

On the the following page he continues—p. 27:

"HOW WAS IT FOR HIGH?"

"It loved the high places, and the clean places—clean because high—and did not flourish on runs, or licks, or branches." * * * * P. 35—"On these branches, and all the low grounds they and their tributaries drain, there were but 68 out of 800 deaths, 740 being on high ground."

We come now to the logic of this extraordinary work, and shall let the author speak in his own language. - Page 54—"So with cholera. Its phenomena are not accidental or hap-hazard, but determinate and inevitable. The cholera poison does the whole work; it is the man, *solitary and alone*, foreordained and predestined, in the providence of God, to be the striker of Mr. William Patterson." [We are glad that the question "Who struck Billy Patterson?" is at last definitely settled, and trust that the scientific world will make due acknowledgment of this great discovery.] Page 53—"It *desires no aid* to do its work on man—neither the aid of high places nor low places, of filth nor malaria, *nor any thing under the sun*." Page 54—"Now, a man having this cholera germ in him at the same time with vegetables, fruit, or animal products, he explodes; the same harmony existing between them as between fire and gunpowder." Page 39—"Every physician I have seen in this city, since the cholera, assures me that it is his belief that no man or woman or child dies of cholera who is not overtaken by that disease with fruit or vegetables, or one or more animal products, as milk, butter, cheese, eggs, or honey, in the stomach. That if a threatened people will religiously avoid these things, and keep a little paregoric by them, and in the event of diarrhœa, take a teaspoonful of it, and repeat it after each operation, being in bed, not one will die. Not one died here in 1850, 1854, 1866, or 1873, that observed this rule." Page 55.—"The notion of intermediate causes, elaborated by Simon, in 1866, repeated by Pettenkofer recently, and huckstered by small brains generally, is an absurdity that must strike every one who will think. Does any one suppose that the poison of small-pox, or of the rattle-snake, needs anything between it and the man?"

If the vegetables, &c., mentioned above, do not stand, according to the author's statement, as an intermediate cause between the cholera poison and its fatal issue, we certainly fail in comprehending his language; and we acknowledge a complete failure to reconcile these several propositions with each other. Many individual instances are adduced of the efficacy of the same intermediate cause, but it is probable that at least an equal number of instances might be afforded of partaking with impunity of the same forbidden articles of diet. During the prevalence of bowel derangements generally, simple prudence demands the avoidance of all unsound articles of food and all those difficult to digest. Many green vegetables are included in the last category. During the cholera of 1866 no change was made in the dietary where we then boarded. Vegetables were eaten freely, and not one out of about fifty was attacked.

The pamphlet appropriately closes with some original verses, in reply to a poetical complaint of a young miss about the restrictions imposed on her appetite during the cholera outbreak. We were not before aware that Dr. Bowling kept a muse, but as he has, in his mature years, relapsed into his youthful indiscretions, we will let his friends take warning from his example.

"Oh no! not hungry, darling,
  'Tis impossible to be—
And come and sit beside me,
  While I sing a song for thee.
I will not sing of sirens,
  Who lure to destroy,
And on the tears of children
  A banquet rare enjoy.

* * * * * * *

"'But God!' said Adam. 'I mind,'
His smiling Eve replied;
'He has quite old fogy grown.'
And so she ate and died.
Now, Lela, die if you must,
Of God-sent pestilence,
But not of 'garden-sass,'
As folly's recompense."

We are quite aware that this notice has been prolonged to an undue length; but it is impossible for most of our readers to see this incomparable production, and we wish them to behold some specimens of that gushing style of vernacular which flourishes among the untamed children of nature out on the borders of civilization, but rarely refreshes the arid pages of medical literature. H.

CORRESPONDENCE.

New Orleans, August 20, 1873.

Mr. Editor: During a recent visit I made to New York, I had the opportunity of visiting several of the large hospitals, asylums, and special dispensaries, which the great metropolis may justly be proud of, and also of becoming personally acquainted with some of its most distinguished practitioners and professors of medicine.

While neglecting nothing of interest in our profession, I devoted more particularly my time and attention to the study of some affections of comparatively rare occurrence amongst us, and which are consequently less studied by most of those who practice in this section of country. One class of affections I was specially interested in, knowing from my readings that it was to some of the prominent surgeons of New York that science was most indebted for the great progress lately made in their treatment. I speak of chronic affections of articulations, amongst which I have in view more particularly affections of the hip-joint.

The knowledge of these affections is the more interesting and worthy of special study, as we reflect that a few years ago they were very little known; and to the present day, I may say, very erroneous opinions are entertained about them by a large majority of practitioners. Their rational and proper treatment is known practically to but few. Thanks to the progress accomplished during the last twenty years, we are now enabled to cure, in a majority of cases, diseases which were looked upon by older physicians and surgeons as incurable, or, if curable, involving, as an ultimate sequence, loss of motion or more or less considerable deformity.

Formerly diseases of articulation, white swelling, scrofulous or tuberculous affections, as they were called, were considered as being invariably the result of a general affection, as the local manifestation of a diathesis, or constitutional disease, and were therefore looked upon as incurable, or at least, so much beyond our control as the general constitutional affection itself which gave rise to its development. The consequence of this opinion was that physicians and surgeons satisfied themselves, in most cases, with prescribing, *pro forma*, anti-lymphatics and tonics, paying little or no attention to the *local* treatment, for we cannot give that name to the application of leeches, blisters, and the different pomades, which were the trite treatment of the time. Bonnet, of Lyons, was the first to insist upon the absolute necessity of an orthopædic treatment. His method consisted particularly in the perfect *immobilization* of the diseased parts of the affected articulation. Bonnet's method was certainly a great progess in comparison with the older plan of treatment. By it many patients were cured with more or less anchylosis, and this result was considered quite a success. The method of Bonnet is to this day generally followed in Europe, with a few modifications as to the mode of obtaining perfect *immobility*; some, like Richard, in a recent work, highly commending the starch bandage; others, special beds or fixed apparatus. It is one of the glories of American surgery to have originated a new method, based upon a more accurate knowledge of the nature of the disease. For *immobilization* of the joint was substituted the idea of removing all pressure upon the joint, of relieving it of the burden of the body, while preserving in the same time all its natural motions, thereby preventing contraction, anchylosis, &c. By this method the parts are at rest, while the patient is erect, and while the muscles accomplish all their functions. Extraordinary achievement! Rest and movability combined, instead of former immobilization with all its bad consequences! While European surgeons obtain immobilization of the diseased joint by immobilizing the whole body, American practitioners have contrived means by which they secure perfect and complete rest of the joint, and enable at the the same time the patient to exercise in the open air. They justly insist upon out-door exercise, and consider a constant supply of fresh, pure air, as absolutely necessary to a perfect success.

To Davis, Taylor and Sayre, is due the honor of having solved the great problem, which forms the basis of the whole modern plan of treatment. They invented apparatus by which the joint is not immobilized, as formerly, but by which the contact of its articular surfaces is prevented, thereby causing all pain to cease, and enabling at the same time the patient to leave his bed and take out-door exercise, as will be explained hereafter.

The treatment of American surgeons—particularly that of Dr. L. B. Sayre, Professor of Clinical and Orthopædic Surgery at Bellevue Hospital Medical College—is based upon the fact that hip-joint disease is not necessarily a constitutional disease; that it is, on the contrary, in most cases a purely local affection, attacking healthy children, and caused by a local injury, such as a fall, a strain, a blow, &c., which has developed a slow and insidious inflammatory process, special to the intra-articular tissues that we find affected, which morbid process, if not arrested, brings on successively, suppuration of the joint, destruction of the elements composing it, necrosis, &c. An impartial observation and minute examination of hundreds of cases, leaves no doubt in my mind as to the correctness of Dr. Sayre's views in regard to the origin and nature of hip-joint disease. Reason, abstraction of well-observed facts, would seem to indicate it. If hip-joint disease were always a scrofulous or tuberculous affection, as believed by many, would cases of perfect recovery, without loss of motion or deformity, be as frequent as we find them to be in large northern cities where the disease is mostly observed? Could any orthopædic treatment, without any general or constitutional treatment, in the majority of cases, achieve such remarkable results as those I have seen, if the disease was really a constitutional or diathetic affection? Being local, in most cases, a proper rational local treatment will and does cure it. By local treatment I mean *orthopædic* treatment; for fortunately the time has passed when the patient—a child, generally—was tormented with blisters, moxas, &c. The success of the present orthopædic mode of treatment is due to the knowledge of the fact, that by removing pressure on the joint, by preventing friction or contact of inflamed articular surfaces, we prevent pain and its natural consequences, such as muscular contractions, with deviations of limb, and deformities of the surrounding region. In proof of the reality of this fact, we have only to pull apart moderately with our hands the articular surface of a diseased joint (provided the affection be intra-articular, as it is in hip-joint disease). Pain, which before was excruciating, is immediately relieved, while the very minute the hands are withdrawn, and the articular surfaces are allowed to come in contact, the pain returns with the same violence. The apparatus, by performing the office of the hands, produces the same effect. It prevents friction between the articular surfaces, it gives immediate relief, and the return of pain is not to be apprehended so long as the apparatus is not removed. Besides, we can easily understand that by preventing friction between the diseased articular surfaces, with its attending danger of compression of all the intermediary tissues, synovial membrane, cartilages, &c., this method removes a most powerful cause of destruction, of disorganization of the joint itself. Of the different appliances that have been contrived to obtain the desired result, Dr. Sayre's hip splint is the most perfect and the most generally employed. It is light, not bulky, only reaches to the condyle of the femur, and possesses sufficient power for the purposes required.

It consists of two pieces or rods of steel, so symmetrically indented as to allow the lower piece to slide within the upper by means of a key, thereby forming a splint extending from below the crest of the ilium to two inches above the condyles, along the outer part of the thigh. The upper end of it is articulated by means of a ball and socket joint, in imitation of the ilio-femoral articulation, to an oblong, padded concave steel plate which rests upon the pelvis, just below the iliac crest, and to each extremity of which is secured a smooth and strong perineal band, well padded and terminating in an inelastic webbing. At the lower extremity of the splint are two semicircular steel bands, passing in front of the thigh, and connecting with a vertical steel rod extending only a few inches along the inner region of the thigh. A strap extends posteriorly from the inner to the outer rod intended to secure the position of the apparatus, when it is adjusted.

The ingenious method adopted by Dr. Sayre to maintain the apparatus in its proper position consists in the application of a strongly adhesive inelastic sticking-plaster, secured by a well adjusted roller, and covering the whole surface of the treated limb from its upper extremity to the condyles, and connecting itself at its lower end by means of a webbing and a buckle to the lower end of the splint, both internally and externally. The apparatus being properly adjusted, extension and counter-extension (through the perineal band) are obtained by means of one or two turns of the key, the slightest remoteness of the head of the femur from the acetabulum causing all pain to cease. In fact, as long as the extension is continued, pressure, however strong made on the knee or on the sole of the foot, will not produce the slightest pain, while the moment extension is diminished by unwinding with the key, pain returns most violently under the slightest pressure.

The hip splint is removed at night when the patient is in bed, and extension of the limb is continued by the ordinary appliance of pulleys and weights. The counter-extension is then effected by the weight of the body itself. To render it more efficient, the bed is disposed in such a manner as to form a slightly inclined plane from the foot to the head. The weight attached to the child's extremity must not be so great as to cause pain, by pulling too violently on the muscles, and does not prevent the patient from turning over and sleeping in the position that most suits him.

A system of bandages and plaster corresponding with the one intended to secure the splint, as above mentioned, is used to secure the application of the weights and pulleys.

The great point during the whole treatment consists in preventing friction in the joint, whatever position the patient may occupy, whether standing, sitting or lying down, and *that* is easily and surely obtained by means of Sayre's hip-splint, during the day, and by means of weights and pulleys during the night. Extension and counter-extension by one or the other of these appliances should be kept up constantly, not allowing the patient to be without either of them for one single hour.

These bandages are very solid, firm and, like the hip-splint, are not noticeable under the child's garments. They cause no pain, leave the region of the joint uncovered, and will remain on perfectly for several weeks without being changed.

If this mechanical treatment is properly applied, and employed from the beginning of the affection, it will, in a great majority of cases, be sufficient to effect a cure without deformity or loss of motion. Except in cases of special indication, no internal remedies are required. The patient should live as much as possible in the open air, and should be fed on the most nutritious food. The wearing of the hip-splint should generally be continued during one year, and should not be discontinued before that time, even should the patient seem to be able to use his limb without it.

To facilitate the child's exercise in the open air, to enable him to *walk* without fatigue, Mr. S. A. Darrach, of Orange, New Jersey, has invented a machine, or wheel-crutch, which is now in general use North, and which cannot be too highly recommended. In hip-joint disease, as well as in Potts' disease of the spine, in partial paralysis of the lower extremities, and other cases of disease or injury this machine is of immense benefit, and, in many cases, has proved to be a direct curative agent. I was surprised to see the remarkable results obtained by means of Darrach's wheel-crutch or perambulator.

It consists of a strong light frame open at one side, and supported by four small wheels which are so disposed as to allow the machine to advance or turn in any direction with the slightest touch of the feet on the floor or ground, on inclination of the body. It is easily guided and cannot swing sideways or tip over. The top, or body piece, has elastic cushioned arm-rests and elastic attachments to the frame, and will adjust itself to any position of the body, thus equalizing the pressure at the arms, making a comfortable, uniform and safe support.

There is a body support, or saddle, which relieves the arms of part of the weight. The legs being relieved from the labor of supporting the body, can move in a more natural way, bringing all the muscles into action, promoting circulation, &c. A child using this machine can walk or rest as he feels inclined, and remain in it many hours without fatigue.

I saw in Dr. Sayre's private and hospital practice hundreds of cases of hip-joint disease, in its different stages, from the very incipient stage to that of disorganization and complete destruction of the whole joint. I saw and examined children who had been affected with coxalgia, in their first infancy, and who so completely recovered under Sayre's treatment, as to make it impossible for one to say whether the disease had ever existed. Even when the disease has reached the period of suppuration, recovery may reasonably be expected with or without the necessity of resection. I have witnessed several abscesses of the joint treated successfully by means of oakum drainage, which is preferred by Dr. Sayre to the ordinary method of drainage by means of tubes.

I will here state that out of 48 exsections of hip-joint performed by Dr. Sayre within the last few months, some of them under most unfavorable circumstances, there were but 8 deaths, the balance recovering, with serviceable limbs. One of the most renowned skaters of New York is a young man whose hip joint was resected in his infancy.

It was my fortune to be present at two operations for exsection of the hip at Bellevue Hospital. One month after, the patients were doing well, and the wounds healing nicely. I witnessed also three operations of tenotomy, rendered necessary to remedy deformities resulting from hip-joint disease. In these cases, the disease had left the joint anchylosed, with considerable flexion and adduction of thigh; the subjects were young girls, 13 and 14 years old, who, during their infancy, had been affected with hip-joint disease.

After cutting the tendons, the adhesions which existed in the joint had to be violently broken. These operations, which were necessary to place the limb in its proper position, were not followed by any unpleasant symptom, firm and uniform compression being applied to both limbs, and the patients being for eight or ten days perfectly immobilized in Dr. Sayre's Wire Breeches.

This contrivance is a modification and improvement of Bonnet's *grande gouttiere.* It is much lighter, yet sufficiently strong and resistant, has an apparatus for extension by means of a foot-board and screw, has also a head-supporter, and is so disposed at the region of the hip as to permit all necessary dressings and examinations without disturbing or causing pain to the patient. It is of immense advantage after exsection, as well as in many other cases, adapted to carry the patient with ease and comfort to any distance, or to take him out daily in the open air, thereby greatly benefiting his general condition, affording him exercise, recreation and pleasure.

It may be useful to the profession to state that Dr. Sayre's Wire Breeches, as well as his Hip-Splint, are manufactured by Messrs. Otto & Rynders, 64 Chatham street, New York.

I here close this communication, which I hope will not be entirely without interest to the profession. I will, perhaps, at some future day, Mr. Editor, claim the hospitality of your paper to add a few more remark on this important subject. I am satisfied, for the present, to have called the attention of your readers to the great services rendered, in this branch of surgery, by American surgeons, to whom science is already indebted for so many ingenious and remarkable innovations.

DR. F. FORMENTO.

Editor New Orleans Medical Journal:

I think it would be of great benefit to the medical profession, if its members who are located in places remote from each other should have more communication with each other than by our annual meetings, which we are always delighted to attend, knowing that there we may "throw dull care away" for a few days, enjoy without limit the pleasures of convivial good fellowship, which compensates amply for being "bored to death" by being compelled to listen to some "dry old fossil," as he reads what is facetiously termed in the minutes a "scientific paper." The yearly meetings of the American Medical Association may be conducive to promoting friendship among its members, but it is of no earthly use whatever to medical science, and the only benefit it brings to any one is to a few "soi disant" leaders of the profession, who by sharp wire pulling succeed in gaining a little brief notoriety by being elected to some official position.

The better mode of thus holding communication, and making ourselves better acquainted with the diseases we are called to treat, and for information in regard to epidemics, &c., is by the means of a well-conducted medical journal. I being, it is true, a young practitioner, am willing to do my part; so I write to you my observations on our late visitor, the cholera. Springfield is a city of eighteen or twenty thousand inhabitants, situated in the interior of Ohio, in what is known as the "uplands." The city is situated on the side of a hill gently sloping North to Lagonda River, a tributary of Mad River. A small stream called "Mill Run" divides the city into two sections, called respectively the East and West End. The Lagonda and Mill Run are both rapid streams, being a succession of rapids with rocky beds, the channels being worn in the solid limestone rock. The surrounding country is "rolling" and under a high state of cultivation. The city being a "manufacturing one," the dwellings for the most part are well located, ample and comfortable. In the extreme East end, on the low, flat ground, the houses are of a decidedly shabby appearance. This part of the city is inhabited by Irish and Germans, and a few negroes. In this portion of the city our visitor "from New Orleans" found a favorable place to make his presence known. It has been customary with me to note the rise, progress and decline of all the prevailing diseases, especially those of a contagious nature, and those which would be likely to prove epidemic. I noticed as early as the month of May a strong tendency to "intestinal irritation." In the early part of June this "tendency" had perceptibly increased, connected with a marked symptom which is unusual in this section, i. e., great nervous irritability or "severe" crampings of the muscles of the extremities, &c. So great was this tendency to intestinal diseases and spasmodic affection of the nervous system, that if a cathartic were administered it would often produce a troublesome diarrhea and severe crampings; this tendency still increased, and during the last half of the month of June there was a large number of cases of cholera morbus, always accompanied by severe, persistent and violent crampings.

The cholera having been for some time in Cincinnati, we were in daily expectation of having it in our midst. The first cases of cholera were on Sunday, July 13th. It made its appearance in the family of a colored man living in a hovel that would have rivaled a pig-sty for filth and dirt. Of a family of seven, five died during that day and the next. Very few cases appeared during the week until Sunday, July 20th, which was "our bad day." It is a strange coincidence that the majority of cases occurred on Sunday. I account for it in this way: This class of people (Irish and Negroes) are notoriously improvident in their way of living, and during the last of the week they and their familes live on little or nothing. Saturday being pay day, and this being the only time they have any money, they buy large quantities of stale fruits, berries, &c., because they can get them cheap, and then "take a gorge." Nearly all cases of cholera in this city can be traced to some indiscretion in diet, exposure or intemperance, and only a few cases occurred in which no such cause could be traced.

My associate is a physician of fifty years practice, and with experience in the treatment of this disease in '49, when its ravages were fearful in this city, and I am in the situation of all young physicians—beginning in the back alleys, and when gray hairs come expecting to get into the "brown stone fronts." As I am not yet gray-headed, and being as yet employed in the back alleys, I am "monarch of all I survey" and "Lord of the *foul* and the brute." So the majority of the cholera cases fell into our hands for these reasons. My associate was called on account of his known experience and success in treating the disease during the epidemic of '49, and his reputation as a skillful physician. I was called because they were unable to pay, and were compelled to take me or none; consequently I had the most ample opportunity of observing the disease in all its forms. The disease never assumed the proportions of an epidemic in this city, nor did any cases appear in any part of the city except on the low ground before mentioned; it remained in the city about one month. A general tendency to dysenteric troubles followed, and still remains. The mortality in cases of cholera was one in fifteen. If a physician was called in the first stages it was exceptional when death was the result. The remedies used by the physicians here were various: as calomel, opium, camphor, ammonia, &c. The mode of treating cholera by means of the hypodermic syringe is here considered of very little utility, and for my part I think it a *fraud.* From the marked tendency to choleraic diseases for such a long period I am inclined to think this disease is an atmospheric one, i. e., produced by miasmatic or malarial influence, this tendency being so general that the slightest infraction of the rules of health was sufficient to bring on an attack. In accordance with these views I treated the disease with mercury and opium, but placed my chief reliance in a well known remedy, quinia, or disulphate of quinia, i. e., a solution of the sulph. quinia 20 grains to the ounce; dose, a teaspoonful *p. r. n.* I used this remedy quite extensively during the preceding cholera morbus, and found it the best of remedies to arrest the violent emesis when other remedies had failed. I think it arrests the vomiting by the sudden impression it makes on the nerves of taste, by reason of its intense bitterness. Severe indeed must the case be, if a free dose of the disulph. of quinia will not arrest the emesis. I have found it also to be a most prompt and efficient remedy to allay these severe and powerful crampings, and on it placed my chief reliance. There was one peculiar symptom connected with those cases of cholera, and to me it was almost a pathognomonic one—that all cases of cholera, even before the disease had reached its grave and severe form, sometimes in the very onset of the disease, exhibited THAT PECULIAR CAST OF COUNTENANCE WHICH WE ALWAYS SEE IN THOSE WHO HAVE RECEIVED A SEVERE INJURY, and symptoms of a shock are as distinctive as in cases where a leg has been crushed by a locomotive.

CYRUS D. RICHEY.

Springfield, Ohio, September 1st, 1873.

The Reply of James C. Harris, M.D., to the Strictures contained in the New Orleans Medical and Surgical Journal for September, 1873, *on his Essay on the Climate and Fevers of the South-western, Southern Atlantic, and Gulf States, &c., by "H."*

This essay, we are informed by Dr. H., "consists of a volume of 103 pages, the first part treating of the physical geography, animals, plants, minerals and prevailing diseases; the second being occupied with a brief discussion of *malarial fevers*, followed by a description of the 'Dead Sea Region,' intended to illustrate and prove his theory of the *gaseous nature of malaria*.

"Of part first little need be said, as it is mostly compiled from good authorities, and its general accuracy is not questioned." In this first part, mostly compiled from good authorities, and the general accuracy of which is not questioned, reference is made to the prevalence of five yellow fever epidemics in Savannah, Ga., page 10; one in Selma, and two in Cahawba, Alabama, pages 14 and 19; an epidemic yellow fever that prevailed in Key West Barracks, Florida, in 1854, page 33; together with an account of the rise, progress, and decline of the yellow fever as it appeared and prevailed in Brownsville, and Fort Brown, on the Rio Grande, in 1853, pages 52-3-4.

As all of these yellow fever epidemics are, upon the authority of their very *intelligent* and *experienced historians*, most positively *asserted* to have been clearly of *local origin*, we very naturally suppose that Dr. H., entertaining as he does different views from these upon the subject, would have denied the assertion, and endeavored to have shown their *exotic origin;* but instead of this he backs out from the undertaking, and dodges the issue, by making the following quotation from our essay, pages 18 and 19: "In New Orleans a *variety of malarial fever, with black vomit,* has been frequently observed, sometimes in an epidemic form, and described by Dr. Faget since 1853, under the name of *hæmatemesic paludal fever*, which so much resembles the *true hæmagastric pestilence* that it was recognized by Drs. Delery and Fenner, together with a large majority of their medical brethren, as *pure yellow fever*. After making the above quotation, the Doctor then remarks that he admits that Dr. Fenner considered yellow fever a *variety of malarial fever*, but that his opinion was not shared by anything like a majority of his *confrères*, and is positive that no such belief is now entertained by any considerable number of our practitioners." Writing upon this subject, here is what Dr. Faget says himself in relation to the matter: "The similarities of the *hæmatemesic malarial fever* to this same *true yellow fever* were so deceiving in New Orleans that the great majority of the physicians saw in *them* but one *identical fever*, the yellow fever."*

In the paragraph immediately following the above quotation and statement of the opinions of the physicians of New Orleans, we are informed that on page 19 of our essay we state that "*Selma* had not been visited by *yellow fever*," and on page 20 remark that "in 1854 and 1855 it again made its appearance and prevailed." Upon the authority of Dr. Edward Gantt, we state on page 19 that yellow fever appeared and prevailed in Selma during the fall of 1824, and on page 20 that from this period the locality escaped a recurrence of the disease until the seasons of 1854 and 1855, when it again made its appearance and prevailed. The *obscurity* of expression charged elsewhere as being present on nearly every page of our essay, in this instance, at least, (the *obscurity*,) we must insist, existed somewhere else other than in the language here used.

That yellow fever originates from *causes* within the localities where it prevails, we consider so *clear*, and *thoroughly established* by the writings of La Roche, Drake, Fenner, Chervin and others, that we do not, on the present occasion, consider it worth while to add anything more upon the subject.†

Although *remittent fever* is the *type variety* of *malarial* fever, in localities where malarial fever is annually endemic, it frequently appears and prevails as an *intermittent* or *continued fever*, and these types during an epidemic visitation frequently blend, or run into each other.

Those who believe in the *specific contagious* character of yellow

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* New Orleans Journal of Medicine, vol. xxii., October No., 1869, page 784.

† See La Roche on Yellow Fever, vol. ii., pages 802, 803, 804.

fever, contend that it is a fever consisting strictly of but one paroxysm, of some seventy-two hours' duration; succeeded by a *remission*, denominated by Lining the *stadium*, and by Mosely the *metaptosis* or *calm*, and that after this calm there is no more fever, unless the lesion of some organ again calls the heart into action, which, it is believed by the advocates of one paroxysm doctrine, rarely ever occurs.

"As regards the *type* of this *paroxysm*—whether during its continuance the fever observes a continuous course, or whether it presents alternations of exacerbation, and diminution, which would entitle it to the appellation of a paroxysmal disease of a *remittent* or *intermittent* character—a great difference of opinion has long existed, and still continues to exist."* Upon this subject we are informed by Dr. Ralph, that in the epidemic of Barbadoes of 1816, a most striking disposition to assume *a distinct remittent type* was observed. Those who had suffered much from *ague* evinced this disposition in a most remarkable manner, when the treatment had been regulated by a knowledge of this fact. But even in the young and unimpaired constitution, where the disease had been seen and treated soon after the period of invasion, it not infrequently showed *distinct remissions.* On the other hand and in many of the severer cases, in which remedies were of little avail, the disease appeared to consist of a single paroxysm, the violence of which was such as to occasion extensive structural derangement in one or more important organs, thereby rendering the system incapable of conducting the disease to a *remission.*†

Again; we are informed by Dr. Bryson that the yellow fever that prevailed at Fernando Po, in 1829, was very similar to that of Sierre Leone—"*distinctly remittent* in its character, and accompanied by a yellow suffusion of the skin and eyes, and black vomit."‡ By the same authority we are also further informed, that the yellow fever epidemic on board the Buzzard, in 1839, was *remittent*, each case being marked by *two distinct daily exacerbations*, one in the *morning* and the other in the *evening*—the latter the more severe, and lasting until midnight. The remissions were attended with considerable alleviation of the more urgent symptoms."§

* La Roche on Yellow Fever, vol. i., page 429

† Ibid, vol. i., pages 430-1.

‡ La Roche on Yellow Fever, vo.. i., page 431.

§ Ibid, vol. i., page 431,

From the character of the foregoing extracts, and which, were it necessary, could be greatly increased, we are unwilling to admit that, *yellow fever as a general rule is a fever of but one paroxysm;* neither are we able to understand *how*, during the epidemic prevalence of *malarial fever* in a locality like New Orleans, where it is annually endemic, that a case of *malarial continued fever*, attended with yellowness of the skin, suppression or failure of secretion of urine, *hæmorrhages* and *black vomit*, constitutes a purer case of yellow fever than a fever attended with similar symptoms of the *intermittent* or *remittent types.*

Our publishers, Messrs. Walker, Evans & Cogswell, of Charleston, S. C., we consider entitled to our warmest thanks for the handsome manner in which they have brought out our essay; and considering the many hard "*Arabic*" words, occurring in the description of the "Dead Sea Region," we consider it remarkably *free* from *typographical errors.* But nothwithstanding this, we are accused by Dr. H. of introducing rather an original manner of spelling *lichens*, *cantelope* and *mosquito*, but must here beg leave to remind him, that for the spelling of *cantelope* as it stands in the text, there is very high authority, and that from Noah Webster, L.L.D., who spells *height*, *hight*, and *traveller* with one *l*, it appears that lexicographers have not yet determined on the exact proper orthography of *musketo.*

In conclusion, Dr. H. complains that the word "*tropicoid* frequently occurs in our essay, but that he does not recollect its use elsewhere." Oid, εἶςος, likeness, from εἴςομαι, to resemble, when affixed to other words, signifies a resemblance, hence a *tropicoid* climate means a climate resembling a *tropical* one. Dr. Forry, in his work on the climate of the United States, which it appears our learned reviewer has never done himself the pleasure of reading, occasionally uses the word, and on page 300 applies it to the summer climate of the United States.

Rejoinder of Dr. H. to the Foregoing.

V

Dr. Harris seems to fail, in several instances, of apprehending my meaning in the notice of his essay in the September number, and it is proper that the explanation should accompany his reply, for the convenience of our readers.

(1) My object was to criticise his work, rather than to

assail the validity of his authorities. Besides, an attempt to prove the exotic origin of the epidemics alluded to would involve more labor than I could devote to the subject, more space than the *Journal* could spare, and a greater tax on the patience of its readers than ought to be imposed.

(2) No one should try to prove by Dr. Faget the identity of yellow fever with the malarial fevers. The article from which Dr. Harris quotes was written by Dr. Faget to *dis*prove this very idea; to prove that certain hæmorrhagic symptoms occur in our endemic miasmatic fevers, as well as in yellow fever; and to correct the error of some of our physicians here in connecting these symptoms indissolubly with yellow fever. I believe that his views are now generally entertained both by our own practitioners and by those outside of New Orleans, in the Southwest; and that not even the illustrious La Roche, Drake, Fenner and Chervin would expect their researches to set at rest forever those points which must be decided in each generation by weight of accumulated evidence. Medicine is not an exact science, and moves and changes with the progress of investigation and discovery.

It often happens that yellow fever supervenes in a malarial fever of remittent or intermittent type, as does also enteric or typhoid fever, in miasmatic localities. In pneumonia periodic exacerbations are so common in the Southwest, that some practitioners years ago regarded this disease as a form of malarial fever, forgetting that it prevails where paludal fevers are unknown. The danger of mistaking malarial fevers with hæmorragic symptoms for true yellow fever is well put by Dr. Faget, and may account for some share of the paroxysmal manifestations in supposed cases of yellow fever observed by the writers whom Dr. Harris quotes.

(3) In regard to yellow fever at Selma, here are Dr. Harris's exact words: "It appears from a comparison of all the information that Dr. Drake was able to collect at this place and Cahawba, concerning autumnal fever, that he was brought to the conclusion that the disease prevails less here than there, which might be expected, he thinks, from the difference in their topography. *It has not been visited by yellow fever.*" [Italics my own.] On the following page—"From this period this locality escaped a recurrence of yellow fever until the seasons of 1854–5, when it again made its appearance and prevailed." No obscurity is

charged in the foregoing quotations, but how is the clear contradiction to be explained?

(4) Worcester, our best authority in orthography, spells *cantaloupe*, and recognizes *canteleup*, but no other forms. He gives preference to *mosquito*, and recognizes thirteen other forms, among which *moschitor* is not found. I was at no loss for either the meaning or etymology of *tropicoid;* but, in failing to recognize its claims to recognition as a legitimate word, am content to find myself in the company of Webster and Worcester.

Epidemic of Memphis, Tennessee, in 1873.

After learning the nature of the epidemic in Memphis, its symptoms, treatment, etc., and having satisfied ourselves that the yellow fever was positively reigning in that city, it was none the less important to ascertain how it had reached that town, it being very unusual to hear of yellow fever in Memphis.

True it is that some cases of *bilious remittent and pernicious malarial fevers* were to be found, as has been demonstrated to us by the autopsies which we have made; but the main trouble, the principal scourge which is mowing down the Memphians like grass, is true yellow jack in all its fury, and the rolling waters of the Mississippi carry to the gulf the news of an unheard of epidemic far from its mouth.

As well as we could ascertain from different sources, the following facts relating to the origin of the disease are, we believe, the most accredited by the population. They would seem to prove that the disease was imported in the following manner: The towboat Bee, in tow of barges, plying between New Orleans and St. Louis, landed, on or about the 20th of August, at Memphis, a man who was too sick to continue his trip up the river. One story says that this man was taken aboard, as a passenger, at the mouth of Red River, where several refugees from Shreveport embarked with their baggage. Another story denies this, as this towboat is in the exclusive use of the Mississippi Valley Transportation Co., and takes no passengers up or down the river. Be the matter as it may, whether the man came from New Orleans or Shreveport, he was landed at Memphis, being too sick to continue up the river. The man was said to be yellow, and some of the parties in Happy-Hollow would not approach him. A kind hearted but dissipated man, by the name of Riley, took this man into his house, and asked one of his neighbors to help him in so doing. The sick man died at Riley's house, being quite yellow after death. Shortly after, Riley took sick and died. His neighbor, who had helped him in his humane work, was soon taken down with the disease and also died. From thence the disease spread into Happy-Hollow, from door to door, in every direction, until all the houses in the locality had been visited by the fever. (Happy-Hollow is a small portion of Memphis at the foot of the bluff, immediately on the river bank and near the steamboat landings. It is inhabited by poor people who, though poor, seeming always happy, had obtained for their abode the name of "Happy-Hollow.") The disease was then thought to be jaundice or bilious remittent fever, which latter is common in swampy regions. Mr. Miller, an intelligent gentleman to whom we are thankful for valuable information given, is owner of the Panola Oil Works, a large establishment situated in Happy-Hollow, within stone's throw of both Riley's and his neighbor's houses. He was taken sick on the 25th ot August. His book-keeper fell sick the same day, and died. The captain of the Bee is reported as having died of yellow fever, on his boat, six miles above Memphis.

Soon the whole of Happy-Hollow was stricken down with the disease. From this place it spread slowly and gradually about one square to the week (Mr. Miller), up to Promenade street, thence to Front, Main, Second, Third, etc., in the northwestern portion of the town. On the sixth day of sickness Mr. Miller was back at his office, not knowing that he had had yellow fever. Two more of his men fell sick. One came out after two or three days' sickness to tell Mr. Miller not to have his place filled, and died two days after. Another came to the factory after 36 or 48 hours' sickness to draw $6, which was due to him; the next day he was dead. This shows how ignorant the people were about the nature of their malady.

On the 8th of September, yellow fever was declared to be positively in Memphis. It is useless to mention the consternation and fright of the people. All who could, fled to the country in all directions. Others fell sick, and some actually died before medical assistance could reach them. When we reached Memphis on ths 6th of October, at least 600 inhabitants had already died, and many more were down with the disease. The fever was raging with terrific violence in the northwestern portion of the town, in about the space bounded by Promenade street, west, Fourth street, east, Mill street, north, and Advance street, south. This included the jail and extended to the gas-works. It having been reported to us that the jail had so far escaped the pestilence, and that for two squares around the gas-works no cases of disease had been heard of, we turned our footsteps in that direction and satisfied ourselves of the state of things. But alas! such was not the case. The houses in the *immediate* vicinity of the gas-works had almost *all* been visited by the disease and the angel of death.

The statement of Dr. John H. Erskine, attending physician to the jail, is as follows: "We have had several cases of fevers at the jail, which were so mild as not to be diagnosed yellow fever. One, which was doubtful, was sent to the Walthall Infirmary. We have not heard whether this case proved to be one of yellow fever. These cases were treated on the expectant plan, without quinine, and cured. The mildness of these cases was probably due to the fact that the hygiene of the place is very strictly watched. The place is fumigated twice a day by burning coal tar, while carbolic acid is freely used throughout as a disinfectant. The building, once or twice a week, is washed out from top to bottom, water pipes having been laid out for that purpose." This statement was made on October 17th. If any cases of fever have been reported, it is since that time. For the last three months the jail has had an average of 125 prisoners all the time.

The limits above named as about those of the disease on the 9th of October, were in the course of 24—48 hours overstepped, the fever progressing rather rapidly in the direction of Chelsea, north, beyond Bayou Gayoso, east, and down south Memphis. At the same time sporadic cases showed themselves at different and opposite extremities of the city. On the 21st of October, when we left, it was disseminated all over the town. It was on the increase in the southern portion, whereas it was on the decrease in the northern, here the battle ceasing through a lack of combatants. By this time no more cases of fever were to be found in Happy-Hollow, which had been cleared out, as it were, by the disease, the number of deaths having been very great.

The city was covered with a black shroud. Business almost entirely suspended. Houses and stores everywhere closed, with the doleful placards in hand-writing—"Closed on account of sickness;" "closed on account of death in the family." He who closed his doors to-day was, sometimes, to-morrow closed in his coffin. Families composed of six, eight or ten members, were swept away as if by a torrent, buried one after another, if not two or three at a time.

The fever, however, has probably not been the worst enemy of the poor people of Memphis. The city was surprised, taken most unawares; no board of health, no Howard association, to assist the sufferers. Many fled to the country. Others, on account of their poverty or unavoidable circumstances, remained, whereas some volunteered to help, nurse or treat those who fell sick, though they themselves might be—as did happen in many cases—among the first victims.

We have treated some who not only were unable to buy their medicine, but on account of poverty were stretched on a blanket or a miserable mattress, on a damp and rotten floor, without any one to give them a drink. Many have died in this condition before they could be found out.

The people were terrified, demoralized. Nurses, Sisters of Charity, priests, physicians alike were stricken down and died. Memphis saw herself compelled to call on her sister cities for assistance. We readily understand that the fever, under such circumstances, must have shown itself in its most malignant types. Hemorrhages, though not very common, in the cases that we have seen, were yet not infrequent, and showed themselves by the mouth, tongue, gums, nose, eyes, stomach, bowels, genital organs, and in many cases were the immediate cause of death. The most striking and by far the most common mode of death, in this epidemic, was a quiet one, brought on by the direct sedative influence of the poison. Some cases, however, died in convulsions, or had delirium or sub-delirium, and many of these were patients addicted to alcoholism during life. We were sorry, indeed, when we arrived at the bluff city, to see on its streets the great number of instances of alcoholic intoxication. Upon inquiring, we were told that these parties thought that to drink, be drunk, and remain under the influence of alcoholic stimulants, was the only sure way to avoid catching yellow fever. They made use of alcoholic drinks as a prophylactic. It is useless to say that of these, those who were attacked either died or were very sick.

Nor did the medical faculty of the city agree as to the positive nature of the epidemic. At first, as above stated, it was believed to be a bilious remittent fever of a malignant or hemorrhagic type. On the 8th of September it was declared to be yellow fever. The majority of the profession maintained that it was; others maintained the contrary. Each physician treated the disease according to his particular views and ideas; every one reported cases of deaths and cases of success—in what ratio we cannot tell. We must admit that the first cases shown to us were taken for cases of a remittent nature and not of yellow fever, on account both of the looks of the patient, who did not have the "cachet" peculiar to that disease, and on account of the assertions of the patients that they had had a strong chill, followed by a high fever, which disappeared almost completely during the day or night, and that they had suffered all summer from malaria. But very soon other cases showed themselves unmasked, and above all, the *thermometer* and *pulse* proved to us that we had to deal, in most cases, with yellow jack—alas! an old acquaintance of ours. The yellow fever epidemic raging at Memphis did not, however, prove itself to be, in our opinion, a typical, uncomplicated one; and the proofs of this assertion we think are to be found in the results of three autopsies made by us, on the 14th of October. We are sorry to say these were the only ones made up to that day. We do not pretend to accuse the medical corps of Memphis of negligence in this respect, as we consider that for men who were unacclimated, and liable to catch the disease and die—and such, unfortunately, has already been the lot of six of these noble disciples of Hippocrates—those who have *remained at their post* have acted nobly and deserve well of their country. Those who have *died* have *immortalized* themselves.

We only regret, for the sake of science, that things did so happen that only three autopsies, instead of three hundred, are on record. These post-mortems were made with the greatest care in presence, "enpartie," of Dr. White and Mr. Newsum, "attaches" to the city hospital, assisted by two of the nurses of the place. Time and space do not allow us to enter into the details of the pathology of each case. These will be given at length in the next number of the JOURNAL, where also will appear the results of the cases which we have treated. Suffice it to say that the notes of these autopsies were read and pathological specimens shown to Prof. Joseph Jones, M. D., of the Medical Department of the University of Louisiana, who agreed with us in the result, that we had had one typical case ot *bilious remittent fever*, one of *yellow fever*, with a *malarial spleen*, and a negro who presented after death traces of both diseases. This was a mixed case; or is it peculiar to the negro? Such were the results of three autopsies of subjects taken at random. The visceræ, placed on a table side by side, showed marked differences. To Dr. Gustavus B. Thornton, physician to the city hospital, we here tender our thanks for the facilities afforded to us in making these autopsies.

The symptoms, very light in some cases, were well marked in others. In another paper we shall enter into their details.

The disease reigning in Memphis is yellow fever, but this does not imply that the fever might not be tainted with malarial toxæmia, or that other fevers might not exist at the same time. The fact that the city has already been visited by at least six frosts, some very heavy, and ice a quarter of an inch thick, without any *decisive change* in the situation, shows a certain tenacity in this epidemic which is common to malaria, whilst, as a general rule—and such is the experience of most authors—a heavy frost kills yellow fever. If Memphis is out of the yellow fever zone, but in a malarial region; that fever was brought thither, imported directly from New Orleans or Shreveport, found a suitable temperature for its development among unacclimated and demoralized people, and reigns with a terrible malignity. Many of the cases at the outset were so masked as to lead us to believe that we might have to deal with severe attacks of dengue, until the changes of the pulse and temperature showed that we were facing yellow fever cases; others going through the course of their sickness and recovering without, at any time, having had the least yellowish tinge about their persons. The temperature and pulse were here the best indication through which we could arrive at a positive diagnosis, and if yellow fever is to be classed among the eruptive diseases, we had to deal with an *exanthema sine exanthemate.*

This leads us to the treatment of the disease, which was most varied. Some cases recovered without anything being done; many died in spite of the best and most appropriate treatment. The theories from which these different modes of treatment were derived must, for the present be left out. One treatment deserves mentioning, on account of the great opposition that it met on the part of the majority of the profession, and its great support by a very small minority, and one gentleman in particular, Dr. Paul Otey. We allude to the *quinine* treatment. Is quinine admissible in yellow fever? Was it proper to administer it in the *epidemic at Memphis?* The greater part of the profession were opposed to its administration, some going so far as to consider it in whatever doses as fatal. On the other hand a few gave quinine, and one in particular gave it to almost all his patients. Unfortunately it will be impossible to know which of the different forms of treatment was the best, as all did not take down the number of patients treated. What we can certainly say is, that *quinine in our hands did not kill in the epidemic of Memphis in* 1873.

We have seen many of Dr. Otey's patients, and do not remember his having lost over five or six during our stay in the city. If quinine was so pernicious, most of these should have been killed.

Dr. Otey has contended, all the time, that there was very little yellow fever in Memphis. On the other hand Dr. Luke P. Blackburn, of Louisville, Ky., told us, on or about the 15th of October, that he had yet to see three cases which were not yellow fever, and that the ten grains of quinine that we had given to a patient had been his dead shot.

However great our esteem and respect for these gentlemen, we must disagree. We have in Memphis yellow fever, malarial fevers, and cases of yellow fever tainted with the malarial poison. Our post-mortems have, we think, proved this, and the result of Dr. Otey's practice and ours has proved that quinine was not such a terrible enemy of yellow fever patients. Why have not all our patients died? How is it that out of eight patients treated by us, to whom we gave quinine, seven were cured? It will be said that these patients would have recovered without the quinine. In another paper we will discuss this point.

Memphis is said to have a population of about 45,000 souls. Twenty thousand, if not more, have left the town, leaving the afflicted population to be between 20,000 and 25,000. A number of these were negroes, whose proportion of deaths was very small. Already poor Memphis has lost over 1000 inhabitants by yellow fever. Of a statement of 240 deaths in the week from the 7th to the 13th of October, inclusive, whose ages and colors are known, we have 234 whites to 6 negroes. Of these 147 were males and 87 females; 4 negro men and two negro women. The two extremes in the ages being 10 days and 70 years, between which death at all ages has taken place. This shows that yellow fever has no preference as to age. The very tender age, however, would seem to be somewhat less subject to the fever, as only two cases (10 days and 2 weeks) were under one year.

Y. R. LeMonnier, M. D.,
Visiting Surgeon, Charity Hospital, New Orleans.

EDITORIAL.

Yellow Fever Disinfection.

The short article by Dr. Perry, on another page of this Journal, will, we trust, receive a degree of careful consideration commensurate with the importance of thesubject. The author, in this paper, plainly intimates a belief that disinfection may be so successfully directed and practised that protracted quarantines shall no longer embarrass commerce. This is certainly a desirable eventuation. But infinitely more blessed results than this would follow our attainment of a capability to destroy the germs of epidemic pestilences, and in this manner to stay the arm of the destroying angel when first stretched over an affrighted population.

We have closely watched the phenomena of yellow fever diffusion in this city during the past three years, and there can be no sustained negation of the fact that the spread of yellow fever has been less certain, general and rapid, than in former years. The following tabulated comparison will enable the reader to form his own conclusions on this point:

	1871.		1872.		1873.
	Cases Reported.	Deaths.	Cases Reported.	Deaths.	Deaths.
July...........	1	1			3
Aug............	2	2	2	1	19
Sept...........	38	12	25	10	99
Oct............	53	29	43	20	68
Nov............	19	10	13	8	
Dec............	1	1			
Totals..........	114	55	83	39	189

During the general epidemic of 1867, the deaths in this city were 3107. In 1868 and 1869 the deaths were three in each year. In 1870 they amounted to 587. There are one or two considerations which should be kept in view in any attempt to weigh the influences which were operative in diminishing or enlarging the sum of mortality for the current year. One rests in the fact that a larger than usual proportion of cases did not originate here, but were imported. Perhaps the language would more precisely accord with the true state of the case, if this statement should read that a larger proportion than usual, of persons treated here received the specific poison of the disease elsewhere. This would not only occur to every well informed mind as obviously an unavoidable result, growing out of the unusual prevalence of yellow fever in various places connected with this city by rail and river routes of travel, but the hospital statistics fully establish the fact. In 1871, twenty-five per cent. of all cases reported were admitted to Charity Hospital. There were 29 admissions—20 deaths: per cent. of deaths, 72. In 1872, thirteen per cent. of all cases reported were admitted to Charity Hospital, viz., 11 admissions. 8 deaths: per cent. of deaths, 72. In 1873, the cases reported to November 1st amounted to 368, of which one hundred were admitted to Charity Hospital to date of November 1; forty-eight to Hotel Dieu, and six to the Touro Infirmary. During the present year, therefore, over forty per cent. of the cases reported were treated in hospital. These figures, of course, plainly indi cate that the number of non-residents treated in this city was greater than usual. The percentage of deaths of patients treated in hospital in 1873, is near 73.

Another consideration may be mentioned as perhaps influencing yellow fever spread, which is not unworthy of scientific notice. Sydenham held that the ruling epidemic which prevails at the same time and place with other forms of epidemic disease, impresses its own characteristics upon the latter, impliedly to their partial or entire exclusion. He writes: "Again it must be carefully remarked, that, as many of these diseases appear in the same year, some one or other of them rules over the remainder, which rage less at the same time; so that this one increasing, the others decrease, and this diminishing, the others soon reappear." During the month of July dengue appeared in epidemic form in this city. My first case was attacked on the 22d of July. From the date of the first outbreak of this disease to the present time, it is a most reasonable calculation which assumes that more that fifty thousand inhabitants of this city have undergone attacks. There is a wide-spread popular belief that an epidemic of dengue is protective against the simultaneous prevalence of yellow fever. I do not know of any scientific records which may be appealed to to settle this question.

In noting still further the results of disinfecting measures, with a view to estimate their practical value, it should be remembered that the yellow fever prevailing in the United States in 1873 is virulent in type almost, if not quite beyond precedent. The same causes, excluding those which are local, which give the epidemics of this year their terrible fatality, must also endow the morbific germs with more vitality, so to speak, and render them less susceptible to agents employed for their destruction. The ratio of deaths to the number of cases treated is a varying one, accordingly as epidemic intensity, personal receptivity, or complicating concurrent diseases differ in various epidemics, and in diverse localities. From the best information obtained from my confrères in this city, and from my own observations, upon the epidemic of 1867, the ratio of deaths to cases treated was about 7 per cent. These figures must be understood to apply exclusively to private practice, and it is necessary also to add, private practice attended by favorable circumstances which usually surround the clientelles of established and successful physicians. The epidemic of 1867 was remarkable for its mildness. No estimates which may be relied upon as correct, can be based upon the ratio of deaths reported by the Board of Health to the number of cases they sum up. Dr. Russell, the efficient secretary of this board, is of opinion that at least ten per cent. of cases occurring, are not reported.

Another proof of the greater intensity or abundance of the poison, is found in the remarkable diffusion of the disease, both as it respects geographical limits and as it respects its personal communicability.

In these periods of rapid transit from one extreme of the country to another, no locality is so remote or isolated that yellow fever germs may not find their way to them under circumstances favorable to their multiplication. Quarantines must therefore become impracticable and obsolete; consequently, as sanitarians and humanitarians, our profession must bring its learning and energies to the task of ascertaining what particular agents are *real* "disinfectants" in respect to each of the special poisons producing our worst epidemics of zymotic forms of disease.

In all these remarks, the reader may perceive an implication of belief in thé exotic character of yellow fever. Such is the writer's opinion, even in so far as this city is concerned. There may be found, however, very high medical authority which maintains that New Orleans is within the zone of autochthonous production of this disease. There are but few points in medicine in regard to which physicians should exercise more caution than in their affirmations respecting the origin of yellow fever epidemics. The presumption may be very strong that yellow fever was conveyed to a point of outbreak from one particular port, while the truth may be that it was conveyed thither through a very different and unsuspected avenue Or, it may be that it originated from a *de novo* start; or, what is far less improbable, the favorable local conditions may have developed into activity germs that had been imported months or years before. By preserving strict exactitude in our statements, and in being always prepared to back them up with unassailable testimony, we have the only mode of avoiding such errors.

Books Received Too Late for Review.

The new medical works named in the following list have been received, and will be critically noticed in the January number. They may be obtained through James Gresham, 92 Camp street:

Trousseau's Clinical Medicine; third edition; complete in two volumes.

Stellwag, On the Eye; fourth enlarged edition.

Laceration of the Female Perineum and Vesico-Vaginal Fistula: D. Hayes Agnew.

Diseases and Injuries of the Ear: Dalby.

Bloxam's Chemistry; from second revised English edition.

Taylor's Manual of Medical Jurisprudence; seventh American edition.

Principles of Mental Hygiene: D. A. Gorton.

Aeology and Therapeutics: J. G. Westmoreland; Atlanta.

OBITUARY.

Died of apoplexy, at his residence in this city, on the 10th ult. James Jones, M.D., Professor of Obstetrics and Diseases of Women and Children in the Medical Department of the University of Louisiana. Professor Jones was born at Georgetown, D. C., in 1806. He graduated in Medicine at the Medical Department of the University of Pennsylvania. He was elected Professor of Obstetrics and Diseases of Women and Children in the Medical Department in the University of Louisiana in 1836. In 1839 he was transferred to the chair of Practice of Medicine, which he occupied until 1866, when he resumed the chair of Obstetrics and Diseases of Women and Children, and continued in that position until the period of his death.

At a meeting of the Faculty, held October 17th, the resolutions appended were presented by Professors Joseph Jones and Logan and adopted by the Faculty.

Resolved—1st; That in the death of our colleague, Professor James Jones, M.D., Professor of Obstetrics and Diseases of Women and Children, in the Medical Department of the University of Louisiana, the Faculty have lost a distinguished and faithful colleague, and the students a warm friend and eminent teacher, whose professional life of forty years, has been devoted to valuable labors in behalf of the University, and in the cause of humanity.

2d. That we bear testimony to the judgment, skill, and ability of Professor James Jones, as a physician, and to his high attainments and culture in science and literature.

3d. That in Professor James Jones, the Medical Profession has lost an honored co-laborer, and the community a kind, skilful, and learned physician.

4th. That we tender to his family in their great affliction and grief, our respectful sympathy.

5th. That a page in the minutes of the proceedings of the faculty be left blank, and inscribed to the memory of Professor James Jones.

The following beautiful and appropriate remarks are extracted from the address ot Rev. Mr. Adams, offered as a part of the rites at the interment of Professor Jones' remains.

To do away with the searching woes of death, to dispel the terrors which it casts upon the mind of man, to heal the envenomed wounds which it makes upon the heart, to cast the divine sheen of hope over all the dark paraphernalia of the tomb, to make that tomb itself resplendent with the temporary presence of a God, and the perpetual presence of an immutable promise, was the work of that Great Physician—our blessed Lord.

The root of the medical profession and the Christian Ministry is the same. Sin is the cause of all the pains, the diseases and disabilities of the human body. The work of the professions is also alike in kind, though different in extent. They are both redemptive; they both battle against the work of sin. The one as it appears in the body, the other as it manifests itself in the whole being and constitution of man. Therefore, we find our Redeemer joining both in his own person—owning the body as a divine workmanship and an equal partner with the soul in the creation—in the Fall and in His complete Restoration and Redemption. He healed the sick. He opened the ears of the deaf. He restored sight to the blind, He cleared the obstructed avenues which hindered His approach to the court of reason, the tabernacle of conscience, and the most holy place of the affections. Then became He a physician to the whole nature; then pointed He out by plain words the cause of all these bodily maladies; then said He to the man sick of the palsy, "Thy sins be forgiven Thee, arise, take up thy bed and walk."

Our deceased friend labored in a ministry around which is thrown the splendid lustre of a divine example. No hurried and ill digested tribute of affection, however ardent and profound, can render justice to his name.

A large medical knowledge must be the ready ally to personal devotion. Those who were his brethren in the same noble career, they only can comprehend him. Perhaps he is dead who could better than all other men have portrayed his character in all the relations of his life—as physician, as friend, as husband and father. He who journeyed and toiled with him through the course of a whole generation; he whose companion and steadfast friend he was, as together they easily rose in the high, intelligent esteem of the learned and honorable members of their profession, in the reverence and love of their fellow-men, while they amply filled the circle of more than a mere provincial fame; the great man over whose ashes the deceased himself but yesterday pronounced an eulogy in the trembling and impassioned tones of a wounded love.

These so long friends and contemporaries, both disciples and lights of science, adorning and illustrating a profession already distinguished for its learning, now lie coffined together—their arms locked in death as in life. The cere cloth cannot bind their fame nor obscure the lustre of their renown.

METEOROLOGICAL REPORT FOR NEW ORLEANS.

Table I---September.

Day of Month.	Temperature. Maximum.	Minimum.	Range.	Mean Barometer Daily,	Relative Humidity—Mean	Rain fall—inches
1	87	74.5	12.5	30.11	75	.01
2	88.5	76	12.5	30.10	75	.03
3	90	76	14	30.10	79	.10
4	91.	76	15	30.11	76	.20
5	89.5	76	13.5	30.14	76	
6	90	76.5	13.5	30.10	73	.12
7	80	74.5	5.5	30.09	91	1.41
8	82	72	10	30.08	83	
9	84.5	73	11.5	30.02	80	
10	84.5	70.5	14	30.05	75	
11	84	72	12	30.06	73	
12	87	78	9	30.01	72	
13	86	—	—	29.98	74	
14	81.5	70.5	11	30.02	65	
15	83	65	18	30-05	74	
16	82	70.5	11.5	30,06	79	
17	82.5	73	9.5	29.93	76	
18	84	73.5	10.5	29.84	83	
19	88.5	73.5	15	29.85	69	
20	86	71.5	14.5	29.97	71	
21	86.5	68.5	18	30.02	69	
22	88.5	74	14.5	29.97	74	.10
23	86	75	11	29.90	77	
24	84.5	72.5	12	29.90	78	
25	86.5	73.5	13	29.98	79	
26	83	76.5	6.5	30.01	83	.40
27	85.5	76.5	9	30.03	92	.60
28	84	76	8	30.01	89	.30
29	86	75.5	10.5	30.	81	
30	83	75.5	7.5	30.	77	
Mean	85.48	73.65	11.83	30.016	77.26	Total. 3.27

Table II---October.

Day of Month.	Temperature. Maximum,	Minimum.	Range.	Mean Barometer Daily.	Relative Humidity—Mean.	Rain fall—inches
1	80	68	12	30.	77	
2	86	72.5	13.5	30.02	77	
3	84.5	70	14.5	30.02	74	
4	86	72	14	29.99	71	
5	88	73.5	14.5	29.89	75	
6	77.5	59	18.5	29.90	58	
7	68	52	16	30.04	59	
8	74	55	19	30.12	71	
9	79	62	17	30.14	71	
10	80.5	65.5	15	30.17	68	
11	81.5	65	16.5	30.14	78	
12	78.5	66	11.5	30.11	77	
13	75.5	59	16.5	30.16	61	
14	79	62	17	30.22	70	
15	82	67.5	14.5	30.26	88	
16	79.5	69	10.5	30.24	83	.02
17	81.5	68	13.5	30.12	81	
18	83	67.5	15.5	30.13	77	1.03
19	67.5	57	10.5	29.07	59	
20	66	52.5	13.5	30.09	58	
21	76.5	54.5	22	29.97	71	
22	78	63.5	14.5	30.06	70	
23	80	65.5	14.5	30.06	87	
24	68	59	9	30.18	87	.30
25	78.5	64.5	14	30.17	77	
26	82.5	—	—	30.01	78	
Mean..	79.61	63.60	17.00	31.28	73.00	Total. 1.35

Mortality in New Orleans from September 1st, 1873, to October 26th, inclusive.

Week Ending	Total Mortality.	Whites.	Colored.	Yellow Fever.	Malarial Fevers.
Sept. 7......	154	115	39	16	32
Sept. 14.....	171	130	41	35	32
Sept. 21.....	149	104	45	26	21
Sept. 28.....	150	108	42	22	23
Oct. 5......	138	103	35	15	22
Oct. 12.....	155	113	42	24	25
Oct. 19.....	141	100	41	18	14
Oct. 26.....	143	101	42	11	14
Total.......	1201	874	327	167	183

THE

NEW ORLEANS

MEDICAL AND SURGICAL

JOURNAL.

JANUARY, 1874.

ORIGINAL COMMUNICATIONS.

ARTICLE I. *Contributions to the Natural History of Specific Yellow Fever. Composition and Character of the Urine in Yellow Fever.* By JOSEPH JONES, M. D., Professor of Chemistry and Clinical Medicine, Medical Department, University of Louisiana, Visiting Physician of Charity Hospital, New Orleans.

Up to the present time our knowledge as to the composition of the urine in yellow fever has been imperfect. Beyond a few crude observations, and the important fact first announced in the work of Daniel Blair, that in this disease albumen appears in the urine, the medical profession has been without any quantitative determination of this excretion.

It will be my object in the present paper to extend our knowledge of the natural history of the terrible scourge of tropical and sub-tropical America, by presenting the results of careful and accurate quantitative analyses of the urine in cases of different degrees of severity.

REACTION OF THE URINE IN YELLOW FEVER.

The reaction of the urine in yellow fever is acid. Even in the gravest cases, attended with suppression of the urinary excretion, jaundice, and *alkaline black vomit*, the urine, however small the quantity excreted, maintains an acid reaction.

SPECIFIC GRAVITY OF THE URINE IN YELLOW FEVER.

As a general rule, the specific gravity of the urine in yellow fever does not vary greatly from that of health, and ranges from 1009. to 1028. In those specimens which gave the highest specific gravity, the increase in density was clearly referable to the increase of *albumen;* for when this constituent was coagulated by heat and removed by filtration, the urine was of low specific gravity.

Thus in a case in which the specific gravity of the urine was 1026, after the removal of the albumen the specific gravity was reduced to 1012.

In some of the gravest cases the specific gravity of the urine was only 1010, and presented a yellow color, and was turbid from the presence of cells and casts of the excretory tubes of the kidney and granular fibroid matters and colorless corpuscles.

COLOR OF THE URINE IN YELLOW FEVER.

During the early stages of the disease the urine is normal in color, clearness and quantity; as the disease proceeds, the urine becomes of a deep yellow color, from the admixture of bile, and at this stage, after the full establishment of the febrile excitement, about the third, fourth or fifth day, becomes turbid from the presence of the excretory cells, tube casts, and yellow granular albuminoid or fibroid matters. The color may deepen to orange red as the disease progresses; or if the case terminates fatally from diminution and suppression of the urinary excretion, it maintains a yellow color, sometimes presenting an oily appearance and motion, and consists of but little else than albumen, bile, excretory cells and casts of the tubuli uriniferi, in a weak solution of the urinary constituents.

In some cases of suppression, although the *urea* is greatly diminished in the small amount of urine excreted, it is rarely if ever entirely absent.

If the case ends in convalescence, the urine is copious and the color progressively increases in depth, and may even appear black when viewed *en masse.*

ALBUMEN IN THE URINE OF YELLOW FEVER.

As far as my investigations extend, albumen is an invariable constituent of the urine in well marked cases of yellow fever, and may appear as early as the first day of the disease, but most generally it appears upon the second, third or fourth day.

The first fact recorded with reference to the occurrence of albumen in the urine of yellow fever is to be found in the following note, by Dr. John Davy, to the 3d edition of Dr. Daniel Blair's work on the Yellow Fever of British Guiana:

"In many instances, in the fatal cases of yellow fever in Barbadoes, the kidneys have exhibited a congested state, with ecchymosis of the investing membrane; and the urine, during life, has been found to be albuminous, coagulating when heated on the addition of nitric acid: this I have learned from staff surgeon, Dr. Collings, who has made many observations and experiments on the subject. In a letter with which he has favored me on the 28th of December, 1848, he says—'In every case of decided yellow fever I have found the urine highly albuminous, a condition which it assumes about the second or third day, and maintains throughout, increasing as the disease advances, and in cases of protracted convalescence, continuing long after all symptoms but debility have left the patient.' Most of the albuminous precipitates he mentions were of a brownish color; in some cases, just before the fatal termination, the presence of blood in the urine may be recognized by the microscope. In two instances he found the albumen of the blood replaced by a substance having the properties of casein."—(Note by Dr. John Davy to 3d edition of "Some Account of the last Yellow Fever epidemic of British Guiana, by Daniel Blair, M. D., London, 1852, pp. 98-99.)

Blair, in his subsequent report, records similar facts—(*British and Foreign Medico Chirurgical Review*, April, 1856: vol. xvi., appendix, pp. 9-13.)

Crocker Pennel says that albumen is always present in the urine of yellow fever, and sometimes in such quantity as to make the urine quite solid with heat. (*Medico Chirurgical Trans.;* vol. xxxvi., p. 245.)

Ballot found albumen invariably in 300 cases.

Dr. Robert D. Lyons gives, as the result of his examination of the urine during the Lisbon epidemic of 1857, with reference to the presence of albumen:

"Albumen was found in the urine in the following order of association—

(*a*) "As the only abnormal element, with or without other blood element.

(*b*) "In company of abundant deposits of lithates, with or without deposits of purpurin, or other coloring matters in excess.

(*c*) "In connection with biliary coloring matters, the presence of which was shown by the usual reagents.

(*d*) "In connection with pyrexial states, and

(*e*) "In connection with apyrexial states."

Various other observers, as Dr. B. F. Gibbs, surgeon U. S. N., and Dr. Peyre Porcher, of Charleston, have confirmed the accuracy of the original observations of Dr. Collings, as contained in the work of Daniel Blair.

BILE IN URINE OF YELLOW FEVER.

The constituents of bile are almost universally present in the urine, even in those cases which progress favorably and end in convalescence, as will be illustrated by the following case:

Urine collected from a stout young man in Charity Hospital, September 30th, 1871, on 5th day of disease; patient at this time prostrated, with sluggish capillary circulation, slow pulse, and yellow color of conjunctiva. The symptoms, however, were favorable; the patient expressed a desire for food, and there was no restlessness, nausea, delirium, or aberration of nervous action. The urine presented a reddish yellow color, and upon chemical examination, was found to be acid in its reaction.

Specific gravity, 1020; bile and albumen present in considerable quantities.

Upon standing, the urine let fall a moderately heavy deposit of urate of soda, in the form of granules and globules, with stellate points attached; also prismatic crystals of triple phosphates.

The urine contained but few casts or cells from the excretory tubes of the kidney.

Neither vibrios nor vegetable cells, nor animalculæ of any description, were observed in the urine when freshly drawn.

The kidneys acted freely in this case, and the urine presented a reddish yellow color, and the patient progressed regularly and afely to complete health.

In grave cases of yellow fever, on the other hand, the urine is much less abundant, and at the same time it is of a much lighter color.

In many cases which recover, the urine presents a deep reddish yellow and brown color.

WHEN THERE IS NO SUPPRESSION OF THE URINARY EXCRETION, THE UREA IS INCREASED ABOVE THE STANDARD OF HEALTH, DURING THE ACTIVE STAGES OF THE DISEASE, AND DURING THE PERIOD OF EXHAUSTION OR CALM.

The following cases illustrating the preceding important proposition, render it evident, that the febrile excitement of the disease now under consideration, like fever generally, from whatever cause arising, or however excited, is attended with an increase of those excrementitious products which result from the chemical changes of the blood, organs and tissues. And we will show by another series of cases, that even when there is complete absence of the urinary excretion on account of congestion and structural alteration of the kidneys, urea is still formed in large amount, and accumulates in the blood and in certain organs, as the liver and brain.

CASE OF YELLOW FEVER ILLUSTRATING THE COMPOSITION OF THE URINE.

Albert Bugen, age 37, native of Germany; light hair, light eyes; florid complexion; muscles well developed. Admitted into Charity Hospital, August 5th, 1871. At the time of admission patient had slight fever; hemorrhage from nose; conjunctiva congested; sclerotic coat of eyes, presents a yellow discoloration, with capillary congestion. The patient had suffered with fever for about 70 hours, before entering the hospital, and he appeared to be passing from the febrile stage to that of calm. Temperature of axilla this morning 98°; pulse 82. Temperature of axilla, in the evening, 100° F. Urine red colored, and loaded with albumen.

October 6th, 9 a. m.—Temperature 98°; pulse 82; 9 p. m., temperature 100°.

Examination of Urine.—Amount of urine collected from October 7th, 10 a. m. to October 8th, 10 a. m. (24 hours), 900 cubic centimetres (grains, 14341.2). Specific gravity 1020. Reaction of urine strongly acid, which it retained apparently undiminished for several days. Upon standing, the urine let fall a light yellow flocculent deposit. This deposit was found, under the microscope, to consist of casts of the tubuli uriniferi, excretory cells of the tubuli uriniferi, colorless corpuscles, oil globules, granular, fibroid or albuminoid matter, and urates of soda and ammonia. The casts of the tubuli uriniferi and the excretory cells contained granular fibroid matter and oil globules.

Immediately after its passage, the urine was examined with magnifying powers ranging from 500 to 1080 diameters; but no living animal or vegetable organisms were discovered.

Upon standing, vibrios were developed.

When seen in mass, the urine presented a yellowish red color; but in thin layers it presented a decided orange yellow color. The yellow color was due to the presence of the coloring matter of the bile.

Upon analysis the urine yielded the following results.

900 *cc* (14, 341. 2 *grains of urine, excreted during* 24 *hours, contained):*

Urea	grains 611.42
Uric acid	16.50
Phosphoric acid	36.12
Sulphuric acid	42.71
Chloride of sodium	15.81
Chlorine in chloride of sodium	9.63
Phosphorus in phosphoric acid	15.86
Sulphur in sulphuric acid	17.08
Dried albumen	85.56

As this patient was in a state of absolute rest, and almost absolute starvation, it is evident that the urea, uric acid, and phosphorus and sulphur compounds were greatly increased; being almost three or four fold more than in the urine of a healthy individual similarly situated.

October 8th a. m.—Temperature 100°; pulse 85; p. m., temperature 100°. October 9th, temperature 98°; pulse 85, morning: temperature 100, evening. Patient weak, but continues to improve. Is able to take light nourishment with relish. Complexion sallow and slightly jaundiced.

Amount of urine collected during 24 hours, from October 8th, a. m. to October 9th a. m., 750 cc (grains 11.139.8). Specific gravity 1022. Reaction of urine strongly acid; the acid reaction continued for several days upon standing. Urine, orange red color, with a yellow tinge, from the presence of bilary matter. The yellow color was very marked, when spread upon a white porcelain surface in thin layers.

Upon standing, the urine deposited a yellow layer of urinary casts and excretory cells, with oil globules and granular albuminoid matter and amorphous, urate of ammonia and soda. Under objectives ranging from 1-5 to 1–18 of an inch no vegetable or animal organisms were discovered in the fresh urine.

750 cc (grains 11.189.8*) of urine collected during* 24 *hours contained:*

Urea	grains 474.78
Uric acid	7.50
Phosphoric acid	30.88
Sulphuric acid	39.45
Chloride of sodium	21.29
Chlorine in chloride of sodium	12.20
Phosphorus in phosphoric acid	13.56
Sulphur in sulphuric acid	15.70
Dried albumen	56.25

October 10th, a. m.—Temperature axilla 98°; pulse 80. P. m.—Temperature 98-.

October 11th, a. m.—Temperature axilla 98°; pulse 80; p m. temperature 98°.

The patient continued to improve slowly but steadily. The urine gradually assumed the color of health; the albumen progressively decreased, and disappeared entirely on the 15th of October. The jaundiced appearance of the skin and eyes disappeared very slowly, and even after the apparent complete restoration to health, the skin and "whites" of the eyes presented a thoroughly jaundiced appearance.

Patient discharged on the 17th of October.

Commentary.—It is evident from the preceding analysis of the urine, in this case of yellow fever, that the *urea is increased at least four fold*, even in the stage of calm or depression: that is, the urea is at least four times more abundant than the amount of this constituent which would be excreted by a patient in health, similarly situated, lying perfectly quiet in bed, and taking little or no nourishment.

The same observation applies to the phosphoric and sulphuric acids. As the pulse and temperature had very nearly returned to the normal standard we must refer the increased elimination of the urea, and phosphoric and sulphuric acids, to the effect of the preceding febrile stage; that is, to the changes excited by the febrile poison, during the first stage of incubation and active febrile excitement.

The urine collected on the 5th day of the disease yielded 36.12 grains of phosphoric acid, which is equivalent to 15.86 grains of phosphorus; and 42.71 grains of sulphuric acid, which is equivalent to 17.08 grains of sulphur.

As the patient, at this time, was taking no medicine, and little or no nourishment, it is fair to refer the source of the phosphoric and sulphuric acids to the changes of those constituents into the composition of which sulphur and phosphorus enter.

We have in these facts, determined by the analysis of the urine, data for the calculation of the amount of the constituents of the living solids and fluids, undergoing such changes as resulted in the formation of sulphuric and phosphoric acids. In such calculations, and in considering the several phenomena which mark the progress of yellow fever, we should never lose sight of the great importance of albumen in the living body. "It is met with," says Lehmann, "in the largest quantity, in the blood, and in all those animal juices which contribute towards the nutrition of the organs; and a more careful examination of many of the animal tissues shows that albumen requires only some very slight modifications to become consolidated under different forms; as, for instance, when it contributes towards the formation of the solid contractile parts, under the form of syntonin (muscle fibrin), by which alone both the voluntary and involuntary movements of the animal body are effected. We find it both in a dissolved and undissolved form in the most delicate organic combinations; as, for instance, in the contents of the nerve tubes." The essential condition for the conversion of this principle into organized living tissue, is the continuous supply and chemical action of oxygen; and the changes thus excited under the most various circumstances, give origin to the numerous metamorphoses which the molecules of albumen undergo, before their final change into urea and similar substances. We may therefore calculate the amount of albumen undergoing change in the body, either from the amount of urea, or sulphuric acid, resulting from the decomposition or chemical change of its individual constituents.

Chemists now recognize three well defined albuminoid principles: viz., albumen, fibrin and casein, the others are little known, and are possibly only mixtures. In a chemical point of view fibrin presents all the characters of insoluble albumen; it only differs from it by its fibrous form and its property of decomposing oxygenated water. The different substances in question appear identical in their elementary composition, the slight differences given by analysis being most probably due to impurities, for these uncrystalizable substances cannot be completely purified: and we may reasonably suppose that in reality there exists a single albuminoid substance, acting in the same manner as a weak acid, and capable, like certain well known bodies, of existing both in a soluble and in a coagulable state; if, therefore, the name albumen be reserved for this principle, fibrin should be considered as insoluble albumen, more or less mixed with earthy phosphates; albumen, as an acid albuminate of sodium, and casein as the neutral albuminate of sodium. As is well known, many chemists call in question the identity of composition of the albuminoid substances, holding it to be impossible to prove the identity of a body whose molecule is so complex, especially as the compounds cannot be obtained in a pure state for analysis. Whilst admitting that this reasoning may be sound, on the other hand it cannot be shown by analysis, that these substances are not identical, and moreover, they give the same products of decomposition; we shall, therefore, for the purpose of the present calculation, adopt the preceding hypothesis.

Rüling found the amount of sulphur in eighty analyses of albumen to vary from 1.29 to 1.39 in the 100 parts, with a mean of 1.3 per cent. In adopting, for the present calculation, the actual determinations of sulphur in albumen, by these chemists, it is not necessary that we should adopt the hypothesis of Mulder, that albumen is a compound of (hypothetical) protein, with (hypothetical) sulphamide.

The view held by Mulder and some other chemists, that albumen and fibrin contain a small quantity of phosphorous, as an organic constituent, does not appear to be tenable, and this substance cannot form the basis of calculation for the metamorphosis of the albuminoid substances in the living body; on the other hand, the sulphuric acid, appearing in the urine during rest and fasting, may be correctly assumed as a measure of the changes of the albuminoid substances, as the proportion of sulphur appears to be very nearly the same in fibrin and albumen; and so intimate is its chemical union in these bodies, that it cannot be completely abstracted by the action of the alkalies.

If, therefore, every 100 grains of the dried albumen of the blood and tissues contain 1.3 grains of sulphur, it is evident that the 17.08 grains of sulphur excreted during 24 hours by this patient, represents 1308.3 grains of dried albumen; and as albumen forms 7 per cent. of the blood, 17.08 grains of sulphur excreted in the form of sulphuric acid during 24 hours, represented the metamorphosis of the albumen of 18,690 grains of blood.

If we assume that the phosphoric acid in the urine resulted from the metamorphosis of the nervous structures. and assume as the basis of the calculation the mean of certain chemical analyses, which give 1.6 per cent. of phosphorus in dried brain substances, then the 15.86 grains of phosphorus excreted, as phosphoric acid, during 24 hours, in this case of yellow fever, represented 991.2 grains of dried brain substance, or between 3964.8 grains and 4956 grains of fresh cerebral substance.

Such a calculation, however, would represent the changes of the cerebral and nervous substance in an exaggerated light, because a considerable amount of the phosphoric acid in the urine is derived from the phosphates of the alkalies, and alkaline earths, existing in the blood and organs, and especially in the osseous tissue.

The 85.5 grains of dried albumen excreted by the kidneys during 24 hours, represented the amount of this substance contained in 1220.94 grains of blood.

In many cases the albumen appears in much larger quantities, amounting to near one ounce of *dried albumen* during the 24 hours, which would represent the albumen of 14.28 ounces of blood, or nearly of one pound avoirdupois, or nearly 1.1-5 pounds troy of blood.

It is evident, therefore, that the loss of albumen by the urinary excretion in yellow fever must play an important part in the progress and result of the diseased actions, and that from this cause alone most important physical changes must be induced in the blood, while it is undergoing a loss of more than one seventeenth of the entire amount of albumen in 24 hours.

In this connection it is important to bear in mind, not only the great instability which characterizes and distinguishes the albuminoid from other organic principles, but also that certain substances in this group, simply by their presence, cause the hydration of other bodies by means of certain chemical changes.

Thus diastase, which is extracted from germinated barley, possesses this property in a high degree; but M. Pasteur having demonstrated that fermentation is owing to the development of living organisms, to which the name ferment should properly be applied, the name ferment is not suitable for certain forms of the albuminoid constituents which, by their presence, are capable of exciting certain chemical changes.

We are not justified, in the present state of our knowledge, in referring the chemical changes of the albuminoid substances which are so characteristic of yellow fever to the action of ferments, if this term is applied to living organisms; for, aside from the fact that living organisms characteristic of this fever have not been detected in the blood of the living patient, the phenomena may be explained by the supposition that the changes are induced by compounds which, like certain bodies, as the iodide of nitrogen, chloride of nitrogen, fulminate of mercury, nitro-glycerine and pyroxylin, are in a state of unstable equilibrium, but which are not themselves endowed with life.

The transformation of salacine into glucose and saliginin, and of amygdalin into glucose, bitter almond oil and hydrocyanic acid, by the emulsion of almonds (synaptase), the formation of volatile oil of mustard, in consequence of the action of the emulsion—like substance contained in it on the myronic acid, the rancid putrefaction of fixed oils in the presence of albuminous compounds, the rapid conversion of starch into glucose by diastase, as well as the remarkable changes of the blood and organs, characteristic of *acute atrophy* of the *liver* and *acute phosphorus poisoning*, are clearly not referable to the action of living organisms and germinal matter.

CASE ILLUSTRATING THE OCCURRENCE OF BLOODY URINE IN YELLOW FEVER.

N. O., medical student; resident student, Charity Hospital; native of Washington, St. Landry Parish, Louisiana; age 32. Large, well built, powerful man. States that he had an attack of yellow fever, August, 1870. The fever was prevalent at that time in Washington. During the spring and latter part of the winter of 1872, I treated Mr. O. for severe and obstinate intermittent fever, attended with enlarged spleen and jaundice, under the persistent use of quinine and iron, with careful attention to the bowels, Mr. O. was completely restored to health. Mr. O. entered the Charity Hospital, March, 1872. Several cases of yellow fever were treated during the months of October, September and November in the wards to which Mr. O. was attached, he also assisted in several post-mortem examinations of yellow fever subjects, in the dead-house of Charity Hospital. The last case of yellow fever treated in the wards to which Mr. O. was attached, entered about the 1st of November, 1872.

November 19th, 1872, a. m.—Mr. O. says that he felt unwell, with pain in the head and back, and with oppression of breathing during the preceding night. I found him in bed. Appears drowsy and dull; complains of headache, oppression of breathing, sore throat, cough, and soreness over the whole body. No appetite Says that he has taken a violent cold, and fears pneumonia.

November 20th—During the night had hot fever which lasted several hours and was not followed by sweating. 10 o'clock a. m.—Fever; moderately rapid and full pulse; skin hot, tongue furred, red at tip and edges; capillaries of face, and of conjuntiva of eyes, congested; no appetite; restless; complains of headache and pain in back and thighs; oppression of breathing, sore throat, cough; soreness over the whole body: says that he "has taken a violent cold." Percussion revealed dulness over right lung; and upon auscultation, the vesicular murmur was found to be decreased, whilst the vocal fremitus was increased.

℞—Quiniæ sulph., grs. xv; pulv. ipecac et opii, grs xviij; mix: divide into three powders. One powder every three hours. Sinapism over right mammary, inferior mammary, and axillary and inferior axillary regions.

P. M.—The fever, which had increased at 6 a. m. this morning, continued unabated until 7 p. m., when there was a marked decline in its intensity; fever, however, continued during the night, and the restlessness and dyspnœa increased.

November 21st, 10 a. m.—Patient expectorates tenaceous yellow mucus, apparently tinged with the coloring matter of bile. Expectoration difficult; bowels constipated. Right lung congested, with increased vocal fremitus, and tubular breathing and diminution of respiratory murmur. Capillaries of face, and of extremities and of eyes congested; capillary circulation sluggish. The countenance has a dusky, congested, unhealthy appearance.

℞—Pilulæ comp.: cathartic No.: iij; administer at once and follow with effervescing powder in three hours; and after action of cathartic, repeat mixture of quinine and Dovers powder (5 grains of quinine and 6 grains of Dovers powder) every three hours, until three doses have been taken.

8 o'clock, p. m —Fever has continued during the day; medicine acted promptly upon the bowels. Fever continued to increase until midnight, when the patient labored under great dyspnœa, fear and anxiety, and general congestion of capillary circulation. In my absence, the Resident House Surgeon of Charity Hospital was summoned, and administered 10 grains of quinine and 20 drops of laudanum (tincture of opium), which induced sleep and perspiration.

November 22d, 7 a. m.—Feels somewhat relieved; still under influence of opium; and appears dull and lethargic; at 9 a. m., dull and stupid, drops into a doze, and then wakes again. Disinclined to converse, anxious and restless. Capillaries of face congested, complexion of a dusky unhealthy hue, as in adynamic fevers. Capillaries of extremities and of the surface greatly congested, giving a mottled purplish hue. Liver found upon percussion to be considerably enlarged, and tender upon pressure. Expectoration of yellow sputa has ceased, and the congestion of the right lung has greatly diminished. Slight bright yellow tinge of surface. Abdomen tense and swollen. Intense pain in back and head. Pulse full and only moderately accelerated. Temperature elevated, about 105° F. Urine orange color, abundant, and contains bile and small quantities of albumen, with a few granular casts of urinary tubes, and excretory cells of kidney. After the first day, I watched this case with great interest, and upon this day announced that it was undoubtedly a case of yellow fever. The fact that the patient affirmed positively that he had suffered with yellow fever in Louisiana; the fact that he had been for some time a resident student of Charity Hospital, and had been upon many occasions in contact with yellow fever subjects in the wards and in the dead house, and the still more striking fact, that he had in the beginning of the attack suffered with sore throat, cough, oppression of breathing, congestion of the right lung, attended with the expectoration of tenaceous yellow sputa, led at first to a cautious examination and analysis of the symptoms, and a suspension of the final verdict as to the true nature of the disease: viz., yellow fever.

Examination of Urine.—Whole amount of urine not collected, but the kidneys are acting freely. There is no deficiency of urea, as each 10 cc. of that portion of the urine collected for examination, yielded 350 millegrammes of urea. The urine also contained albumen, 30 cc. of urine yielding upon analysis 0.4 grain of albumen. Reaction of urine strongly acid, which remained so, for more than one week. Red color, or rather, of deep orange red, presenting the appearance of deep yellow bile when seen in thin layers, and of a deep red color when seen in mass. Urine slightly turbid. Under the microscope (objectives varying from ¼ to 1.18 inch), it was found to contain a number of colored blood corpuscles, epithelial cells of the excretory tubes of the kidneys, casts of the tubuli unriniferi, filled with yellow granular albuminoid or fibroid matter. At the end of four days the reaction of the urine was still decidedly acid, and contained a number of vibrios and cells of sarcina ventriculi and of the torulæ cervisiæ.

November 22d, a. m.—Sluggish; attention not easily aroused; capillaries of face of conjunctiva and extremities greatly congested. Dusky, mottled hue of complexion. Abdomen swollen, and the patient complains that it feels "uncomfortably tight." Liver congested and enlarged; dullness, and tension or visible enlargement for 1½ inches below border of false ribs on right side. Pain in region of liver, spleen and kidneys—greatest in small of back, in region of kidneys. Kidneys acting freely; urine orange red; strong acid reaction; contains bile, albumen, blood corpuscles and casts of tubuli uriniferi. Intellect sluggish, not easily aroused; and after answering questions, relapses into a doze, as if under the action of some potent poison. Has fever; pulse frequent, but full.

Evening.—Pulse 108; respiration 24; temperature of axilla 102°. Urinates freely. Urine contains albumen, bile and casts of tubuli uriniferi, and blood corpuscles. The skin over the entire body has assumed a yellow, jaundiced hue. Tenderness over abdomen.

November 24th.—Rested well during the night. Patient says that during the night he felt as if something was giving way in his abdomen, and after this obtained relief. Some improvement in capillary circulation. 8 a. m.—Pulse 100; respiration 28; temperature of axilla 101.75. Head quite clear. Lies on right side. Tenderness over abdomen disappearing, but pain increasing in region of spleen and kidneys. Skin dry and yellow. Stomach irritable. Sclerotic coat of eyes, yellow and injected. Tongue red, furred, and fissured in middle. Right lung relieved of congestion. No special feeling of congestion or oppression in breathing. Skin moist, and at times bathed in perspiration. Kidneys acting freely. Capillary circulation sluggish. Urine contains bile, albumen, casts, excretory cells of kidney and yellow granular matter. Urine abundant. Amount of urine passed during last 24 hours—Nov. 23d, 10 a. m., Nov. 24th, 10 a. m.—56 oz.(—1750 cc.); specific gravity 1016. Reaction strongly acid. Upon standing, the urine let fall a flocculent deposit, which consisted of numerous casts of the tubuli uriniferi and excretory cells, and granular albuminoid matter, and urate of soda and ammonia, colored yellow by the coloring matter of the bile. The tubuli uriniferi were filled with yellow granular matter. Urine also contained colored blood corpuscles and oil globules.

Rapid desquamation of the excretory cells of the congested kidneys is evidently proceeding. Upon standing, the urine retained its acid reaction, and numerous vibrios and torulæ cervisiæ, were developed. Urine presents a red color when seen in mass, and a yellow color, like bile, in thin layers.

Bile and albumen present; also *grape sugar* (diabetic sugar glucose) in small quantities. When dropped upon bibulous paper, a golden ring is formed by the coloring matter of the bile. After acidulation with a small quantity of acetic acid, boiling and filtration, so as to separate the albumen and casts, and excretory cells, the clear hot filtrate became turbid upon cooling, and let fall a heavy crystalline deposit of highly colored crystals of uric acid. Well formed *torulæ cervisiæ* also formed in the urine after boiling and filtration. No effort, however, was made rigidly to exclude the atmosphere after boiling the urine, and after the separation of the albumen by filtration, and this experiment is of importance as seeming to illustrate or indicate the fact, that the torulæ originally observed in the urine were developed from germs introduced from without, and not from those which might have been supposed to have been separated from the blood by the kidneys.

The development of these plants appear to have been favored by the presence of the grape sugar. The presence of the grape sugar appears to have been due to the same causes which induced the bile in the urine, and also, perhaps, to the sluggish capillary circulation.

As the kidneys were apparently doing their full duty, I prescribed no drugs—only water charged with carbonic acid, and a small quantity of good French brandy diluted with the carbonic acid water, at intervals of three or four hours.

1750 *cubic centimetres of urine excreted during 24 hours—November 23d–24th—contained:*

Urea	grains, 693 00
Uric acid	19.50
Phosphoric acid	25.31
Sulphuric acid	49.70
Chloride of sodium	7.84
Albumen	12.50

10 o'clock, p. m.—Pulse 102; respiration 30; temperature of axilla 102° F. Urinary excretion continues abundant. Sinapisms have been freely applied over region of spleen and kidney. Complains of great pain over right kidney. (Apply mustard foot bath and continue carbonic acid water.)

November 25th, morning.—Rested pretty well during the night; complains of thirst; drinks freely of carbonic acid water; urinates freely. Free from pain and muscular soreness, with the exception of the pain in the region of the kidneys, which is now greatly mitigated. Temperature of axilla 98° 5′ F.; pulse 82; respiration 32. Complains of some pain in head. Amount of urine passed during 24 hours up to November 25th, 10 a. m., 1575 cc; specific gravity 1014; red color in mass, golden yellow in thin layers; turbid when passed, from presence of blood and casts, and cells of tubuli uriniferi; reaction strongly acid. The flocculent deposit, under the microscope, consists of casts of the tubuli uriniferi, and the excretory cells of the kidney, cells from mucous membrane of the bladder and pelvis of the kidney, blood corpuscles, and yellow granular matter and amorphous urates. The colored blood corpuscles have greatly increased in numbers, and present a regular form, with bi-convex outline. All the morphological elements (cells and casts) were colored by bile. When a piece of white bibulous paper was dipped in the urine, it was colored of a bright golden hue. Upon standing, the reaction of the urine continued acid, and numerous vibrios and cells of the torulæ, were developed. Urine contained a small quantity of grape sugar. When the urine was slightly acidulated with acetic acid, boiled, and the coagulated albumen removed by filtration, upon cooling, the urine thus treated let fall a heavy deposit of lozenge-shaped crystals of uric acid.

1575 *cc of urine collected during 24 hours contained:*

Urea	grains, 593.50
Uric acid	10.50
Phosphoric acid	48.51
Sulphuric acid	41.74
Chloride of sodium	6.93
Dried Albumen	3.00

6 o'clock p. m.—Pulse 106; respiration 30; temperature of axilla 102° F. Skin deeply jaundiced. Patient resting quiet. No medicine prescribed: light nourishment at regular intervals, with carbonic acid water.

November 26th, 6 a. m.—"Rested badly during the night;" mouth very dry; much thirst; restless; oppressed; complains of feeling a "painful burning spot upon the top of the head." Lower extremities feel cool. Mustard frictions promoted capillary circulation and warmth, with some perspiration. There was no abatement of the pain in the head, however, after the establishment of the perspiration. Great pain and oppression in the head. Marked congestion of capillaries. Surface of face and extremities mottled and of a deep yellow color. Nausea, restlessness and sleeplessness during entire night, until 2. a. m., when ice was applied to head. The ice appeared to relieve the pain in the head, and the patient fell into a calm sleep, from which he awoke in the morning refreshed.

8.40 o'clock, a. m.—Temperature of axilla 101° F.; pulse 80; respiration 29. Amount of urine passed during the last 24 hours 1700 cc. Specific gravity 1016. Strong acid reaction. Urine turbid when passed, from presence of tube casts, excretory cells of tubuli uriniferi, mucus cells of bladder, ureter and pelvis of kidney, colored blood corpuscles, yellow granular fibroid matter and amorphous urate of ammonia and soda. Color of urine deep reddish brown. Under the microscope tube casts and excretory cells of kidneys abundant, also colored blood corpuscles, and cells from mucus membrane of bladder, ureter and pelvis of kidney. The casts were filled with yellow granular matter. All the cells as well as the casts and amorphous granular matter and water were colored of a deep yellow by the coloring matter of the bile.

Upon standing, numerous vibrios and cells of the torulæ were developed. I examined microscopically at the same time samples of urine passed by a distinguished member of the medical profession, who was laboring under diabetes melitus, and could perceive no difference in the mode of development and appearance of the fibres and cells and thallus of the torulæ developed in the diabetic urine and that of this case of yellow fever, which contained grape sugar as well as albumen and blood corpuscles.

1700 *cc of urine excreted during* 24 *hours, November* 25*th* 10 *a. m.–November* 26*th*, 10 *a. m., contained*

Urea	grains 827.76
Uric acid	21.42
Phosphoric acid	52.36
Sulphuric acid	45.61
Chloride of Sodium	6.54
Dried albumen	1.69

It is evident from the small amount of albumen, only 1.69 grains in 1700 cc of urine, that the amount of blood is comparatively small; although the colored blood corpuscles are seen in numbers in every drop of the fluid submitted to microscopic examination. After the slight acidulation of the urine with acetic acid, the application of heat, and the removal of the coagulated albumen by filtration, the fluid, upon cooling, let fall a heavy deposit of highly colored crystals of uric acid.

November 26th p. m.—Patient has been quite comfortable during the day, and appears to be improving. 10 o'clock p. m.—Pulse 68, slow and intermittent. Pulse intermits every three or four beats. Respiration 26. Temperature of axilla 100° 25′ F. Had a hard stool at 11 o'clock p. m.

November 27th—Slept well during the night. 7.30 o'clock a. m.—temperature of axilla 101° F.; pulse 80; respiration 20. Patient complains of some pain in muscles of legs; otherwise in excellent condition. No medicine. Light diet. Amount of urine passed during last 24 hours, November 26th, 10 a. m.–November 27th, 10 a. m.—1685 cc; specific gravity 1016; deep red color; clouded when passed, and heavy flocculent yellow deposits upon standing. Deposit consists of colored blood corpuscles, yellow granular matter, excretory cells and casts of the tubuli uriferi, and malpighian corpuscles and broken capillaries and cells from mucus membrane of bladder, ureters and pelvis of kidney, and granular amorphous matter and urates deeply colored by coloring matter of bile. Reaction of urine acid. Small quantities of grape sugar present in urine; and upon standing, cells of the torulæ were developed.

1685 *cc of urine, excreted during* 24 *hours November* 26*th–November* 27*th, contained*

Urea	grains 778.47
Uric acid	16 85
Phosphoric Acid	56.01
Sulphuric Acid	41.68
Chloride of sodium	6.46
Dried albumen	2.52

During health it is probable that the blood chiefly supplies the elements of chemical change, but it is evident from the large amount of phosphoric acid and sulphuric acid excreted by the patient in a state of absolute rest and almost absolute starvation, that the nervous and muscular machinery themselves are involved in the increased chemical changes. After acidulating the urine with acetic acid, and after the removal of the albumen by filtration, the liquid, upon cooling, let fall a heavy deposit of high colored lozenze-shaped crystals of uric acid.

8 o'clock, p. m.—Pulse 96; respiration 22; temperature of axilla 100° 5′ F. Pulse still intermittent.

November 28th.—Rested well during the night; patient says that he feels well this morning- 8 o'clock a. m.—Tongue moist, soft and clean. Temperature of axilla 99° 2′ F.; pulse 86; respiration 23. Capillary congestion greatly diminished; entire surface of body of a deep golden color. Has some appetite, and feels more cheerful; up to present time his spirits have been greatly depressed.

Amount of urine passed during 24 hours—November 27th, November 28th—1350 cc; specific gravity 1016; reaction acid; slightly turbid when passed, from presence of urinary casts, cells and granular matter. Blood corpuscles and tube casts diminishing in numbers. Color of urine brownish red.

1350 *cc of urine passed during* 24 *hours—November* 27*th, November* 28*th—contained:*

Urea	grains, 680.07
Uric acid	16.20
Phosphoric acid	46.81
Sulphuric acid	39.82
Chloride of sodium	6.23
Dried Albumen	1.125

After acidulation with acetic acid, boiling and removal of albumen by filtration, the urine, upon cooling, let fall heavy deposits of high colored lozenge-shaped crystals of uric acid.

The patient was comfortable and cheerful during the day. Capillary circulation restored. All appearances of congestion and mottling of surface have disappeared, and the deep golden color of the skin is beginning to fade gradually. 9 p. m.—Pulse 76; respiration 24; temperature of axilla 99° F.

November 29th, 8 o'clock, a. m.—Pulse 72; respiration 24; temperature of axilla 99° 2′ F. Patient continues to improve; jaundice disappearing; capillary circulation good; color of surface assuming a normal appearance, and the yellow hue is changing to a greenish cast. Appetite improving. Tongue clean. Says that he feels well, with the exception of a slight heaviness of the head. Bowels have been moved regularly during the past four days. Amount of urine passed during the last 24 hours—November 28th, 29th—1340 cc; specific gravity 1016; light red color, but much less deeply colored than during the active stages of the disease. Colored blood corpuscles, urinary casts and excretory cells still present, but in small numbers.

1340 *cc of urine, excreted during* 24 *hours—November* 28*th–*29*th—contained:*

Urea	grains, 660.35
Uric acid	10.92
Phosphoric acid	41.27
Sulphuric acid	——
Chloride of sodium	4.12
Dried albumen	0.67

P. M.—Continues to improve; complains of slight pain in head. Pulse 80; respiration 23; temperature of axilla 99° 4′. Bowels moved once.

November 30th, a. m.—Pulse 76; respiration 22; temperatnre of axilla 98° F. Continues to improve; good appetite. P. M.—Pulse 68; respiration 22; temperature of axilla 99° 4′. Continues to improve. Urine much lighter in color; abundant; and the albumen, blood corpuscles and casts, have disappeared; specific gravity 1016.

The convalesence of this patient was now rapid; he continued to gain strength, and was in a short time able to resume his post in the Charity Hospital.

On the 17th of December, he suffered with a paroxysm of malarial fever (chill followed by high fever). I ordered 10 grains of calo. mel and 5 grains of quinine, to be followed in six hours by saline cathartic; and after the bowels were unloaded, 5 grains of quinine every two hours, until twenty grains were taken.

Under this treatment relief was speedy, and up to the present time, August 24th, 1873, Mr. O. has enjoyed good health, and is stouter than ever before, weighing 200 pounds.

It will be observed that in the preceding case of yellow fever there was a marked increase in the urea, uric acid, phosphoric and sulphuric acid excretion; whilst there was a marked diminution of chloride of sodium.

There was no hæmorrhage from the stomach, but blood was discharged by the kidneys.

It is also worthy of note that grape sugar (diabetic sugar) appeared in the urine, during the active stages of the disease. I have never failed to detect both animal starch and glucose in the yellow fever liver, whilst grape sugar I have found to be absent from the liver of malarial paroxysmal paludal fevers.

In the following case of yellow fever large quantities of albumen were excreted in the urine, and which also contained in addition to bile, leucine, tyrosin and hæmatin.

CASE OF YELLOW FEVER COMPLICATED WITH CIRRHOSIS OF LIVER: INTENSE JAUNDICE: URINE LOADED WITH ALBUMEN, AND CONTAINED ALSO BILE, LEUCINE, TYROSINE AND HÆMATIN; PRECEDING MALARIAL FEVER AND INTERCURRENT PNEUMONIA.

Charles Bell, age 25, native of St. Louis, Missouri, entered Charity Hospital, ward 13, bed 189, October 15th, 1871. Patient states that he had been working on the Jackson Railroad for some time and came to New Orleans about two weeks ago (that is about the 1st of October), and about the 13th was taken with some fever, and being destitute was brought to the Charity Hospital for treatment.

On the morning of his admission, 3d day of disease, was found laboring under a severe fever; frontal headache and anorexia; conjuntiva and skin tinged of a red color; capillary circulation sluggish, giving a mottled, dusky, congested appearance to the surface; urine of a deep red color when seen in mass, and of a bright golden color when seen in thin layers, or spread upon a piece of paper.

The urine was loaded both with bile and albumen, and resembled to a great extent the urine of yellow fever, only it was more deeply colored and of a redder hue than is usual in grave cases. Nitric acid produced a heavy precipitate colored of a deep green color from the presence of biliary matter, and more especially of the coloring matter of the bile. The patient appeared to be much prostrated from the fever, anorexia and profuse perspiration. Skin hot and moist.

On the morning of admission, I ordered 10 grains of quinine to be taken every four hours until 30 grains were administered. On the following morning the patient complained of pain in the right side, fever, and oppression of breathing; bowels constipated. Viewing this case as one intimately connected with, if not dependent upon the action of malaria, especially too, as the patient had been laboring in a low swampy region, along the Jackson and New Orleans Railroad, in the most sickly period of the year, 8 grains of calomel combined with 10 grains of quinine were administered at the morning visit. Light but nutritious diet; beef tea with small quantities of milk punch were ordered at regular intervals.

October 16th; morning.—The calomel has acted freely, but the patient is still suffering with high fever; is very restless. Marked capillary congestion in the extremities and upon the forehead, and dependent portions of the trunk. Surface presents a reddish and purplish mottled color. Lower lobe of right lung dull upon percussion; complains of pain in this region.

Urine copious, high colored, and loaded with albumen and bile.

Five grains of quinine and five drops of tincture of opium (laudanum) were ordered every four hours, and this combination of the sulphate of quinine with the officinal tincture of opium was administered three times a day, at intervals of four hours, until the 20th, without producing any perceptible change in the progress of the disease. It was evident that this was not a case of ordinary bilious remittent fever, and that quinine had no power to arrest the progress of the disease.

October 20th.—Fever still continues, with anorexia, restlessness, and great capillary congestion. When the fingers are pressed upon the dusky, purplish yellow surface of the forehead and extremities, white or yellowish white marks remain, into which the blood sluggishly returns.

Color of urine when seen in mass, of a deep red color; when spread upon paper or a porcelain plate in thin layers, of a deep golden yellow. The urine contained a flocculent deposit, which, upon microscopical examination, was found to consist of golden yellow excretory cells of the tubuli uriniferi, casts of the tubuli uriniferi filled with yellow granular matter, and numerous bright red annular and acicular crystals, and globular masses of leucine tyrosine and heamatin; blood corpuscles, mucus corpuscles, and exudation corpuscles. The red acicular conglomerated crystals were not dissolved by acetic acid. The excretory cells of the kidney contained numerous yellow granules. There were no oil globules, as in the urine of many severe cases of yellow fever. The casts of the tubuli uriniferi were more delicate, and less distended, and contained less granular matter and oil globules than similar deposits in grave cases of yellow fever.

Reaction of urine strongly acid, and remained so at the end of 60 hours; specific gravity of urine 1026.

Heavy deposits of golden colored albumen upon boiling, and the albumen was coagulated in such large amount as to transform the whole quantity of urine thus treated into a thick gelatinous mass, resembling "boiled custard."

After the coagulation and removal of the albumen, the specific gravity of the urine passing through the filter was 1012; thus by the removal of the albumen the specific gravity was reduced from 1026 to 1012.

650 *cc.* (*grains* 11,901.60) *of urine collected during* 24 *hours contained:*

Urea	grains 401.44
Uric acid	9.75
Phosphoric acid	15.93
Sulphuric acid	17.49
Chloride of sodium	3.84
Chlorine in chlorides	1.20
Dried albumen	452.40

A portion of urine was lost during its collection, on account of the extreme illness and restlessness of the patient; it is evident, however, that there is a marked increase of urea and uric acid above the standard of health, during rest and starvation. The loss of albumen by the urine is also very great, being one ounce in the portion of urine collected.

There is also a marked diminution of the chlorides; and such diminution is characteristic of the urine in yellow fever, as it is also of the urine of pneumonia, small pox, and some cases of typhoid fever.

Patient complains of severe pain in right side (dulness upon percussion over region of lower lobe of right lung); great difficulty of breathing; slight, painful cough, but no expectoration. Surface bathed in perspiration; this symptom does not possess the same significance that it does in malarial fever. Skin of a deep jaundiced hue; capillary circulation very much embarrassed. Tongue red at tip and edges, and furred in the centre. The nurse reports that the patient threw up a small quantity of black material, like black vomit, during the night; but as the matter ejected was not preserved, it was impossible to determine its chemical and microscopical character. In order to influence the capillary circulation, and, if possible, to arrest black vomit, upon the supposition that it might in a measure depend upon a want of tonicity in the capillaries, in some measure at least, I ordered 40 drops of the tincture of ergot every three hours.

October 21st, 10 a. m.—Patient very restless and feeble; great difficulty and oppression of breathing; great capillary congestion of surface and dependent portions of body. Eyes watery. Conjunctiva and skin deeply jaundiced. At times slight wandering of intellect. The patient complains of pain in right side. Tongue red at tip and edges, and coated in the centre. Anxious countenance. Patient complains of pain in head and side. Some appetite for food. Pulse 130; respiration 18; temperature of axilla 102° 5′. The nurse states that the patient again threw up black vomit during the night; matter again not saved. ℞—Pulv. ergot, grs. xv; divide into three powders: one powder every four hours. ℞—Olei terebinth, fʒiij; syrupi simp., f℥vj; mix: tablespoonful every three or four hours during the day.

Amount of urine collected during the past 24 hours, 500 cc.; a portion appeared to have been lost. Urine of red color, when seen in mass; in thin layers, of a golden color; when shaken in a bottle, it presents an oily appearance; when dopped upon white bibulous paper, it gave a golden yellow stain like bile. The urine contained a flocculent deposit; the deposit was found, upon microscopical examination, to consist chiefly of casts of the tubuli uriniferi, excretory cells of the kidney, granular fibroid and albuminoid matter, altered colored blood corpuscles, and accicular, globular, and stellate conglomerate crystals of leucine, tyrosine and heamatin.

Reaction of urine strongly acid, even at the end of 60 hours. Urine heavily loaded with bile and albumen. Specific gravity of urine 1026; specific gravity after removal of albumen by heat and filtration, 1012.

When heated, the urine formed a yellow gelatinous mass, of the consistence and color of "*boiled custard.*"

The following is the analysis of that portion of the urine which was collected:

500 *cc* (8013.06 *grains*) *of urine, collected during* 24 *hours, contained:*

Urea	grains 308.80
Uric acid	7.50
Phosphoric acid	21.61
Equivalent of phosphorus in phosphoric acid	9.50
Sulphuric acid	13.72
Equivalent of sulphur in sulphuric acid	5.48
Chloride of sodium	3.03
Chlorine in chloride of sodium	1.84
Dried albumen	348.00

The patient became more restless during the night. In the evening, 8 p. m., pulse 140; respiration 52; temperature of axilla 103° 5' F. Later in the night, although the patient was unable to articulate distinctly, he appeared to suffer excruciating pain in the right side and in the head.

The great difficulty of breathing, and livid color of the blood in the capillaries, during the past four or five days, appeared to be due to the congestion of the lungs.

11 p. m.—Pulse 130; respiration 52; temperature of axilla 103° 5.

Died at 5 o'clock, a. m., October 22d.

Amount of urine collected during the last 24 hours of life, 300 cc.; specific gravity 1028; red color, when seen *en masse;* golden yellow in thin layers. Heavy flocculent deposit, consisting of casts of the tubuli uriniferi, excretory cells of the kidney, altered colored blood corpuscles, and crystals of leucine, tyrosine and heamatin.

Reaction of urine decidedly acid, and continued so for two days. Upon standing, the urine emitted a foul, stinking odor.

Urine loaded with albumen and bile; specific gravity of urine after coagulation and removal of the albumen 1014; it is evident that the albumen had increased the density to 1028.

The microscopical and chemical characters of the urine were similar in all respects to those observed in the preceding samples.

300 *cc of urine (grains* 4731.6) *collected during the last* 24 *hours of life contained:*

Urea	grains 198.17
Uric acid	4.50
Phosphoric acid	5.55
Equivalent of phosphorus in phosphoric acid	2.44
Sulphuric acid	14.92
Equivalent of sulphur in sulphuric acid	5.96
Chloride of sodium	3.68
Chlorine	1.91
Dried albumen	207.14

We have in this case, a progressive diminution of the urinary excretion whilst the temperature remained at an elevated point; urea must, therefore, to a certain extent, have accumulated in the blood; but this accumulation was much less than in many grave cases of yellow fever attended with great nervous agitation, restlessness, convulsions, vomiting of alkaline black vomit and coma.

The elevation of temperature as well as the rapid pulse and rapid labored respiration were evidently due to pleuro-pneumonia engrafted upon yellow fever.

We observe a great relative increase of the sulphuric acid, and a marked decrease of the chlorides, and an abundant transudation of albumen and bile, together with hæmatin, colored blood corpuscles, leucine and tyrosine.

AUTOPSY FIVE HOURS AFTER DEATH.

Exterior.—Dependent portions of head, neck, trunk, and extremities of a deep purplish and yellowish purple mottled color. Superior portions of the face, trunk and extremities, where the capillary congestion was less, of a bright yellow, jaundiced color.

Thorax.—The sinapism had produced a decided blister, upon the right side, the cuticle being denuded, and the raw surface presented a dark purplish hue.

Pleura of right side, firmly bound, in several places, by adhesions of coagulable lymph, which appeared to have been thrown out for some time, and was undergoing transformation into organized fibrous tissue.

Superior portion and surface of pericardium of heart also covered with golden colored coagulable lymph.

Muscular structures of heart pale, and more flabby than usual, but of a deeper color than in cases of yellow fever which ran their course without any inflammatory complication.

Cavities of heart filled with loosely coagulated blood.

Lungs.—Greatly congested; lower portions of right lung congested with blood, as if there had been rupture of the vessels, and effusion of blood among the tissues. The congested or hepatized portion of lung sank when immersed in water.

The cut surface of the muscles of the thorax and abdomen changed to a bright hue when exposed to the atmosphere.

Abdomen.—Mucus membrane of stomach rose colored and punctated, but less congested than is usual in yellow fever. The stomach contained no black vomit.

Liver.—Of a yellow mottled appearance, the lobuli beingdistinct, with congested centres, of a purplish yellow color, and peripheral portions of a deep yellow. The lobuli started out when cut, and the organ was evidently cirrhosed previous to the supervention of the fever, and was firmer than is usual in uncomplicated yellow fever.

The liver contained numerous oil globules, but they were neither so large nor so numerous as in yellow fever livers, which were in a healthy state previous to the supervention of the disease. The liver cells also were paler, and contained less oil and granular matter than in uncomplicated yellow fever.

Masses of altered hematin were observed chiefly in the periphery of the lobules of the liver. The presence of these black pigment granules, and masses of altered hæmatin, indicated that this patient had suffered with malarial fever before, and perhaps at the time of the recent fatal illness, and the correctness of the diagnosis was thus established.

Spleen.—Somewhat enlarged and softened, but not, however, to so marked an extent as in uncomplicated malarial fever.

Kidneys.—Of a yellow granular appearance. The yellow granulation was most marked in the cortical portions. Color of kidneys orange yellow. Under the knife the kidneys appeared firmer than usual, and as if cirrhosed. Capillaries of kidneys congested; the congestion was greatest in the capillaries of the malpighian corpuscles.

When carefully prepared sections of the kidneys were viewed under the microscope, the capillaries of the malpighian corpuscles were filled with colored corpuscles, whilst the tubuli uriniferi were encumbered, in some cases impacted, with yellow granular matter, exfoliated excretory cells, and oil globules. Acetic acid rendered more evident the granular albuminoid or fibroid matter in the urinary tubes, and also revealed degeneration of many of the excretory cells.

Gall Bladder.—Only partially filled with bile, only 200 grains being obtained. Specific gravity of bile 1041; bile thick and turbid. Numerous cells from the mucus membrane of the gall bladder floating in the bile. When seen en masse, the bile presented a deep greenish yellow color; in thin layers, a golden yellow color.

COMMENTARY.—The preceding case of yellow fever appears to have been preceded by cirrhosis of the liver and kidneys and malarial fever, and to have been complicated during its progress by the supervention of pneumonia, pleuritis and pericarditis.

The fatal issue of the case appeared to have been determined chiefly by the inflammatory complications, and to the same causes must be referred the rapid pulse, rapid labored respiration and elevated temperature. The preceding cirrhosis of the liver and structural alterations of the kidneys were probably the result of the prolonged action of the malaria. I have carefully observed a number of cases of cirrhosis of the liver caused by the prolonged action of malaria, and am convinced that this condition of the liver, resulting from malaria, may be clearly distinguished from that induced by alcoholic stimulants, by the presence of numerous black pigment granules scattered through the lobuli, and by the absence of any marked increase of oil globules in and around the hepatic cells, capillaries and ducts.

I have never observed black pigment granules occurring in cirrhosis induced by spirit drinking, and uncomplicated by the action of malaria.

How far the increase of albumen in the urine may have been due to the preceding alterations of the kidneys I am unprepared to say; but that this condition was not without some effect upon the urinary excretion must be admitted.

During the three last days of the life of this patient 1007.54 grains of dried albumen escaped in the urine; and the actual quantity was probably much greater. The albumen was separated with the greatest care, and was carefully washed with diluted nitric acid and with alcohol and ether before desiccation.

In these analyses, as well as in all the others recorded in these pages, the sulphuric acid of the urine was precitipated with the nitrate or chloride of barium, after the complete removal of the albumen by heat and coagulation and filtration; and the nitrate of silver was in like manner employed for the precipitation and determination of the chlorine. The balance, and not the method by tritration, was employed in these determinations, and the results were as accurate as it was possible to make them by the careful performance of all the various processes.

1007.54 grains of albumen, excreted during the last days of life, represented the albumen of 14,397.64 grains of blood.

It will be a question for future research, as to the occurrence of *globulin* in the urine of yellow fever, associated with the albumen.

In some recent observations, E. Hefsen affirms, with some degree of confidence, that he has found *globulin* in thirty-one cases of albuminuria (Virchow's Archives, vol. lx., p 437); it must be admitted, however, that the separation and determination of the globulin, with any approach to accuracy, is attended with difficulties and even uncertainties, especially when the globulin exists only in small quantities.

We will consider, in the next place, those cases of yellow fever in which the urine is either greatly diminished in amount or wholly suppressed.

DIMINUTION AND SUPPRESSION OF URINE IN YELLOW FEVER.

Case of Yellow Fever: Suppression of Urine—Jaundice—Copious Alkaline Black Vomit—Fatal Termination—Post-mortem Examination—Lesions Characteristic of Yellow Fever—Urea and Bile Detected in the Brain, Heart, Liver and Spleen—Little or no Urea Detected in the kidneys.

Newton Simpson; age 21; native of Western Virginia; admitted into Charity Hospital October 12th, 1871.

Patient gives an imperfect account of his sickness; says that he has been living in St. Louis for some time; came down to New Orleans ten days ago; was taken sick a few days after his arrival.

On questioning the patient closely, it appears that he was taken sick about six days ago with fever, thirst, anorexia and pain in the head, back and limbs. Patient is unable to state how long these symptoms lasted, but not getting better, he came to the Charity Hospital. On admission he complained of pain in the back, head, and over the region of the stomach, thirst and fever. At the present time, eyes, tongue, skin and mucus membrane of mouth, congested; tenderness upon pressure over abdomen. Urine of a golden color, loaded with albumen, and greatly diminished in amount. Urine turbid from the presence of urinary cells and casts.

October 13th; evening.—Patient says that he feels better, but he is still in an unnatural state, like one intoxicated. Temperature of axilla 100° F.; pulse 80; respiration 16. Ordered the urine saved at 1 o'clock p. m. The nurse and attendants were strictly charged to save every particle of urine passed by the patient.

October 14th, morning.—Vomited some bread which he had eaten against orders; complains of nausea. Temperature of axilla 101° F.; pulse 72; respiration 16 per minute. Mustard plaster ordered over region of stomach. Diet, beef tea; fragments of ice in mouth to allay thirst.

Amount of urine collected during 24 hours—October 13th, 11 a. m., to October 14th, 11 a. m.—110 cc. (grains 2833.6); specific gravity 1012. Urine of a golden yellow color, slightly turbid. The urine contained a light flocculent deposit, which under the microscope (powers varying from 1-5 to 1-20 of an inch) was resolved into oil globules, casts of the tubuli uriniferi, and granular, fibroid and albuminoid matter. The casts of the tubuli uriniferi were composed chiefly of yellow granular fibroid matter. When first passed, the urine contained no living microscopical plants or animals perceptible under the highest powers, but after standing for some time, vibrios made their appearance. Vibrios form in this moist, warm climate, in very short periods of time, in all organic solutions, especially when albumen is present. When treated with acetic acid, lozenge shaped crystals of uric acid made their appearance. The yellow granular matter of the urine in this case appeared clearly to have been derived from the kidneys, as it was insoluble in acetic acid and in the mineral acids, and often presented the form of the tubuli uriniferi, as if the agglomerations had been formed in the tubuli uriniferi, and were subsequently expelled. The tubuli uriniferi, and excretory cells of the kidney, were loaded with yellow granular matter and oil globules, and were numerous.

A portion of the yellow granular matter forming the deposit in the urine consisted of urate of ammonia, for acetic and hydrochloric acids caused the separation of well defined lozenge shaped crystals of uric acid.

180 cc. (grains 2833.6) of urine was the whole amount passed during this period, and the bladder at this time contained no urine, as was conclusively shown by the failure of the catheter to draw off any urine.

Specific gravity of urine 1011; urine of a light yellow color. Reaction slightly acid. The acid reaction of the urine continued even to the end of the third day, although the temperature of the surrounding atmosphere was high. At the end of this time it gave only a faint urinous odor.

As far as my observation extends, the urine of yellow fever, when fresh is free from any disagreeable odor, and in some instances, when freshly drawn, emits a faint sweetish aromatic odor.

180 *cc.* (*grains* 2833.6) *of urine contained:*

Urea	grains, 77.81
Uric acid	14.40
Phosphoric acid	11.106
Equivalent of phosphorus in phosphoric acid	4.87
Sulphuric acid	6.175
Equivalent of sulphur in sulphuric acid	2.46
Chloride of sodium	3.649
Actual amount of chlorine in urine	2.224
Dried albumen	5.82
Fixed saline constituents	10.80

We observe from the preceding analysis, that the urine presented very nearly the composition of a similar amount of this excretion in health, with the exception of a great increase of uric acid (14.4 grains), and a relative increase of phosphoric acid, and the presence of albumen, granular albuminoid matter, and urinary casts and excretory cells.

October 14th.—Patient restless and in a state of delirious intoxication; has passed no urine since early in the morning. Tongue dry, very red at tip and edges, and coated in the middle. Mucus membrane of gums, mouth and eyes, congested; countenance dull and lethargic. The patient, however, when roused, says he is well and feels hungry and desires something to eat.

The patient, however, is in an unnatural state, resembling that induced by alcohol and certain narcotic poisons, in some individuals. The muscles of the face twitch nervously; the patient is very restless and appears to be wholly oblivious to his distressing condition.

The skin of the face presents a dusky, jaundiced hue; there is great capillary congestion, especially of the extremities. When the dusky, purplish, red surface is pressed with the finger a white spot is left, into which the blood slowly returns.

Patient has passed no urine during the day, and the use of the catheter shows the urine to be completely absent from the bladder. Temperature of axilla 100° 8′; pulse 80; respiration 18.

October 15th, 9 a. m.—Complains of pain in region of stomach; has been vomiting black vomit during the night and morning. Patient very restless, with a mottled, congested appearance of the surface. Tongue dry and red; pulse full, regular, and apparently good, 80 per minute; respiration 20; temperature of axilla 101[illegible] F.; patient dull, lethargic, but not actively delirious.

The black vomit was carefully collected, and subjected to an immediate examination.

This specimen corresponded in its general character to the typical black vomit of many writers. It consisted of a thin fluid, holding in suspension dark flocculi and coffee-like, or dark brownish black granules. The dark masses tended to settle, and above the dark granules the liquid was clear.

Reaction of black vomit, acid.

Under the microscope numerous altered blood corpuscles were observed diffused through the liquid, and the dark flocculent masses were found to be composed of altered blood corpuscles and fragments of the coloring matter of the blood. Numerous cells of the mucus membrane of the stomach were also present; and the cells appeared to have undergone a change similar to that observed in the excretory cells of the tubuli uriniferi, and were filled with numerous small granules and oil globules.

When the black vomit was carefully examined under magnifying powers varying from 1-5 to 1-18 of an inch, a few vibrios and a delicate branching fungus were seen, resembling those commonly developed in putrid fluids with great rapidity in this warm, moist climate.

The blood poured out into the stomach in yellow fever rapidly undergoes change from the loss of digestive power in the stomach, and from the presence of the urinary constituents eliminated by the gastric mucus membrane: the blood oozing from the gums and lips also undergoes decomposition and forms the nidus for the development of numberless plants and animalculæ of simple organization.

I have as yet been able to establish no relationship between the organic forms of black vomit and the characters, symptoms and progress of the disease. There appears to be no relationship of cause and effect between them: the presence of these forms appears to be a mere coincidence.

I also clearly observed under the microscope a number of broken capillaries in this sample of black vomit, which were filled with blood corpuscles variously altered in shape.

Specific gravity of black vomit	1008
Reaction of black vomit	Acid.
Solid matter in 100 parts of black vomit	grains, 2.3
" " " 1000 " " "	23.00
Water " " " " "	977.00

Solid matters of black vomit consisted chiefly of colored blood corpuscles, coloring matter of the blood, and albumen.

Saline matters in 100 parts of black vomit		0.2
" " " 1000 " " "		2.00
Organic matters in 1000 parts of black vomit........23.00	Organic matters	21.00
	Saline matters	2.00

On account of the great restlessness of the patient, one-third of a grain of morphia was administered by subcutaneous injection.

Evening.—No urinary secretion; complete suppression of urine during the past 24 hours. The morphia induced some rest, and appeared to arrest the vomiting. Capillary circulation greatly embarrassed. The injection of morphia was repeated, but with no perceptible effect, the stagnation of the blood in the capillaries apparently preventing its absorption. Pulse slow and moderately full.

The patient died at 10 o'clock, p. m., and up to the time of death no urine had been passed.

There was complete suppression of urine during the last 40 hours of life.

AUTOPSY TEN HOURS AFTER DEATH.

Exterior.—Black vomit running from the mouth. Superior portion of skin and face golden colored. Lower dependent portions of a mottled, dark purplish and yellow hue, as if the body had been beaten with a club. Muscular, well built subject.

Head.—The membranes of the brain were congested, but not to a greater extent than is usual in fevers. There were no marks of inflammation or of exudation upon the membranes of the brain. The congestion appeared to be of the nature of a simple stasis of blood.

Weight of brain 55½ ounces.

Structure of brain moderately firm; no serous accumulations. In ventricles of brain only a small amount of serous fluid. The suppression of urine was not in this case attended with increase ot the serous fluid of the ventricles of the brain.

After careful microscopical examination, with powers varying from ¼ to 1-18 of an inch objective, and the various occularies, I was unable to detect any structural alterations in the ganglionic cells or commissures of the brain; neither were any living animal or vegetable cells or spores, however small, discovered.

When the brain was finely comminuted in a porcelain mortar, and distilled water added in sufficient amount to make a thin paste, and then boiled, and the fluid filtered off from the coagulated nervous structures, the decoction presented a golden yellow color. Careful chemical examination showed that this color was due to the presence of bile.

The watery extract was then slowly evaporated to dryness and treated with alcohol. The alcoholic extract in like manner presented a golden yellow color, and contained some of the constituents of bile. When the alcoholic extract thus obtained was allowed to evaporate slowly under the microscope upon a glass slide or in a watch glass, crystals of leucine, phosphate of ammonia, chloride of ammonium and of urea, made their appearance. When chemically pure nitric acid was added, numerous lozenge shaped and tabular, rectangular, thin crystals of urea made their appearance. The urea appeared to be at least one thousand fold more abundant in the textures of this yellow fever brain than in the brain of those subjects whose kidneys have acted fully and freely up to the moment of death.

The existence of urea in this brain, in considerable quantities, was clearly demonstrated to several distinguished physicians of New Orleans, as well as to a large number of students of the Medical Department of the University of Louisiana.

Both bile and urea were thus shown to have accumulated in the brain of this yellow fever subject.

Thorax.—Lungs congested with blood. The capillary congestion was especially intense in the more dependant portions.

The tendency to capillary congestion in yellow fever is one of the most marked characteristics, and affects all the organs and tissues. The distension of the capillaries with blood, and the bloody appearance of the muscular structures, cellular tissue, and lungs especially, are due in great measure to the arrest of the functions of the kidneys and liver, and the retention, not only of the excrementitious materials, but also of the watery element of the bile and urine.

When careful sections of the lungs were made, with Valentin's knife, the microscope revealed a distended and congested state of the capillaries, which were impacted with colored blood corpuscles. Nothing further, however, was discovered in this examination; no animal or fungoid forms were discovered in the blood of the capillaries of the lungs, or in the air cells.

Heart.—The heart contained in all its cavities dark fluid blood. The muscular structures of the heart presented a yellow color, like that of the kidneys, and appeared as if they were undergoing fatty degeneration. The muscular textures were softer than usual. The muscular structures of the heart were carefully examined under the microscope, and the fibres were found to have lost their distinct transverse markings, and to have become loaded with oil globules. Oil was deposited throughout the textures of the heart.

Weight of heart, 8½ ounces.

When the fibres of the heart were crushed in a mortar, and subjected to similar treatment to that employed in the examination of the brain, the watery and alcoholic extracts presented a golden color, from the presence of the coloring matter of the bile. The watery extract, or rather, decoction of the heart, before filtration, resembled a rich soup made from marrow of bones, the surface of the porcelain evaporating dish containing the decoction being covered with a thick scum of yellow oil.

When the alcoholic extract from the evaporated residue of the watery extract of the heart was evaporated slowly in a watch glass, crystals of chloride of ammonium, leucine and of urea, were clearly observed under the microscope.

Chemically pure nitric acid, added to the watery extract, obtained from the residue of the alcoholic extract or solution (which was itself obtained from the residue of the water extract obtained directly from the structures of the heart), developed numerous characteristic lozenge shaped and tabular crystals of nitrate of urea.

EXAMINATION OF THE BLOOD FROM THE CAVITIES OF THE HEART.

Reaction of the blood from the cavities of the heart, acid. Under the microscope many of the blood corpuscles presented a crenated wrinkled appearance, others were swollen, whilst others, again, presented a normal appearance.

I could not, after careful examination with high powers, detect any animalculæ or simple vegetable forms in the blood, although the search was conducted with great care, with powers of various degrees, from the 1–4 to the 1–18 inch objectives, the magnifying power with the highest objective reaching 1050 diameters.

The blood was fluid, with little or no fibrin or fibrinous clots.

The fibrin was in so small amount, and in such a soft (readily dissolved) condition that it was impossible to estimate the amount.

Specifiic gravity of blood............................1046

1000 *parts of blood contained:*

Water		852.70
Solid residue, 147.30	Organic matter	137.50
	Fixed saline constituents	9.80

The specific gravity of the blood from the heart was lower, and the solid matters less than in the blood of the vena cava.

From experiments which I have conducted, it appears that the specific gravity of the blood in the cavities of the heart, after death from yellow fever, is less than that contained in the large blood-vessels.

This appears to be due to several causes, as the effusion of the more watery elements of the muscular structures of the heart through its walls after death, into its cavities, and also because this organ continues to circulate the blood, or rather, to force it through its cavities during the last moments of life; the red blood corpuscles are thus gradually arrested in the capillaries, and only the more tenuous or serous portions of the blood are returned to its cavities during the last moments of life.

Alimentary Canal.—Mucus membrane of stomach intensely congested. The stomach contained only a small quantity—about f℥j—of dark, thick black vomit, which emitted a foul, offensive smell, and contained numerous blood corpuscles, and cells of the mucus membrane of the stomach, and fragments of capillaries, loaded with colored blood corpuscles. With the exception of a few vibrios, no vegetable or animal forms were observed.

The mucus membrane of the stomach presented an intensely injected appearance, and a deep purplish color.

The reaction of the black vomit and mucus membrane of the stomach was alkaline, and a rod, dipped in hydrochloric acid and held over the stomach, gave forth dense white fumes, from the presence of ammonia and carbonate of ammonia. The reaction between the hydrochloric acid and volatile alkali of the black vomit was marked, and the fumes of chloride of ammonia very dense. The urea eliminated by the stomach had been partially converted into ammonia and carbonate of ammonia: we say partially, because I found upon analysis, urea in considerable amount.

The extract of the different organs also contained carbonate of ammonia; and this fact indicates either that the urea was partially converted into carbonate of ammonia in the blood, or else that this substance was reabsorbed from the gastro-intestinal mucus membrane.

Reaction of small intestines alkaline. The fluid contents of small intestines contained ammonia.

Spleen.—Weight of spleen, 12½ ounces; somewhat enlarged, and somewhat softer than usual in yellow fever. Splenic mud consisted of numerous colored corpuscles, and oil globules and granular masses; but no animal or vegetable forms were observed.

Blood corpuscles of spleen not specially altered in appearance. Oil globules abundant in spleen. The spleen, as well as the heart and brain, contained urea. The decoction of the spleen presented a mahogany brownish red color, from the presence of the coloring matter of the blood.

Liver.—Of a yellow box-wood color, resembling a fatty liver. Under the microscope the liver appeared to be filled with oil. The liver cells were distended with oil and granular matter, and the hepatic ducts appeared to be blocked up with oil globules and granular matter.

The liver cells presented a swollen, spherical appearance, and were distended with oil and granular matter. The changes of the liver were similar to those of the heart and kidneys. The matter deposited in the liver was not, however, entirely oil, but was of a fibroid and albuminous character, and was coagulable by heat.

Weight of liver, 42 ounces.

After standing 24 hours, the blood from the cut surface of the liver gave an acid reaction, and was found under the microscope to contain numerous prismatic crystals of the phosphate of ammonia, magnesia and lime.

The blood of the liver contained numerous oil globules, but no specific animalculæ or vegetable organisms. The reaction of the cut surface of the liver, when first removed from the body, was in like manner acid.

Bile—Gall-Bladder.—Only partially filled with bile, and presented a flaccid appearance. The coats of the gall-bladder appeared to be thickened.

Specific gravity of bile, 1042.5.

The bile gave forth, after standing a few hours, a most disagreeable, stinking odor.

The bile was thick, grumous and ropy. When viewed *en masse*, the bile presented a dark greenish brown, almost black appearance.

The gall-bladder contained only 100 grains of this thick ropy bile. Upon careful evaporation, the 100 grains of bile yielded 14.25 grains of solid residue; and upon incremation, 1.1 grains of saline matter.

1000 *parts of bile contained:*

Water		857.40
Solid residue, 142 50	Organic matter	131.50
	Saline matter	11.00

In this case the bile was almost as rich in solid matter (relatively) as the blood. Æther throws down the coloring matter from the alcoholic extract of the bile in yellow fever, but the etherial extract, as is usual with human bile, yields upon evaporation no crystals under the microscope.

Under the microscope the bile was found to contain some blood corpuscles, and epithelial cells and casts of the biliary tubes, composed of granular, fibroid or albuminous matters, similar to those found in the tubuli uriniferi of the kidneys.

Kidneys.—Weight, 10¾ ounces. These organs presented a light yellow color, similar to that of the liver. Under the microscope, it was found that both the cortical and medullary substance of the kidneys were filled with oil globules.

When careful sections ot the kidneys were made, with Valentin's knife, and examined under different powers of the microscope, the malpighian corpuscles were greatly congested with blood, and the tubuli uriniferi and excretory cells filled with oil globules and yellow, granular fibroid matter.

The bladder of this patient contained after death 100 cc. of urine; this was the entire amount excreted by the kidneys, from October 14, 11 a. m., to October 15th, 10 p. m., the moment of death.

During a period of 35 hours, therefore, only 100 cc. of urine were separated from the blood.

The urine presented a light golden yellow color, and turbid, oily appearance.

Specific gravity of urine, 1012.

The urine, upon standing, let fall a heavy light-colored flocculent deposit. Under the microscope this deposit was found to consist of casts of the tubuli uriniferi, filled with granular matter. Sections of the kidney of this yellow fever patient were carefully compared with the deposits under the microscope, and the tubuli uriniferi in both were found to have undergone a similar change. In fact, the tubuli uriniferi of the kidney itself were loaded with oil globules and granular matter, of a yellow color, in a precisely similar manner.

Somewhat similar appearances are presented in the urine of malarial heamaturia; that is, in some cases, after congestion of the kidneys resulting in hæmorrhage has continued for varying lengths of time, exfoliation of the excretory tubes and cells takes place; but the casts and cells are not of the golden hue of yellow fever, they are frequently either stained with the heamatin of the blood, or else the urinary tubes are loaded with altered blood corpuscles and the altered coloring matter of the blood.

ANALYSIS OF THE URINE ABSTRACTED FROM THE BLADDER OF THIS PATIENT AFTER DEATH.

Amount of urine excreted during the last 35 hours of life, 100 cc. (grains 1580.74); reaction, acid; specific gravity 1012.

100 *cc. of urine (grains* 1580.74) *excreted during* 35 *hours contained:*

Urea	grains, 33.96
Uric acid	2.00
Phosphoric acid	4.32
Equivalent of phosphorus in phosphoric acid	1.89
Sulphuric acid	2.74
Equivalent of sulphur in sulphuric acid	1.09
Chloride of sodium	7.70
Chlorine in urine	4.69
Fixed saline constituents	6.00
Dried albumen	9.00

This sample of urine approached more nearly to the standard of health, in its chemical constitution, than that excreted on the 14th of October. Thus in the latter the uric acid was greatly increased, amounting to 14 grains.

If the two analyses of the urine of this patient be combined, we will thus have a correct view of the amount and character of the urinary excretion during the last 59 hours of life.

Urine Excreted during 24 *Hours—October* 13, 11 *a. m., October* 14*th*, 11 *a. m.*—180 *cc.* (*grains* 2833 6) *contained:*		*Urine Excreted during* 35 *Hours—October* 14*th*, 11 *a. m.*, *to October* 15*th*, 10 *p. m.*—100 *cc.* (*grains* 1580.70) *contained:*	
Urea	grs. 77.81	Urea	grs. 33 96
Uric acid	14.40	Uric acid	2.00
Phosphoric acid	11.10	Phosphoric acid	4.32
Phosphorus in phosphoric acid	4.87	Equivalent of phosphorus	1,89
Sulphuric acid	6.17	Sulphuric acid	2.74
Sulphur in sulphuric acid	2.44	Sulphur in sulphuric acid	1.09
Chloride of sodium	3.64	Chloride of sodium	7.70
Chlorine	2 22	Chlorine	4.69
Fixed saline constituents	10.89	Fixed saline constituents	6.00
Dried albumen	5.82	Dried albumen	9.00

If the preceding analyses be combined, we will then have the analysis of the urine excreted during 59 hours, as in the following table.

Urine excreted during 59 *hours—October* 13*th*, 11 *a. m.*, *to October* 15*th*, 10 *p. m.*—280 *cc.* (*grains* 4414.30) *contained*:

Urea	grains 111.77
Uric acid	16.40
Phosphoric acid	15.42
Equivalent of phosphorus in phosphoric acid	6.76
Sulphuric acid	8.91
Equivalent of sulphur in sulphuric acid	3.55
Chloride of sodium	11.34
Chlorine in urine (chloride of sodium)	6.91
Fixed saline constituents	16.80
Dried albumen	14.82

It is thus established that during the last 59 hours of life, only 111.77 grains of urea were excreted by this patient, notwithstanding that there was fever and great nervous agitation, restlessness, and aberration of intellect, which are always accompanied by an increased formation of urea.

It would be just to estimate the amount of urea actually formed within the system, during the last 59 hours of life, at not less than 1500 grains; the amount may have greatly exceeded this calculation: if from this be subtracted the actual amount excreted by the disabled kidneys, we have, as the result, not less than 1388.23 grains of urea remaining in the system. The amount was probably much greater, as the cessation of the function of the kidneys was most probably gradual and not sudden.

We have in this large amount of urea retained in the blood and various organs, and especially in the brain, as shown by actual analysis, an explanation of the peculiar state of intoxication manifested by the patient, as well as the existence of alkaline black vomit.

CASE OF YELLOW FEVER: ALKALINE BLACK VOMIT; SUPPRESSION OF URINE; DEATH; PATHOLOGICAL LESIONS.

Jacob Siegarest; age 26; native of Germany; admitted into Charity Hospital October 14th, 1871.

Patient states that he came from Havre, three months ago, to New Orleans, since which time he has been living at 433 Tchoupitoulas street. "Was taken sick with fever" five days ago. At the present time—October 14th, evening—intellect dull, and the patient appears to be unable to express his feelings or explain his symptoms. Commenced vomiting blood shortly after his admission into the hospital, and this vomiting has continued up to the present time, at short intervals. The blood is gulped up with little or no effort.

Patient lies quiet; does not complain of any pain, or even uncomfortable feeling. When, however, pressure is made over the region of the epigastrium, shows signs of distress. Complexion jaundiced and dusky; tongue dry, red at tip and edges; tracheal mucus membrane of mouth and gums congested; dark blood oozing from gums. Capillary circulation feeble and depressed. When pressure is made upon the discolored mottled surface, the blood is forced out of the sluggish capillaries and a white spot remains, which gradually assumes the dusky, congested appearance, as the dark blood slowly returns. Pulse 84, full and apparently of good volume; respiration 16; temperature of axilla 100° 5′.

It is worthy of note, that in cases of uncomplicated yellow fever, during the most dangerous period, viz., that characterized by exhaustion, passive hæmorrhages, black vomit, jaundice, and suppression of the urine, neither the respiration nor the pulse are increased in frequency, and *may be even slower than in health.*

When, however, an inflammatory disease is engrafted upon yellow fever, as pneumonia, pleuritis, pericarditis, or abscess, the pulse and respiration are both increased in frequency.

October 14th, morning.—Bowels opened once during the night; vomited black blood this morning. Condition of patient much the same, only he appears weaker and more lethargic; appears to be wholly unconscious of his condition, notwithstanding that dissolution appears to be imminent. Temperature of axilla 101° F.; pulse 92; respiration 20. Has passed no urine since admission into the hospital; catheter introduced, and only about one drachm (60 drops) of turbid yellow urine were drawn off. Reaction of urine, acid. Urine contained bile, and was also loaded with albumen. Under the microscope, the turbidity of the urine was found to be due to the presence of numerous casts of the urinary tubes, filled with granular, fibroid matter and oil globules: the excretory cells of the tubuli uriniferi, and from the pelvis of the kidney, were also present in large numbers.

Evening.—Patient has remained in the same listless, depressed state, without active delirium, and apparently wholly unconscious of his distressed state. Still vomiting small quantities of dark, defebrinated blood. Has passed no urine during the day; it is impossible to draw off any by the catheter, and the bladder is entirely empty. The kidneys have ceased to act.

Temperature of axilla 100° F; pulse 80; respiration 18.

EXAMINATION OF BLACK VOMIT.

It should be borne in mind that this patient has suffered with complete suppression of urine since his entrance into the hospital. The catheter was introduced, as we have said, several times, and only upon the first introduction was about one drachm of light colored yellow turbid urine drawn off, which, as we have stated, was loaded with albumen and urinary casts and cells. This represents the whole amount of urine excreted during 30 hours.

At the present time, October 15th, the patient gulps up, with little or no apparent effort, what resembles almost pure dark defibrinated blood. As we have stated, this vomiting of blood was noticed shortly after his entrance into the hospital.

The black vomit resembles in appearance and in color, dark defibrinated blood.

Under the microscope, the black vomit was found to consist of numerous blood corpuscles, with some mucus cells and broken capillaries filled with blood corpuscles; but no living vegetable or animal organisms were discovered with the highest powers of the microscope. I have kept blood drawn from yellow fever patients, also sections of the liver, taken from the bodies of yellow fever patients after death, upon my table, freely exposed for days and weeks, and months, in this warm, moist climate, and examined with the microscope and with the naked eye, the vegetable structures which formed within and upon the surface, reasoning thus—that if the disease had been caused by fungi, they would sooner or later make their appearance upon the surface of the organs and blood, which were supposed to form a nidus for their development.

Up to the present time, nothing peculiar to yellow fever has been discovered. Blood now standing upon my table, exposed in an open beaker glass (said blood having been drawn, some two weeks before, from the arm of a yellow fever patient), has upon its surface a light white mould, which presents under the microscope the appearance of the yeast plant. Similar growths appeared upon starch and urine, and albuminous fluids, and upon organic substances which had no connection whatever with yellow fever.

ANALYSIS OF BLACK VOMIT, EJECTED BY THIS PATIENT DURING LIFE.

Black vomit resembles dark grumous defibrinated blood.

Black vomit emits a disgusting putrid odor.

Specific gravity of black vomit 1020.

Reaction of black vomit, alkaline.

Heavy fumes of chloride of ammonium evolved, when a glass rod dipped in hydrochloric acid is held over the black vomit.

Careful chemical analysis demonstrated the presence, in the black vomit, of both AMMONIA and UREA.

The UREA was separated from the black vomit with great care, and every precaution was employed in the analysis to secure accurate results.

1000 *parts of black vomit contained:*

Water		935.20
Solid residue, 74.80	Organic matter, consisting chiefly of colored blood corpuscles, altered coloring matters of the blood; Albumen; Urea; Ammonia	72.20
	Fixed saline constituents	2.60

The black vomit was carefully examined for *iron*, and this constituent was present in the same relative proportion that would have been present in an equivalent amount of ordinary blood.

The presence of unaltered blood corpuscles, as well as of the broken capillaries, in the black vomit, is proof that there is a solution of continuity of the mucous membrane of the stomach in some cases of yellow fever; and that black vomit is not a secretion, strictly so called, although it may be intimately associated with the elimination of certain elements of the urine, by the gastric mucus membrane.

The cells of the mucus membrane of the stomach were filled with granular matter and oil globules; thus indicating that a similar change takes place in the mucus membrane of the stomach, which is so marked in the excretory structures of the kidneys.

This patient died, October 16th, at 6 a. m., without becoming actively delirious, although the intellect was sluggish and wandering.

AUTOPSY THREE HOURS AFTER DEATH.

Exterior.—Black vomit had run out of the mouth down the sides of the face and along the chest. Complexion, golden yellow; dependent portions of body mottled with yellow and purple; intense capillary congestion of dependent portions of the trunk and extremities.

Thorax.—Heart of a light yellow color, relaxed and flabby. Weight of heart, 8½ ounces. Under the microscope, the textures of the heart were found to be loaded with oil globules.

The decoction of the heart was covered with a thick layer of golden-yellow oil, resembling the rich soup from marrow bones.

The alcoholic extract from the watery extract gave crystals of leucine, and chloride and phosphate of ammonia, and urea, under the microscope.

When treated with nitric acid, numerous well formed lozenge-shaped crystals of nitrate of urea were developed.

Both cavities of the heart contained warm fluid blood, which gave a slight acid reaction to litmus blue, and upon standing, coagulated, forming a soft gelatinous clot, which possessed no contractile power.

The aorta, vena cava, and pulmonary arteries and veins, in like manner, contained warm fluid blood, which coagulated imperfectly upon standing.

EXAMINATION OF FLUID BLOOD, FROM CAVITIES OF HEART, THREE HOURS AFTER DEATH.

The blood, after its abstraction, coagulated, forming a loose clot; the fibrin, however, rapidly dissolved, and no serum was separated.

Under the microscope, the blood corpuscles presented no special alteration: when spread upon the glass slide, and also during the coagulation of the blood, they rapidly agglomerated together, forming rouleaux, as in inflammatory diseases.

The running together of the colored blood corpuscles was as rapid and complete as in cases of well marked inflammation.

It was impossible to determine the weight of the fibrin, or to collect pure serum, free from the colored blood corpuscles and the coloring matter of the red corpuscles, as the fibrin rapidly dissolved.

The fibrin appeared to be in very small amount; it was not more than one-twentieth of the quantity usually found in healthy blood.

Specific gravity of blood from the cavities of the heart, 1047.

1000 *parts of blood from the cavities of the heart contained:*

Water		821.57
Solid residue, 178.43	Organic matter	170.59
	Colored corpuscles	
	Albumen-fat	
	Urea ammonia, extractives	
	Fixed saline constituents	7.84
	Fibrin	Trace.

EXAMINATION OF FLUID BLOOD FROM VENA CAVA ASCENDENS, THREE HOURS AFTER DEATH.

Specific gravity of blood from vena cava, 1062. Blood of vena cava fluid and warm when first drawn; coagulated, forming a very loose coagulum, which did not enclose the whole amount of colored blood corpuscles.

This coagulum gradually dissolved, and it was impossible to determine the amount of fibrin, or to obtain clear serum free from colored corpuscles.

Reaction of blood from vena cava, slightly acid.

1000 *parts of blood from vena cava contained:*

Water		775.00
Solid residue, 225.00	Organic matters	217.13
	Colored blood corpuscles	
	Albumen fat and extractives	
	Urea and ammonia	
	Fibrin	Trace.
	Fixed saline constituents	7.69

It will be observed from the preceding analysis, that the blood in the vena cava contained more solid matter than that obtained from the cavities of the heart. It would appear that the returning current of blood from the capillaries and venous system, owing to the tendency to coagulation, and to the settling of the colored corpuscles, contained more solid matter than the blood of the heart.

After careful microscopical examination, I was unable to discover any animal or vegetable organisms in the blood.

Abdominal Cavity—Stomach.—The stomach contained a small quantity—about one fluid drachm—of black vomit, which gave a strong alkaline reaction. Under the microscope, the black vomit was found to consist chiefly of colored blood corpuscles, cells of the mucus membrane of the stomach, and broken capillaries, floating in an alkaline albuminous fluid.

Reaction of mucus membrane of stomach, strongly alkaline.

When a rod dipped in hydrochloric acid was held over the mucus membrane of the stomach, dense white fumes of chloride of ammonium were given off.

Reaction of intestinal canal, in like manner, alkaline from the presence of ammonia.

After careful microscopical search for living organisms, no vegetable cells or animalculæ were discovered in the contents of the stomach or intestines.

The cells of the mucus membrane of the stomach were filled with oil and granular matter (the oil in the form of small globules), and presented an appearance similar to those of the kidneys and liver.

This observation appears to throw some light upon the causes of black vomit, and indicates that the poison of yellow fever affects the mucus membrane of the stomach, producing profound alterations, similar to those existing in the liver, kidneys and heart, as if the most active organs were those most subject to its action: this would most probably be the case if the poison acted chiefly upon the blood.

Liver.—Weight of liver, 48¾ ounces. Liver of a uniform yellow color; the appearance and color of this organ was characteristic of yellow fever.

Liver loaded with golden yellow oil. Oil, in the form of globules, existed within and around the liver cells and capillaries.

The hepatic capillaries contained oil globules and granular matter. The structures of the liver also contained much yellow granular albuminoid matter.

The granular matter found in the liver of yellow fever is similar to that observed in the kidneys, and is different from that black granular pigmentary matter of malarial fever, which is thickly deposited in the lobuli of the liver, being, as a general rule, most abundant upon the periphery of the lobuli, and in the capillaries of the portal system.

I have never observed in the yellow fever liver the disorganized red corpuscles and masses of heamatin characteristic of malarial fever. This observation applies to uncomplicated yellow fever. When, however, yellow fever is engrafted upon malarial fever, or occurs in one who had suffered at some previous time with a prolonged attack of malarial fever, the pigment granules are present. And without doubt, the contradictory statements of the appearance of the liver in yellow fever, may to a certain extent be referred to the presence or absence of the effects upon this organ of the malarial poison.

Both the watery and alcoholic extracts of the liver were of a golden color, and contained bile. Leucine and urea, and ammonia salts, were detected in the alcoholic extract obtained from the watery extract of the liver.

Urea in considerable amount was determined by the standard chemical method.

After standing 24 hours in a porcelain dish, the blood which flowed gradually from the cut surface of the liver was found, under the microscope, to contain numerous prismatic crystals of triple phosphate and oil globules, but no specific animal or vegetable organisms.

The GALL-BLADDER was flaccid, and contained only 110 grains of dark green, almost black, *bile*. In thin layers the bile presented a golden yellow color: a few drops of this concentrated bile were sufficient to color, of a decided yellow color, a large basin full of water.

Specific gravity of bile, 1040.

110 *grains of bile contained:*

Water	grains, 86.55
Organic matters	13.45
Saline constituents	1.26

1000 *parts of bile contained:*

Water		877.73
Solid residue, 122.27	Organic matters	110.82
	Fixed saline constituents	11.45

The coloring matters of the bile were precipitated by æther from the solid residue in considerable amount; but, as is usual with human bile, no crystalline substances were obtained.

Kidneys.—Somewhat congested. The kidneys presented a yellowish color, or rather brownish yellow color, of a similar but deeper shade to that of the liver and heart.

The structures of the kidney cut under the knife like those of the liver. There were no granular appearances, as in cirrhosis, or granular degeneration. Tubuli uriniferi filled with oil globules and granular matters.

The decoction of the kidney contained bile, but yielded little or no urea. This was the case with the kidneys in the previous case. It would appear that the urea was in greater amount in the brain, next in the heart, then in the liver and blood, and lastly, in the kidneys. This organ without doubt continued to excrete the constituents of urine, as long as life lasted, in very small amount, and it is to this cause that we must attribute the small amount of this constituent in these organs. We have in such facts a refutation of the views held by certain physiologists, that urea is formed in the kidneys. I could get only traces from these organs, by processes which yielded abundant crops of crystals from the brain. Weight of kidneys, 12½ ounces.

The bladder, after death, contained only 115 cc. of urine, which was the whole amount excreted by the kidneys from the entrance of the patient into the hospital up to the time of death.

The urine gave an acid reaction immediately after its removal from the bladder, three hours after death. The urine, however, changed in 24 hours to an alkaline reaction, and then threw down an abundant crop of crystals of triple phosphate, and emitted a most foul stench, resembling that of the American Polecat. The odor was disgusting in the extreme.

Specific gravity of urine, 1012.

The urine contained a flocculent deposit, consisting of granular matter, casts of the tubuli uriniferi, and cells from the excretory structures of the kidney.

Here, then, in these two cases of yellow fever, lying side by side, in the same ward, in adjoining beds, almost, precisely the same amount of urine was obtained from the bladder after death; the physical and microscopical characters were the same; the chemical characters also were alike.

Specific grvity of urine 1012.

Amount of urine obtained from bladder after death, 115 cc. (grains 1821.6) representing the whole amount of urine excreted during the last 45 hours of life.

Urine excreted during 45 *hours* (*grains* 1821.6) *contained:*

Urea	grains 35.74
Uric acid	Undetermined.
Phosphoric acid	2.12
Phosphorus in phosphoric acid	0.93
Sulphuric acid	7.10
Sulphur in sulphuric acid	2.84
Chloride of sodium	4.66
Chlorine in chloride	2.83
Fixed saline constituents	5.75
Dried albumen	11.42

Spleen.—Weight, 5½ ounces. Spleen not enlarged but normal in appearance; under the microscope the splenic mud contained, in addition to altered colored corpuscles, numerous oil globules. Decoction of spleen contained both urea and uric acid.

The urea was in less relative amount in the spleen than in the liver and brain.

The whole amount of urea excreted during the last 45 hours of life amounted to only 35.14 grains. The amount of urea retained in the blood of this patient, in consequence of the suppression of the action of the kidneys, was therefore as great as in the preceding case, and the peculiar state of intoxication must be referred, in like manner to the retention of the urinary excretion.

It is evident that during the active stage of yellow fever profound changes take place in the organs and tissues, and especially in the *kidneys*, heart and liver; and oil and granular fibroid or fibroid matters transude through the capillaries, and fill up the cells and excretory ducts, and arrest the functions of these organs.

The appearance of albumen in the urine of yellow fever is attended also with the presence of casts of the tubuli uriniferi, and also of the excretory cells of the kidney. This phenomenon resembles that of scarlet fever, and also of malarial hæmaturia.

In intermittent, remittent and pernicious malarial paroxysmal fever, uncomplicated by hemorrhage from the kidneys; albumen and casts are almost always absent, as I have demonstrated by numerous careful chemical and microscopical examinations, and the urine presents periodic changes in its constitution corresponding with those of the paroxysms.

Thus, during the chill, and at the commencement of the hot stage of malarial paroxysmal fever, phosphoric acid disappears almost entirely from the urine; as the hot stage progresses, and the febrile action and the heat commence to decline, there is an augmentation of phosphoric acid, and most generally heavy crystalline deposits of the triple phosphates and amorphous urates; uric acid is either increased or remains at the normal standard during the chill, disappears almost entirely during the fever, and then increases rapidly, and rises to a high figure after the subsidence of the febrile excitement, and very often continues, for days, two, three, and even six times more abundant than in the normal state.

Both urea and chloride of sodium appear in increased quantities during the chill and fever. If the disease be prolonged, the chloride of sodium progressively decreases, from the diminution of the usual supply of food during the fever, whilst the urea remains in large amount.

The fever of the *first stage* of yellow fever, like *fever in general*, however caused, consists essentially in elevation of temperature, arising from chemical changes in the blood and tissues, and is attended with changes in the physical and chemical constituents of the blood, and aberrated nervous action. As long as the skin, kidneys, lungs, and gastro-intestinal canal perform their functions, this stage is characterized, as in other fevers, by an increase in the amount of solids excreted. But this increased elimination of the products of chemical change is not, in yellow fever, a constant concomitant of the increased temperature, because, in virtue of the lesions of certain organs, as the kidneys and skin, the constituents of the urine and bile accumulate in the blood, and become the active agents in the production of aberrated nervous and muscular actions, and even of death itself.

Not only are large quantities of the products of oxidation formed during the hot stage of yellow fever, but, as we have shown by numerous analyses of the blood, black vomit, urine, brain, heart, liver, spleen and kidneys, in this disease, they are altered to a certain extent from those conditions characteristic of health; the albumen of the blood, under the action of the poison, being transformed into nitrogenous and non-nitrogenous compounds, a portion of which, as the fatty matter and altered fibrin, being arrested, or accumulated in certain organs, as the heart, liver and kidneys.

The importance of the preceding observations, upon the constitution and changes of the urine in yellow fever, are placed in a clear light, when they are considered in connection with the causes of death in this disease. Thus death may be caused in yellow fever: 1st; *by the direct action of the febrile poison upon the* BLOOD and NERVOUS SYSTEM, *depressing and deranging the action of the one, and rendering the other unfit for the proper nutrition of the tissues; 2d—by the suppression or alteration, or diminution of the functions of certain organs, as the* KIDNEYS *and the* LIVER, *and the retention in the blood of the excrementitious matters normally eliminated by these organs; 3d—by the structural alterations of the* HEART, *and consequent loss of power in this organ; 4th—by profuse* HÆMORRHAGE *from the* STOMACH *and* BOWELS; *5th—by the absorption from the stomach and bowels of* PUTRID BLACK VOMIT, *which acts as a powerful poison, deranging the blood, and prostrating the nervous and muscular forces.*

493 St. Charles Street, New Orleans, La.
October, 1873.

Article II. *Miasm; its Probable Origin and Action.* By Bat Smith, of Mobile, Alabama, Student of Medicine in the Medical Department, University of Louisiana.

Among the infectious diseases which are supposed to originate from some poison suspended in the atmosphere, and emanating from the soil, is a class known as the "malarial" or miasmatic fevers. Although they possess numerous symptoms in common with other diseases, still they present many characteristic traits which seem to belong exclusively to them, the most striking of these being their periodicity.

This distinctive trait, it is true, may, at times be barely perceptible, or may be wanting altogether, but nevertheless these forms of the disease are distinguished by many other peculiarities, among others the constant possibility of their assuming the true intermittent type.

Miasmatic diseases appear as single sporadic cases, or as epidemics, but especially are they to be considered as endemic in many parts of the world.

In hot and moist climates they are most frequently met with, and in many regions they predominate to such a degree as to involve the pathology of almost all the diseases occurring in those parts. A close consideration of the circumstances under which miasmatic diseases are rendered endemic, will aid us to come to some conclusion as to the probable cause of their origin.

They appear principally in marshy regions; the formation of new swamps often causes the development of the disease in places where it had been heretofore unknown; while with the removal of the cause, viz., the total and effectual drainage of the swamp, the disease disappears, to appear again as soon as the cause has been reëstablished.

It is not to be taken for granted, that miasmatic fever exists as an endemic disease in all marshy districts; for we know, from well authenticated sources, that there are many marshy regions which are exempt from miasmatic diseases, though marked by all the characteristics which are found elsewhere to be most conducive to those affections.

It is a well known fact, that the marshy regions of the Australian coast are free from malarial fever; the same thing is true of many islands of the Pacific Ocean, where large swamps abound, as well as of the immense marshy districts at the mouth of the Rio de la Plata, and of many districts on the western coast of Africa, the latter being otherwise so well known for the great prevalence of miasmatic fevers in their severest forms.

The quantity of miasm produced depends greatly upon the amount of water and degree of temperature. Thus, frozen marshes never produce malaria; and if a deep layer of water protects the bottom of the swamp from the action of the sun and atmosphere, miasm is not generated. In hot seasons, when the mouldering bottom of the marsh is exposed to the action of the sun's rays, there is a great prevalence of the fever; and it frequently happens that those marshes which seem to be perfectly dry, presenting a hard surface, develop the greatest amount of miasmatic poison, they being rich in subsoil water.

Miasmatic fevers are endemic in low lands which are flooded yearly, decomposition of large quantities of vegetable matters subsequently taking place when exposed to great heat. They also occur where land which has lain for a long time uncultivated and neglected is broken up and tilled anew, thus exposing the vegetable matters which it contains to the action of the sun and atmosphere.

The character of the subsoil exerts great influence upon the development of the poison. As an example of this, a dense layer of clay under the surface will mechanically promote the miasm, by preventing the water from soaking through.

There are, on the other hand, mechanical causes which prevent the development of malaria. Thus, in temperate zones, forests may contribute to health by protecting the soil from the sun. They may consume miasmatic exhalations, either by absorbing them through their leaves, or by taking up by their roots the rain water which may become impregnated with them as it falls; but in those climates where the temperature, even in the shade, is abundantly sufficient to produce the poison, forests are looked upon as injurious, furnishing in large quantities the material for decomposition, and the dampness which they promote doing much more harm than the impediment which they offer to the diffusion of the poison can possibly do good.

It is maintained by some writers, that the green coating covering the surface of shallow and stagnant ponds, and consisting of a low form of vegetation, serves as a preventive of disease in hot weather. I am at a loss to explain the truth of this assertion; for, at best, the covering is but thin, allowing the burning rays of the sun to penetrate beneath this layer, and to exert their calorific influence upon the substances below, just as they do in those marshes which present a hard surface, but are rich in subsoil water.

The frequent assertion that a soil or water somewhat impregnated with saline matter has *always* a tendency to promote the development of miasm, is evidently, in many instances, erroneous, especially where the ebb and flow of the tide is strong, the decomposing vegetable matter being thereby removed or washed away; but it cannot be denied that a mixture of fresh and sea water, which occurs in marshes near the seaboard, is not unfrequently productive of injurious effects.* Under these circumstances, many fresh water as well as many marine plants contained in the mixture cannot thrive, and consequently die and decompose. What influence, if any, is added to the malarial poison by the decomposition of the animal matter contained in the marshes, is not decided, but it stands beyond dispute, that those diseases originating from infection by the decomposition of

* See Niemeyer's Text Book of Practical Medicine, vol. ii , p. 608.

purely animal substances do not bear the slightest resemblance to miasmatic fever.

As a general rule, from its point of origin miasm spreads in a horizontal direction more readily than in a vertical one, being often arrested by trifling obstacles, and it rarely passes these bounds unless carried on by the wind.

Of the many different hypotheses advanced at various times, as to the probable nature of miasm, none have been supported by proofs sufficiently clear to be considered as well established facts. The oft repeated *hypothesis* of a MIASMA ANIMATUM, represented by a microscopical vegetable or animal organism should not be blindly refuted, neither should it be accepted without due degree of allowance.

In the 17th century the jesuit priest, Anathase Kircher, ennunciated a doctrine that contagious diseases were propagated by animalculæ or living particles (vegetable or animal), differing in kind in different maladies. A very similar view is held to-day by Professor Hallier, according to whom all specific diseases are due to the influence upon the body of fungus elements of distinct morphological characters. To these elements, which he declares to be the product of a fungus, he has given the name of *micrococcus*, which is said to retain the character of the fungus to which it owes its origin, and consequently it differs greatly in form and size. It would be well to add that an exceedingly high power is necessary to recognize them, on account of their minute size.

The statements of this observer were readily accepted by many, as they gave a very easy and plausible explanation of the causes of infectious diseases. Botanists, however, could not be so easily persuaded to endorse his views, neither could they be reconciled to this great deviation from all their acknowledged laws. So great a variation in form as he ascribes to the fungi could not be confirmed by other invéstigators, and notwithstanding the fact that many of the best observers conscientiously followed the same method of investigation as Hallier did, yet were they unable to obtain this so-called micrococcus from the spores of a fungus, neither could they see the same swarming out of the spores. Most of them, on the contrary, were more inclined to consider this micrococcus as nothing more than *disintegrated matter* (plasma of the spores), liberated by the rupture of the *membrane* of the spores.

In order to sustain the theory of the Jena Professor, it would be necessary to prove that a *micrococcus* or a *fungus* in the *stage of development*, is present, and that it is capable of *self maintenance and germination*. It would be necessary to adduce all the *higher forms* of the fungus from which they originated. No one has ever yet succeeded in bringing these supposed micrococci to *development*, the investigations of no small number of the best observers having invariably led to negative results.

Of the many opponents of Hallier, one of the most decided is De Bary, whose able criticism of Hallier's hypothesis leads us to doubt the accuracy of the results of his labors.

This illustrious botanist has never been able to discover the *micrococcus*, upon the existence of which the whole theory of Hallier is based. These *myocetes* are to be found everywhere in the atmosphere and fluids.* Again, many spores are caused to burst when placed in elements not compatible with their nourishment and development, thus emptying their contents in the form of *granules;* there are, therefore, many bodies by which Hallier might have been led astray.

That the existence of the micrococcus is impossible, is well demonstrated by the fact that it is well known under what circumstances the fungi *do and do not germinate*. The main proof to be shown is whether different modes of development in the fungi from those already accepted are possible, and as Hallier has failed to do this, his whole theory of the method of their development must be considered as *arbitrary*.

It is not to be denied, that of all the investigations of this excellent observer his cholera theory is his most vulnerable point. He had the dejections of cholera patients forwarded to him, which had, in all probability, remained some time in the infected sick room before they were bottled. He then allowed a considerable time to elapse before these were submitted to an examination; it is therefore reasonable to suppose that *bacteria* and many kinds of *spores*, suspended in the atmosphere, should have settled in the dejections and reproduced themselves. Cholera dejections have often been examined by others, wherein, at first, but few *spores* and *bacteria* were to be found, but when they were submitted to a second examination one day later, these bodies could be seen in large numbers. The dejections of persons in a perfect state of health were then submitted to similar investigations with like results. Then again, it has been shown, that in persons

* Edovard Eidam, Jegenwærtige Standpunct der Mycologie.

who have died of dynamic diseases, in the course of 24–36 hours *bacteria* may be found in abundance in the blood-vessels of the brain, and of other parts, although *no such bacteria were recognizable in the blood during life.**†

If we are to credit the statements of Dr. Salisbury, miasmatic diseases owe their origin to a vegetable parasite, the *palmella*. "These spores," says he, "rise only at night to a height of 50 to 100 feet above the ground, and fall again at sunrise."

The fallacy of this author's statements is almost too palpable to allow of serious consideration. The spores of the palmella species have been found everywhere where they have been diligently sought for; they are met with on the highest alpine peaks, and upon the ice-bound coasts of Greenland.† They could only have been carried to those distant regions by air currents, and as far as the spores go, just so far should their infectious influence extend, and it is absolutely impossible to comprehend how the properties of the *palmella* should be so different in malarial districts.

Apart from other errors, Salisbury makes a serious one in his conclusions in reference to the palmella spores being discharged from the system through the renal organs; for the palmellaceæ belong to the *algæ*, and are *chlorophill-producing* plants. All such plants need the light; it is probable that their very existence is dependent upon light. It is, therefore, very unlikely that they should undergo any proliferation within the body, wherefrom light is necessarily absent. Now it is well known with what extraordinary rapidity the spores of the cryptogami ripen and reproduce themselves when placed in a soil suitable to their development. The urine of malarial patients being so prone to decomposition after being voided, offers a soil eminently adapted to their growth; and should *palmella*, or other algæ and fungi, be found in it, one may readily conclude that these spores were already present in the vessel before the urine was put into it, or were deposited in it from the air afterwards.

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* Bastian, Origin of Lowest Organisms.

† During the epidemic of yellow fever in New Orleans in 1867, my preceptor, Dr. H. D. Schmidt, made many careful examinations of the brains of persons dying of that disease. The brains were all found in a state of inflammation, and although the portions examined were removed from the cranium two hours after death, and placed in bottles completely filled with alcohol and well corked, still, on the following day, *bacteria* in large numbers were found in specimens taken from the centre of a convolution, where the alcohol could not have penetrated.

† Jahresbericht, Virchow & Hirsh, vol. ii. for 1869, p. 196.

The same observation holds good for the spores found in the saliva, especially in the morning, as it is not difficult to demonstrate that the germs of the cryptogami suspended in the atmosphere collect in the mouth, particularly at night, and are expectorated with the saliva.*

As far as those experiments are concerned which were made by Salisbury, when he carried earth impregnated with *palmella* from a region infected with malaria to one where it did not exist, and where the development of the disease was the consequence, the result would certainly have remained the same if he had covered the boxes in which this earth was contained with some thick material, thereby preventing the escape of the spores, but allowing an exit to the emanations of the moist and fermenting earth.

In view of the unsatisfactory results of investigations of this parasite theory, at least as far as malaria is concerned, I am led to believe with Schwalbe, that the true cause of miasmatic diseases should be ascribed to some peculiar chemical substance of a gaseous nature, rather than to a low living organism. Basing his conclusions upon the results of numerous investigations made by himself in the malarial districts of Central America, he pronounces miasm to be a gas, generated by the decomposition of certain vegetable substances. The sun's rays and the molecular interchange in the vegetable matter from large quantities of oxygen, destroy or neutralize this gas, either wholly or in part. After sunset the gas attains a sufficient degree of concentration to act detrimentally upon the human system. The action of the poison is most intense during the night. It is suspended near the surface of the ground, and only ascends slightly in a vertical direction, and, therefore, seems to be of a somewhat greater density than atmospheric air.

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* Dr. H. D. Schmidt informs me, that in a case of diphtheria he found in the fæces, besides traces of the false membrane, a considerable number of fungoid filaments and spores, the latter in various stages of development, and also many of the lower forms of algæ. A considerable number of some species of desmidiaciæ, ranking among the higher forms of algæ, were likewise present. Water taken from the cistern where the patient resided, after being boiled and exposed to the atmosphere, was found to contain organisms of a similar character. In the black vomit of yellow fever patients fungi and algæ were also found, but could easily be procured by exposing water as in the foregoing case. It would be well to add, that in the case of diphtheria, elements similar to those found in the fæces were found on the false membrane. Dr. Schmidt is strongly inclined to believe that these foreign bodies passed into the system with the drinking water, or during the act of inspiration, but does not believe that they had any bearing upon the pathology of these diseases.

Water taken from swamps in the above named regions, after having been carefully filtered, did not show, with the highest microscopical powers, a trace of vegetable or animal organism; still the drinking of this water produced violent attacks of malarial fever, which tends somewhat to confirm the gaseous nature of the poison, it being held in solution in the water.

It is a well established fact that malarial diseases do not spread by contagion; the poison is not reproduced in the body of a patient suffering with miasmatic fever; there is no soil in the human body favorable to its increase and development. The disease is never introduced into other places by patients who have caught it in a swampy region. A certain degree of temperature seems to be the *conditio sine qua non.* This high temperature, together with the *moisture* of the atmosphere, are, however, in themselves *insufficient* for the production of miasm; but it seems much more probable that these stand in connection with certain processes going on in the ground, and that the saturation of a porous soil, more or less rich in vegetable substances, is the first and foremost condition for the production of the poison. Wherever these relative conditions exist, we may reasonably expect the development of miasm.

A paroxysm may be regulated according to the amount of poison present, according to the susceptibility of the organism, and to the influence of surrounding circumstances, or the infection may pass off without apparent consequences, until some sufficiently *exciting cause* brings on an attack. These slight poisonings bring about a destruction of a part of the colored blood corpuscles, and a change in the vaso-motor system, which only react in the form of a paroxysm of malarial fever, under the influence of an *adequately exciting cause.* The attack is modified in proportion to the diversity of the exciting causes, the character of the prevailing diseases and the constitution of the individual affected. Simple infection by malaria is not always sufficient; the addition of some exciting cause is very frequently needed, which shall disturb the balance of the organism, and call into action the dormant poison. Persons who have apparently been long in perfect health while living in regions affected with malaria, have been attacked on board ship with malarial fever a few hours after leaving port, a slight spell of sea-sickness having preceded the appearance of the fever, acting as a sufficient cause to arouse the slumbering poison.* The

* Jahresbericht, Virchow & Hirsh, 1867, vol. ii., p. 205.

same thing has been observed of persons who have left the miasmatic districts of Central America to all appearances in a sound state of health, and who were taken sick with violent malarial fever on the high, cool and healthy plateaus of the interior, where miasmatic diseases in their endemic form are unknown. In many of these cases a cold ablution, a bad fright, the commencement of menstruation, etc., have been known to bring on a paroxysm of the disease.

Careful observations of the different diseases occurring in those regions where miasmatic fever is endemic, will readily convince one of the fact that a large number of them assume the miasmatic type. I am inclined to believe that in these cases the malaria is *subordinate to the dominant disease*, which here acts as an *exciting cause* to the development of the miasm. By closely inquiring into the details of such cases, we are usually able to recognize to a certain degree the different stages of the disease, their deviations from the typical characters of the dominant malady being easily ascribed to miasmatic influences, without fear of error. Some of them are difficult of recognition, but when this is done they usually readily yield to proper treatment.

In northern climates, where miasmatic diseases are endemic, it is generally during the latter part of the summer and autumn that they prevail. In warmer and more southerly latitudes they are met with more or less throughout the year, but prevail to a greater extent during the seasons just mentioned. There is reason to believe that the miasm which produces such deleterious effects upon the human system contributes to the nourishment of plants.† The vegetation of spring and early summer is adequate to the consumption of all the products of the organic decomposition that may be going on in the soil, including miasmatic exhalations. Towards the close of the season, many plants having run their course begin to decline, and cease to appropriate these products of decomposition, which are exhaled if they do not remain in the soil.

The predisposition to malarial fever is not restricted to any age, sex or constitution, but some races of men living in the tropics, especially the negroes of Africa, seem to enjoy a relative immunity against the disease. This may be accounted for by their having been as a race for many centuries accustomed to the intense heat and deleterious influences of the infecting agent, which renders them

† G. B. Woods' Practice of Medicine, vol. i., p. 156.

much less apt to be affected by it than the white race, with whom a high degree of temperature so easily produces sickness. This, together with the existing predisposition, forms the exciting causes which give rise to repeated attacks of malarial fever.

Of the many characteristic traits of miasmatic diseases, one of the most interesting, and at the same time of the most important, is the extraordinary variety of their manifestations. They not only appear under the most different types, accompanied by the most varying symptoms, but, in addition, they bear the stamp of almost all the various organic affections.

Should we desire to give an explanation of these singular facts, we will readily see that only two hypotheses are possible: 1st, they are either due to a difference in the chemical constitution of the miasm itself; or, 2d, they depend upon other agencies which either influence the organism, or, being situated within the same, give rise to these modifications in the process of the disease, making first this and then that organ the target and centre of the morbid action. Looking upon miasm as being of a permanent and unchangeable character, the first hypothesis is untenable. I would, therefore, be much more inclined to believe that the true cause of the various forms which the miasmatic process assumes is to be sought for in the physiological or morbid relations of the organs affected. It must be admitted that this supposition is not unreasonable, inasmuch as it holds good in all other diseases dependent upon an unfavorable diathesis. Those agents upon which the modifications of the miasmatic process depend are to be looked for, on the one hand, in the atmospheric influences of the particular season of the year; on the other, in the idiosyncrasies of the persons affected, together with the temperament, age, sexual relationship, already existing diatheses, and previous diseases. It is, therefore, not difficult to explain why, during the summer months, under the influence of a high temperature upon the nervous system and digestive apparatus, there should be a prevalence of nervous and gastric fevers, together with a tendency to the bilious remittent, typhoid and choleric forms of the disease, as well as to hemorrhages, diarrhea, and dysentery. It may also may be said of the winter season, that the influence of the low temperature on the organism in general, and upon certain organisms in particular, gives rise to the catarrhal inflammatory forms of the disease. That the modifications of the process should be peculiar to different temperaments, and that persons of different ages should be affected by different forms of the disease, according to the physiological condition of their systems, and their powers of resistance to the action of the poison, does not, upon a due consideration of the subject, seem at all improbable; neither can we deny, that different cachexies or organic disturbances form a weak point of resistance, not only offering a general predisposition to malaria, but producing the cause of certain forms of the miasmatic process. We must, therefore, conclude that each of these peculiarities forms for the poison a special centre of attraction. and in the general shock felt by the system at large, the weak or affected organ will naturally be the one to experience it in its greatest severity.

Considering the different forms of miasmatic fever only as deviations from that type known as intermittent fever, I shall, in describing the symptoms, anatomical changes, and pathology of the disease, confine myself to that form of the process as the representative type of the affection.

The prodromal stage, or that of constitutional disturbance, has no characteristic peculiarities, the endemic and epidemic influences forming our only guide to the difference between it and the prodromal stage of other infectious diseases. This stage is not always present; the paroxysm may be ushered in without previous warning, or the constitutional disturbances may last for several days before the appearance of the fever.

A paroxysm of intermittent fever is divided into three stages, viz.: the chill, or cold stage; the fever, or hot stage; and the sweating stage.

The first indications of the attack are frequently a feeling of languor, weakness, and great faintness, accompanied by yawning, pain in the back or limbs, a feeling of pressure in the epigastric region, headache, loss of appetite, and sometimes nausea. These symptoms are soon followed by a sensation of chilliness, not unfrequently alternating with slight flushes of heat. These cold sensations increasing, the chill soon becomes fully developed, being often severe, and even distressing. The limbs tremble involuntarily, rapid and successive shudders run through the frame, the teeth chatter, the lips quiver, and the respiration becomes irregular and hurried; this latter symptom, together with the quivering of the lips, renders the speech indistinct and interrupted. Vomiting often sets in, especially if the chill comes on after a meal. The pulse, as a general rule, is very frequent, hard and small. There is often thirst, though the tongue is usually pale and soft. The urine is limpid, copious, and of a low specific gravity, but the other secretions are generally scanty. The size of the body is diminished, the features are pale and sunken, the nose pointed, the skin of the hands is shrivelled, the lips and extremities of the fingers and toes look blue, as if exposed to a continued cold, and have little or no feeling. The hair follicles become elevated, and the skin assumes that appearance known as *cutis anserina.* Occasionally a most intense headache, and even convulsions occur; and again, in other cases sudden congestion of one or more of the internal organs takes place, as the liver, lungs, brain, etc.

Physical examination shows, even in this stage, enlargement of the spleen, and sometimes of the liver, by congestion. When the liver is congested the patient suffers severely in the right hypochondrium, but more especially in the epigastric region, just below the ensiform cartilage; this is owing to the pressure upwards of the liver against the diaphragm, preventing the lungs from expanding to their fullest extent, and impeding the respiration.

Congestion of the brain causes drowsiness, which, in some cases, amounts to stupor and coma, and is, at times, even marked by all the symptoms of apoplexy, indicating compression of that organ. It is especially in that form of the disease known as congestive, or pernicious fever that collapse occurs and life is threatened. When this takes place the muscles become perfectly relaxed, the eyes lose their lustre, the temperature of the surface closely approaches that of the surrounding atmosphere, the respiration and the heart's action grow weaker, and the pulse becomes so feeble that it can hardly be felt. There is, however, much difference in its frequency in different cases; for it may either be slow and regular, or quick and hurried, or even intermittent.

The average length of the duration of the cold stage is about one hour, but it varies greatly in different cases, exceeding, at times, not more than a few minutes, and, again, lasting from three to four hours, and even more. It may assume the form of a mere chilly sensation or shudder, or the attack may be ushered in with the manifestations of the worst symptoms of the disease in all of their terror.

The hot stage does not make its appearance suddenly; the chill gradually gives way, being at first only interrupted by occasional sensations of heat, a permanent feeling of warmth only coming on by degrees; eventually all traces of the cold stage disappear, when the patient is affected by a burning heat which, in many cases, becomes almost intolerable. The cutis anserina disappears, the skin becomes distended with blood, and is hot and dry to the touch, the temperature at the surface increases, the lips, toes and fingers lose their cyanotic hue. The cheeks are flushed, the eyes sparkle, the mouth is hot and dry, the tongue is furred, thirst is intense, but there is a want of appetite, and not unfrequently a loathing of food; nausea and vomiting are not of very rare occurrence. If headache existed during the chill, it usually increases during this stage, and is sometimes so intense as to cause the patient great distress, and should it continue to augment in violence, symptoms of cerebral derangement may appear, ranging from a mere wandering of the mind to a wild form of delirium. The pressure on the chest is increased, and though the respiration is somewhat more regular than in the first stage, it is still rapid and irregular. The pulse becomes strong, full and rapid. The enlargement of the spleen continues. As the fever rises the secretions of the various glands are diminished, and the urine becomes scanty and high colored. Constipation is the general but not the invariable rule. The hot stage generally lasts from two to four hours before it commences to abate, but in some cases its duration is even twelve or eighteen hours, or more.

After the fever has abated, perspiration, occupying the third stage, sets in; it is at first moderate, but later very copious. In addition to the perspiratory glands of the skin, which play so prominent a part in this act, other glands, the functions of which were suspended during the fever, now resume them with more than normal activity. The patient feels much relieved as soon as the pent-up secretions begin to flow again. The pulse becomes full, soft and less frequent, while the pressure of the chest having ceased, the respiration again becomes normal. Thirst is not so great, the headache remits, and generally disappears altogether. The temperature gradually falls to its usual standard. Owing to the loss of water by evaporation and sweating, the urine, provided the patient does not replace this loss by drinking freely, becomes concentrated, and is generally of a high specific gravity, dark color, and rich in deposits of urates.

The heavy drain which such an attack usually exerts upon the system leaves the patient in an exhausted condition, but the deep sleep which, as a rule, succeeds the paroxysm, has a tendency, considering the great vehemence of the symptoms, comparatively to restore the equilibrium of the organism.

After the first attacks, although there is no fever, still the apyrexia is rarely pure; the pulse is slow, and the temperature is in many instances low; there is a disturbance of the digestive apparatus, appetite is wanting, and the patient complains of an indistinct feeling of illness. These disturbances eventually subside, so that during the succeeding apyrexias the only symptoms which manifest themselves are the steadily and visibly increasing debility, together with the evident impoverishment of the blood. The apyrexias do not always remain pure in long protracted cases of intermittent fever; under these circumstances the intermittent type not unfrequently approaches, and eventually usually runs into the remittent form of the disease.

It must be admitted that in many cases of miasmatic disease, the congestions occurring in the various organs, are not always necessarily followed by organic changes in the tissues of the congested organs. This only occurs when the change becomes chronic, and the congestion, by repeated attacks, also assumes the chronic form.

The impoverishment of the blood in red blood corpuscles and albumen, resulting from a continued spell of miasmatic fever, may be reasonably attributed to consumption by high fever, together with derangement of the spleen. The anomalies of the blood dependent upon infection with malaria have, so far, escaped detection by microscopical as well as chemical examination.

In the great majority of cases dying in the congestive or pernicious form of the disease, the liver and spleen are more or less congested, the latter being usually enlarged far beyond its normal size, and is not unfrequently even found ruptured. The pulp is of a dark muddy color, soft, so as to be easily torn, and though it does not turn red, yet it assumes a somewhat brighter color when exposed to light. The changes in this organ seem, in the earlier stages of malarial fever, to be nothing more than a simple hyperæmia—that is to say, a heavy congestion of the veins belonging to it; but in continued cases a profuse exudation seems to occur within the parenchyma of the organ, accompanied by a rich deposit of pigment, imparting to it its peculiar dark and muddy color. The capsule is frequently subject to inflammatory action. If the disease should be cut short before it has assumed the chronic form, the spleen, especially under the use of quinia, returns to its normal size in from three days to two weeks; but should the morbid process continue, this organ still enlarges, attaining, at times, an enormous size and weight. The liver is frequently observed to be enlarged, of a dark slate color, and, when cut into, presents a dark, grayish, dirty, chocolate appearance, owing to a large amount of pigment granules, deposited within the hepatic cells, and to the venous blood contained within the congested vessels. Sometimes it has been found of a bronze color, evidently due to an accumulation of bile in the biliary ducts; this last condition of the liver is found especially in those cases where more or less jaundice exists. The gall-bladder is generally found filled with a viscid bile, of very dark green, almost black appearance, and of a granular consistency.

The lungs occasionally give evidence of congestion, but, as a rule, they are found in an apparently healthy condition.

In some cases we find the stomach congested, containing, at times, a blackish substance, composed in great part of degenerated blood, and resembling the black vomit of yellow fever.

Among the anatomical changes presented to us on autopsy in fatal cases of pernicious fever, is the remarkable condition of the brain. A due appreciation of the morbid process in this organ is of the greatest importance, as it alone furnishes the proper explanation of the cerebral disorders accompanying these paroxysms, and furnishes us with some valuable ideas in regard to the treatment of these cases; for it teaches us in what comparatively short a time organic changes will take place in the substance of the brain. The dura mater presents a nearly normal appearance, while the pia mater shows a heavy congestion, its larger vessels are filled with blood, and the microscope discloses the fact that the smaller capillaries are also filled with blood. The gray substance of the cerebrum and cerebellum is usually of a blackish-gray color, and its different layers are difficult to distinguish. This dark ashy color is due, as can be proven by the microscope, to an engorgement of the capillaries with blood of a dark granular appearance. The dirty yellowish color of the white substance of the brain in these cases is due to the same cause.

The increased amount of blood in the brain renders its weight abnormally large. This congestion is ordinarily accompanied by a considerable effusion in the subarachnoid space, not unfrequently attended with an opacity of the arachnoid membrane, and often resulting in an organized blastema in the above mentioned space. The anterior and posterior horns of the lateral ventricles, but especially the posterior ones, are in most cases found filled with an abnormal amount of yellowish-pink serum; the larger vessels of the walls of the lateral and fourth ventricles, like the vessels of the pia mater, give evidence of a heavy congestion.

Whatever be the nature of miasm, it is, according to all appearances, suspended in the surrounding atmosphere, and enters the lungs during the act of inspiration, from whence it passes into the system by being absorbed by the blood, or it may be taken in with the drinking water.

The earliest symptoms of the disease are undoubtedly of a nervous character, but I would not consider them as the result of a direct impression upon the nervous system by the poison, but rather as being accomplished through the medium of the blood; but admitting that the impression is made (in the milder forms of the disease) directly upon the nervous system, we would be obliged to look upon the blood, in these instances, as a mere vehicle for the poison, undergoing no change, but simply carrying the irritating substance from the lungs or alimentary canal to the nerve centres. This view I can hardly consider as tenable; for, although, in many cases, the first attack readily yielding to treatment, passes away without being followed by others, yet I am more inclined to believe that, under such circumstances, however mild the attack may be, the poison undergoes a certain process of transformation before it becomes inimical to the nerve tissue. In these slight manifestations of the disease, the poison has evidently not obtained a sufficient degree of virulence to resist the attempt of nature to repel its assaults, consequently it succumbs, and being eliminated from the organism by the glandular system, and especially by the liver, the physiological functions are reëstablished, and all is well again. When the disease assumes the chronic form, it becomes very apparent that these nervous symptoms are not produced solely by the changes which are brought about in the constituent parts of the blood, causing the poison to act merely as an irritating agent upon the nerve tissue; but many of the phenomena of the disease are due to the impairment and disturbance of the *healthy nutrition* of the nervous system, dependent upon the changes in the normal constituents of the blood, rendering the nervous apparatus incapable of resisting the influence of the poison. The symptoms, as well as the anatomical changes met with in miasmatic diseases, point decidedly to two primary points of attack by the infecting agent, viz., the nervous tissue (especially the ganglionic system), and the blood corpuscles, the first local influences of the foreign agent manifesting themselves by the great tendency to the congestive process.

The anæmic complexion so peculiar and well shown in long continued attacks differs from that of anæmia arising from other causes, by its yellowish or ashy tint, evidently produced by a want of colored blood corpuscles.

In the present deficient state of our knowledge of the causes of fevers it would not be advisable to enter into many theoretical speculations as to the cause of the periodicity of malarial affections. The rhythmical character of the paroxysm can hardly be attributed, as has often been attempted, to a disposition of the nervous apparatus to take on periodical manifestations.* The hypothesis formerly held of a peculiar *materia peccans* periodically appearing in the blood and giving rise to febrile action, and requiring a longer or shorter period for its development, can at present neither be adopted nor entirely rejected. It is certainly more reasonable than the explanation advanced at a more recent date, wherein the rhythm of the paroxysm is said to stand in certain relationship to the daily oscillations of the pulse and bodily temperature. These oscillations, as far as they are not connected with the digestive and nutritious functions, are of a very doubtful character; and we can certainly not attribute the frequently irregular rhythm of the tertian and quartan types to them. The periodicity of the paroxysms may perhaps be due to the fact that the system, after having experienced the shock, makes an effort to free itself of the substance, and succeeds in so far as to obtain a certain degree of rest, lasting for a greater or smaller length of time, until the poison has gathered strength enough to renew the attack. The continued morbid process called forth by the intoxication, gives rise to such disturbances of nutrition, that the nervous apparatus is easily excited to

* Griesinger's Handbuch der speciellen Pathologie und Therapie, vol. ii., Abtheil ii.

abnormal action. In the progress of the disease the apyrexias become shorter in proportion to the ability of the organism to resist the encroachments of the poison. Eventually the disease gradually changes from the intermittent to the remittent type, the fever now being continued; the weak efforts of the organism to repel the enemy being only made apparent by an abatement of the fever, the morbid action beginning again in all its fury after a short respite.

In the stage of constitutional disturbance, the first indications of the disease, such as yawning, stretching, languor, faintness, etc., may be attributed to a general relaxation of the nervous system, due either to insufficient nutrition, or waste of the nerve tissue. This relaxation is felt by the muscular fibres of the blood-vessels, which, wanting the normal stimulus of the nerves, fail to contract with their usual energy, causing a sluggish circulation, and giving rise to these different symptoms; thus the yawning is probably produced by an accumulation of carbonic acid in the lungs, owing to the diminution of speed in the circulation. The pains in the back and limbs may depend on a similar condition of the blood-vessels of the neurilemma of the nerves affected. A congestion of the blood-vessels of the pia-mater may, in many cases, be the cause of the headache, at other times it may be due to a congestion of the blood-vessels of the scalp. The stretching usually accompanying the act of yawning may result from some unequal accumulation of nerve force at the centres, those supplying the extensor muscles receiving a surplus at the expense of the flexors, manifested by the energetic contractions which are induced in the effort of these centres to rid themselves of their burden.

The chill succeeding the prodromal stage may be looked upon as a nervous phenomenon, brought about by an impression made by the poison, especially upon the centres of the vaso-motor nerves supplying the blood-vessels of the skin. These nerves belong to the sympathetic system, being composed, like all other nerves of that system, of three distinct kinds of fibres, viz: sensitive, motor, and inhibitory. The motor fibres, situated in the cerebro-spinal axis, seem to be the first which are affected, producing a continued contraction of the walls of the blood-vessels which they supply. The centres of the inhibitory fibres, situated in the sympathetic ganglia, must be either overbalanced by the amount of nerve force which is carried to the muscles by the motor fibres, or they are paralyzed to a certain extent by the poison. The amount of blood in the blood-vessels becomes diminished in proportion to the contraction of their walls. The result is a reduction of temperature at the surface, by a diminution of a proportional amount of molecular change in these parts.

The severity of the chill depends upon the amount of miasm in the system, and upon the greater or less impression made upon the nervous apparatus. The chattering of the teeth generally observed during the cold stage, is, in all probability, due to an alternate contraction of antagonistic muscles, the result of some defect in the proper performance of the nervous functions.

It is a well established fact that during the chill, and in many instances even during the prodromal stage, an elevation of temperature in the interior of the body takes place. During the cold stage it rises rapidly, and generally reaches its maximum towards the end of this period. When the hot stage commences the temperature in the rectum begins to fall perceptibly, while at the surface it rises, and, finally, as soon as sweating sets in, it falls with rapidity, until, during the apyrexia, it as a rule reaches its normal standard. In some cases it even sinks below the customary point, being most likely the result of anæmia or diminished nutrition.

We may assume with some degree of certainty that the elevation of temperature in the interior of the body is attributable to *retention of heat*, together with augmented process of *chemical decombination*. This theory admits of an easy explanation; for we are aware that no chemical action can take place without the generation of heat, and that the amount of heat produced is in proportion to the amount of molecular change taking place. By many observations it has been satisfactorily demonstrated that during the cold stage, as well as during the fever, a large quantity of carbonic acid over and above the normal quantity is generated; in addition to this, the deposits of urates in the urine are very largely increased, and the albumen of the blood is very perceptibly diminished: these facts together with the general anæmic and wasted appearance of persons suffering from an attack of malarial fever, plainly show an abnormal consumption of the tissues. Furthermore, the blood is driven from the blood-vessels of the surface, and accumulated in those of the interior, and the skin is deprived of its power of regulating the temperature by evaporation, the heat is consequently retained and added to that produced by the augmented chemical decombination going on in the interior of the body. Nature being robbed of one of her most valuable assistants (the skin), makes an effort to rid herself of this unnatural load, by throwing the burden upon the lungs, which being already encroached upon by the pressure upwards against the diaphragm of the enlarged liver, are not adequate to the task, and we have in consequence the rapid and hurried respiration already mentioned in the cold as well as in the hot stage of the paroxysm.

Even when the third, or sweating stage, has set in, we cannot look upon the fall of temperature as a simple result of the regulating action of the skin; for sweating is not always accompanied by a diminution of heat: it is most likely due, in a great measure, to a cessation of those morbid processes in the blood, or in the system at large to which the paroxysm owed its origin.

The disturbances in the circulation during a paroxysm of malarial fever deserve some degree of attention. During the cold stage the heart's action is very feeble, the blood accumulates in the vessels of the venous system, while the arteries are but scantily supplied, owing, probably, to the active contractions of their walls, giving rise to the small, hard, and frequent pulse which we have in the first stage. The venous congestion of the upper and lower extremities, and of the lips, is made apparent by the cyanotic hue of the skin in those parts. This is, in all probability, due to the fact, that the arteries, as above mentioned, are so much contracted during the cold stage as not to allow the full column of blood coming from the heart to pursue its course as it does in the physiological condition of the system; the weak stream pouring through these contracted vessels has not the power sufficient to drive the blood forward, and in consequence, although in ordinary cases no absolute stasis here occurs, still it accumulates in the veins of these parts, imparting to the skin its bluish tint. As a natural consequence of this contraction of the vessels of the arterial system, engorgement of the right heart must take place; this condition is always accompanied by congestion of the pulmonary structure, which also assists in bringing about the rapid respiration mentioned in the preceding pages. In the interior of the body evidences of hemorrhages are not unfrequently met with, being due to the rupture of some vessel, or, in rare cases, to rupture of the spleen itself.

A relaxation of the muscular coat of the arteries takes place during the hot stage: the heart performs its duties with more energy, and the unequal distribution of blood becomes more equalized,the cutis anserina disapears in consequence, and the skin becomes hyperæmic, and even turgescent, the small, hard, and frequent pulse gives way to one that is strong, full, and rapid.

At last, the third, or sweating stage, sets in, accompanied by a full, soft, and less frequent pulse; at this period the functions become gradually more or less reëstablished, so that when the paroxysm is over, the organs seem apparently to have resumed their normal condition.

ARTICLE III. *Yellow Fever Epidemic of Memphis, Tenn., in 1873.* By Y. R. LEMONNIER, M. D., Visiting Surgeon, Charity Hospital, New Orleans.

The first cases of yellow fever that ever came under my observation occurred in 1866, in New Orleans. I was then in the second course of medical studies. In 1867 I went through the epidemic in this city. During that summer, for the first time, I made autopsies of yellow fever cases. Shortly after my return from Europe in 1870, I was called upon to treat the disease. There was at that time a small epidemic in the Second District of this city, near the French Market. Since then I have seen it every year, and this year on an extended scale, at Memphis.

Such is my experience in a disease in which *numerous observations, at different times and places*, are the only means of properly studying it and becoming familiar with its different types. The more we see of this disease the more we desire to see, and the greater we discover our ignorance to be. For it is usually true, that after seeing one epidemic we speak with more confidence and certainty, as it respects our knowledge, than after having seen a dozen. For in the former case we have seen nothing, whilst in the latter we understand the necessity of closely observing and scrutinizing every symptom. To-day our conclusions are different from those of yesterday, as before facts, all theories must crumble to the ground. Often have I found it necessary to change my opinions, and no doubt often again shall I do so in the course of my future career.

In a former paper,* I have given a brief account of the epidemic of Memphis, and specially of its origin. To-day I shall enter more into its particulars.

I.—PATHOLOGY.

Post-mortem made at the City Hospital, Memphis, Tenn., on October 14th, 1873:

Case I—Mike Staid, æt. 26 years; Irishman; laborer. Entered hospital October 13th, 1873. Died October 14th, at 4 a. m. I saw this man when he entered at 9 a. m. His pulse was small, thready, 108; temperature 104.7°. Capillary stasis; tongue coated (dirty yellow) in centre, red at tip and edges. Conjunctivæ yellow. Yellow hue of the whole body. Skin dry. Intellect clear (?). ℞.—Whiskey toddies; blister over abdomen.

He was taken sick Friday, October 10th, with a chill, headache, rachialgia, while 10 miles out in the country (sic). Other accounts which he gives would lead to believe that he has never left the city.

Autopsy.—5.30 hours after death. Corpse of a uniform yellow color; ecchymosis at reclining parts. No bleeding from mouth (gums or tongue), nor nose. Incised muscles of a cherry red, brightening upon exposure to the atmosphere. Blood black, non-coagulable. Conjunctivæ yellow; pupils contracted.

Heart.—Yellowish. Texture does not seem to be softened down; contains non-coagulated black blood. A few ounces of fluid in pericardium.

Lungs.—Healthy.

Bowels.—Of a dark green color; not examined.

Stomach—Contains black vomit. Mucous membrane thickened, yellowish, congested, ecchymotic. No ulcerations; no corrosions. The mucous membrane did not seem softened down. The ecchymotic patches do not disappear by washing, nor by a gentle scraping with the scalpel.

Liver.—About normal size; characteristic yellow color throughout; may be torn to pieces; softened down a little. A few black patches on its inferior surface. Bleeds when cut.

* N O. Medical and Surgical Journal, November, 1873.

Gall-Bladder.—About normal size, containing black-green viscous bile.

The liver, after having been exposed to the air for 3–4 hours, assumes a bright cherry-red color, though retaining in parts its characteristic yellow hue.

Spleen.—Hypertrophied (malarial); about four times the size of one's fist. Consistency, normal. Incisions show a granular surface, with numerous white spots. Its color is dark brown.

Kidneys.—Slightly hypertrophied. Of a yellow color. Do not seem much congested.

Bladder.—Full of urine, which contained albumen and bile, and gave a copious white deposit. Diagnosis—yellow fever.

Case II.—Mike Brennan, 44 years, native of Ireland, admitted October 3d, 1873; died October 14th, at 8 a. m. The man's case had been diagnosed yellow fever. The treatment was expectant in the first stage; alcoholic stimulants and light diet in the second. He was well and going about for two days; had been to town yesterday (October 13th; about three miles march), when he complained of a pain in his left side, for which a blister was applied. Nurse reports that he vomited black fluid shortly before death, but I doubt it.

Autopsy.—October 14th, 2 hours after death.—Corpse of a pale color. Ecchymosis at reclining parts. Conjunctivæ white; pupils dilated. No hemorrhage from mouth, (gums or tongue), but I find some bloody sordes on the lips. Incised muscles of a red color, not brightening to a cherry red on exposure to the atmosphere, as in the preceding case. Blood black, non-coagulable, watery.

Heart.—Of a slate color. Its texture is of a great consistency, in fact, like sole leather. Contains an immense quantity (over a pint) of black, non-coagulated, watery blood in right ventricle and auricle, and a small quantity in left heart. A few drachms of normal fluid in pericardium.

Lungs.—Healthy.

Stomach—Mucous membrane congested, ecchymotic, resting as if on a slate colored back-ground. Does not seem thickened; no ulcerations. No trace of black vomit. The organ was filled with the injected fluids (tea and beef tea). Ecchymotic patches do not disappear by washing nor by a gentle scraping with the scalpel.

Liver.—Hypertrophied, twice the size of one's head, if not more; of a very light slate color. Is of a great consistency, and with difficulty torn to pieces.

Gall-Bladder.—Hypertrophied; contains about four ounces of ochre yellow bile.

Spleen.—Hypertrophied; six times the size of one's fist. Consistency normal. Upon being cut but few white spots on an even surface are to be seen. Chocolate color.

Kidneys.—Congested. Hypertrophied; larger than the fist. Of a slate color, Surfaces of calyces congested and ecchymotic.

Bladder.—Contracted, containing but half an ounce (?) of fluid. (When I reached the hospital drug store, the vial containing the urine had been mislaid, which deprived me of an important chemical analysis.)

All the viscera were of a slate color. *No yellow coloration.* The blood in this post mortem was more fluid than in cases I. and III., and of a blackish hue, whereas in the others it was of a reddish hue.

From the above symptoms my diagnosis is bilious remittent fever.

Case III.—Negro man, Louis White, age 35 years, native of Tennessee. Entered hospital October 12th, 1873; died October 14th, at about 8 a. m. Nothing known of his antecedents. When admitted he was passing blood by his bowels. His wife said he had been passing blood for a week, but this is doubtful. Shortly before death he bled from the mouth. His treatment was: ℞—oil of turpentine ʒij, creosote ♏ vj, tinct. opium ʒij, mucilage, simple syrup, Cinnamon water aa ℥ij ♏. s.: tablespoonful every three hours. Whiskey.

Autopsy.—Three hours after death. This subject was an unmixed negro, a dark griffe, with a woolly head. The characteristic color of yellow fever could be seen through the black pigmentary cells of his epidermis. Conjunctivæ yellow. Pupils dilated. Gums bleeding. Incisions of parieties of thorax and abdomen show the characteristic color of yellow fever, especially in the cellular tissue Incised muscles of a cherry red. Blood black, non-coagulable.

Heart.—Slate colored: contains non-coagulable black blood. Consistency seemed normal. Pericardium contained a few drachms of healthy liquid.

Lungs.—Healthy.

Stomach.—Contains some spumous yellow liquid in small quantity. Mucous membrane thickened, intensely congested and ecchymotic. No ulcerations. Ecchymotic patches do not disappear by washing, nor by a gentle scraping with the scalpel. The organ is of no particular coloration.

Liver.—Hypertrophied. Though cf a light slate color, it is none the less tinged yellow. Consistency, normal. (The contrast between the three livers is very great, as they lay side by side.)

Gall-Bladder.—Small; contains some dark ochre-yellow bile.

Spleen.—Half the size of the fist. Upon being cut, it presents a granular surface, with numerous white spots. Normal consistency.

Kidneys.—Hypertrophied; slate color. By incision, runs out a fluid blood tinged yellow. Surfaces of calyces yellow, congested and ecchymotic.

Bladder.—Contains over half a pint of urine.

Such is the result of three post-mortems, of subjects taken at random. If I have not made more, it was that I did not have the opportunity of so doing. These I think, were the only autopsies made.

The result is sufficient, however, to show that the epidemic was mixed. It is sufficient to compare these visceræ with each other to see the differences which exist between yellow fever and bilious remittent fever. In the visceræ of the negro were marked indications of both diseases, those of yellow fever predominating.

II.—Observatons.

My time was mostly employed in going about with a few physicians and at the hospitals. This only allowed me to take charge of a few patients, 9 in number, of which the results are as follows:

Case 1.—October 17th, 5 p. m., 2d day—Gus. Edwards, Gayoso House; native of Georgia. Had never had yellow fever.

Antecedents.—Was taken sick yesterday morning, early, with severe frontal headache and rachialgia, and pains between the shoulders.

Present State.—Pains of yesterday less intense. Face and eyes flushed. Tongue nearly normal. P. 88, full and strong; T. 38° C., 100.4° F. Bowels operated upon once, the result of a dose of blue mass, which he had taken last night. Treatment—Strict recumbency. ℞—Oxycrate to head.

Third day, 9 a. m.—P. 84, full. T. 37° C., 98.6° F. Tongue reddish at tip and borders, whitish in centre. Headache and rachialgia. Micturition good. Skin perspirable, but perspiration light. Gums slightly red and swollen. Breath offensive. Face and eyes natural. ℞—Mustard foot-bath; oxycrate to head.

5:30 p. m.—P. full, 84. T. 40° C. 104° F. Tongue large, moist and reddish. Headache and pains in back diminished. Skin good. Took some pills (composition unknown).

Fourth day, 7 a. m.—P. 80, large. T. 38.9° C., 102° F. Tongue moist, yellowish in centre, reddish at edges. Headache and rachialgia slight. Gums red and swollen. Face and eyes natural. Secretions of skin and kidneys good. ℞—Oxycrate to head.

6:30 p. m.—P. 72, large. T. 39.3° C., 102.7° F. Tongue same. Burning sensation during micturition.

Fifth day, 7 a. m.—P. 72. T. 38.1° C., 100.5° F. Tongue reddish yellow, large and moist. No more pains. Renal functions good. Face and eyes of a light sub-icteric hue. ℞—Chicken broth.

8 p. m.—P. 78, compressible. T. 39.9° C., 103.8° F.

Sixth day., 8 a. m.—P. 66, slow, large. T. 37.5° C., 99.5° F. Tongue moist and reddish. Face and eyes sub-icteric. Gums swollen, red, with a very slight hemorrhage. ℞—Chicken soup and milk punches. Cautiously increase diet every day, and keep patient in doors for one week.

I left Memphis this day.

Remarks.—Case mild. Treatment expectant. On 3d day sudden rise of temperature, due, no doubt, to his imprudence in taking some pills of an unknown composition. Very slight hemorrhage from gums on 6th day. In spite of the changes of the temperature, the pulse was on the decrease from our first visit to the last. This is peculiar to regular yellow fever cases which recover.

I regret my inability, through unavoidable circumstances, to examine the urine in these cases, both microscopically and chemically.

Case II.—October 17th, 9 p. m., 1st day.—Moses Behr, 32 years, German. Residing at 67 Main street. Had never had yellow fever. Was sick all day with horripilations, and fever since 12 o'clock. Headache and rachialgia. P. 104, full, strong. T. 38.4° C., 101.1° F. Tongue large, moist, and white. Face and conjunctivæ flushed and injected. Has had a mustard foot-bath, and taken a dose of salts. ℞—Keep in bed.

Second day, 9:30 a. m.—P. 88, full, large. T. 38° C., 100.4° F. Tongue as before. Slight pains in head and back. Face and conjunctivæ less flushed. Perspiration. ℞—Warm drinks.

6 p. m.—P. 80, full. T. 38.8° C. 101.8° F. Tongue same. Pains of head and back very slight. Face and eyes good. Bowels operated upon. Urinates and perspires freely. ℞—Same treatment.

Third day, 6:30 a. m.—P. 78. T. 38.5° C., 101.3° F. Tongue as before noted. Excretory functions good. Face and eyes ditto. ℞—1 pint ale.

6 p. m.—P. 68, large, compressible. T. 36.9° C., 98.4° F. Tongue unchanged. Doing well.

Fourth day, morning—P. 68, large, compressible. T. 38.8° C., 101.8° F. Tongue same. Face and excretory functions good.

7 p. m. P. 76, large, compressible. T. 39° C., 102.2° F. Tongue same. Bowels loose. ℞—Gum opium grains v., cacao butter q.s. to make 5 suppositories: one now.

Fifth day, 6:30 a. m.—P. 64, slow, compressible. T. 38° C., 100.4° F. Tongue same. Bowels open once during the night. ℞—Resume use of suppositories, 1 every 4 hours, if diarrhœa continues. ℞—Light diet.

Date of my departure from Memphis.

Remarks.—This case was still lighter. Treatment symptomatic.

Case III.—John Smallwood, age 25, native of Tennessee, residing 42 Madison street. Had never had yellow fever.

(This patient is one of Dr. Otey's, who invited me to see him.)

Antecedents.—Dr. O. reports the patient sick 48 hours, having had fever, which was broken with quinine, when he left his bed without his physician's consent. The fever returned, for which 10 grains each calomel and quinine were yesterday prescribed. To-day he has been taking 2 grain pills of quinine every two hours.

Actual State.—Second day, October 13, 8:30 p. m.—Face flushed. Severe headache, pains in back, knees and left side. P. 96, full. T. 40.2° C., 104.3° F. Tongue large and moist. Thirst great. ℞—Six grains sulph. quinine now, six in morning. ℞—Sponging of whole body, under cover, with oxycrate. ℞—Compresses with the same to the head.

Third day, 8. A.—P. 96, full, large. T. 40.2° C., 104.3° F. Tongue red and dry. Acute headache. Pains in knees. Skin hot and dry. Face and conjunctivæ flushed, with a very light sub-icteric hue. Urinates freely. ℞—Oxycrate to head and for sponging the body. Two grs. quinine every two hours.

8 p. m.—P. 96, full, large. T. 44.4° C., 104.7° F. Headache. Nausea, and efforts to void it. Perspires and urinates freely. Slept well to-day. ℞—Stop pills; mustard foot-baths; oxycrate to head.

Fourth day, 9 a. m.—Very restless all night. No more pains. Face and eyes flushed; sub-icteric hue more marked. Tongue moist, saburral in centre, red at tip and edges. P. large, compressible at 96. T. 39.6° C., 10.32° F. ℞—Two grs. quinine every two hours. Tea as drink.

Evening.—P. 96, large. T. 39.6° C., 103.2° F. Tongue moist, less coated. Pain at epigastrium. Nausea, and efforts to void it. Renal functions good. ℞—Sinapism at epigastrium. Continue pills when not asleep.

Fifth day, morning.—P. 84, large, compressible. T. 39°5 C., 103° 1 F. Tongue very saburral, red at tip and edges. Capillary stasis of face. Eyes less animated. One operation from bowels. ℞—Seidlitz powder No. 1. Lemonade or tea as drink.

Evening.—P. 84, large, full. T. 40.2° C., 104.3° F. Tongue less coated. Feels much easier. Seidlitz powder operated freely. Perspiration and micturition good. ℞—Two grs. quinine every two hours when not asleep.

Sixth day, 8½ a. m—Was troubled all night with a hacking dry cough. Pharynx very red. P. 76, good. T. 39.9° C., 103.8° F. Face and conjunctivæ less flushed. Capillary stasis with light yellowness of face. Tongue saburral, red at its tip and edges. Perspired some. Breath offensive. ℞—Chicken broth; milk punch.

6½ p. m.—But for his throat, would feel very well. P. good at 72. T. 38,2° C., 100.7° F. ℞—Handkerchief around neck.

Seventh day, 8½ a. m.—Slept three (?) hours. Pulse slow.

large, compressible at 70. T. 36.8° C., 98.2° F. Tongue saburral and red; pharyngitis, same. Pains in body, result of coughing; coughed up some blood from pharynx. Yellow-red suffusion of face and conjunctivæ. Passes his water. ℞—Milk punch and light diet.

6½ p. m.—P. full, large, at 76. T. 38.9° C., 102° F. Tongue same. Skin good. Suffers from pharynx. Threw up the milk punch.

Eighth day, 8½ a. m.—P. slow at 60. T. 36.5° C., 97.7° F. Tongue less coated. Suffusion of face, same. Epistaxis during night. Pharynx better. ℞—Chlorate potash (ʒij to ℥vj) gargle. Brandy punches, beef tea and chicken broth. Breath offensive.

7½ p. m.—P. 72, large, compressible. T. 38.5° C., 101.3° F. Bleeds from posterior nares and pharynx (?). Harassing dry cough. Pharynx better. ℞—Continue diet.

Ninth day, 8 a. m.—P. 60, large, compressible. T. 37.2° C., 99° F. Yellow characteristic color. Conjunctivæ still injected. Passive hemorrhage from posterior nares continues. ℞—Twenty drops tinct. ferri chloridi in a teaspoonful fl. ext. of cinchona every four hours. Light diet.

8 p. m.—P. 60, large, weak. T. 37.5° C., 99.5° F. Does well. Took but one dose of the iron and bark, so disagreeable was it. Hemorrhage stopped. ℞—Milk punches and light diet.

Tenth day, 8½ a. m.—Much better. Pulse 60, slow, compressible. T. 35.6° C., 96° F. Convalescent. ℞—Increase diet cautiously.

Remarks.—If the changes of the pulse and temperature in this case be projected on a chart, the first five days will give us the regular course of the pulse and temperature in yellow fever; the last four days will be that of malarial fever. The pharyngitis would account for the sudden rise of the pulse and temperature on the 7th day, but this rise and fall of *both* pulse and temperature also took place on the 8th, 9th and 10th days. In an uncomplicated case of yellow fever, we do not see the pulse, after becoming weak, fall to 70, to become again *full and strong*, with a rise to 78, then a rapid fall to 60, up to 72, etc., with a corresponding fall and rise in the temperature after it has once fallen to 70, with a slow and weak impulse. If it rises again, it is generally very rapid and still weaker, whereas the temperature keeps on rising, or falls abruptly, without influencing the pulse;

and this is generally a fatal symptom. Here, on the contrary, during an exacerbation the patient is excited; during the remission he is much better. Is this not more of the nature of malarial fevers than of typhus icterodus or yellow fever?

Prof. Joseph Jones says (*Boston Medical and Surgical Journal*, August 28th, 1873): "The supervention of an inflammatory disease, or the occurrence of an abscess, or the *access of malarial fever* [italics my own], after the first stage of active febrile excitement, may, in like manner, cause a progressive elevation of temperature, with slight evening exacerbations."

Besides, Dr. Otey treated the patient at first for an intermittent fever which was broken. A relapse is the consequence of an imprudence; the relapse takes the nature of the reigning epidemic, yellow fever, which sets in as an epi-phenomenon, overrules for time being all the other symptoms, and again gives way to the paludal poison. Again, a pain in the splenic region is not usual in yellow fever, whereas it is very common in malarial toxæmias. In the former disease the spleen is healthy; it is congested or hypertrophied in the latter.

What disease in a malarial country will not be complicated with malaria!!

No, this was a case of yellow fever, complicated, as were most cases that I have seen in Memphis, with malarial toxæmia. Quinine was called for, and justly administered by Dr. Otey.

Case. IV.—October 12th, first day, 3 p. m.—James Larkin, 92 Main, 25 years, Texian. Had never had yellow fever. Was taken sick about 2 o'clock, with pains in the head and back, from which he now suffers. Tongue moist and natural. P. 120, full. T. 40.6° C., 105° F. Thirst great. ℞—Purgative cinchona draught oj, (tepid water oj, sulph. magnesia ℥j, fl. ext cinch. ʒj) to be taken in three doses, at fifteen minutes intervals. ℞—Pil. (5 grs.) quinia No. 8.

8 p. m.—No headache. Pains in back slight. Face flushed; slight injection of conjunctivæ. Tongue large, thick, yellowish in centre, moist. Skin hot and dry. Thirst great. P. strong and full at 118. T. 40° C., 104° F. Threw up 6 (?) ounces of liquid after taking last dose of purgative cinchona; the mucus of this liquid was adherent to the bottom of the vessel, and in it were streaks of a well colored blood. (Prognosis unfavorable.) ℞—Two quinine pills at 9 o'clock.

Second day, morning.—Slept some. Stomach quiet. Was purged 5–6 times. Passages liquid, black and offensive. Tongue a little cleaner. Thirst great. P. full, strong at 108. T. 40° C., 104° F. Slight pains in head, back of neck and along spine. Urinates freely. ℞—One quinine pill now, one at noon. ℞—Small pieces of ice to allay thirst. ℞—Oxycrate to head.

Evening.—P. 108 full, strong. T. 39.8° C., 103.6° F. Tongue large, moist, yellowish, Headache. Groans. Purged twice. Threw up a quantity of black fluid (tea?). Face flushed. Skin hot and dry. Micturition good. No pains upon pressure at hepatic and splenic regions. Enlargement of spleen, ℞—Mustard foot-bath. ℞—Three quinine pills now, one in morning.

Third day, morning.—Threw up several times last night some black fluid. (This was *not* black vomit; I have seen the ejections.) Tongue less coated. Thirst great. P. 84 full, strong. T. 39.6° C., 103.2° F. No perspiration. Pains almost gone. Mustard foot-bath relieved head. Bowels moved twice. Micturition good. ℞—Mustard foot-baths p. r. n. ℞—One pill at noon, one to-night.

6 p. m.—P. full and large at 84. T. 40.2° C., 104.3° F. Skin hot and dry. Nausea all day; vomits phlegm. Tongue moist and very dirty. Injection of conjunctivæ increased. Headache. Rachialgia. Urinates freely. ℞—Spir. mind. by teaspoonfulls every three hours. ℞—Sinapism to back, and inf. ext. ℞—Hydrate chloral in 20 grain doses to procure sleep.

Fourth day, 7 a. m.—Patient feels better this morning. Slept 2 hours (?). Face and conjunctivæ less injected. P. 90, large, compressible. T. 40.4° C., 104.7° F. Urinates often, but little at a time. Pain at pubic region. No perspiration. ℞—Spirits mind. ʒj every two hours. Mustard foot-baths p. r. n.

7:30—Sub-delirium. Skin hot and dry. P. 100, full, large. T. 41° C. 105.8° F. Tongue dirty and moist. Nausea and frequent but very scanty ejections of a clear mucus with black streaks (black vomit). Urinates often and little at a time. Complains of a great burning sensation inwardly. ℞—Enema of vinegar and water. Mustard foot-baths p. r. n. ℞—Five grains quinine. ℞—Hyd. Chloral ʒ ss.

Fifth day, 7 a. m.—Spent a better night. Chloral stopped the vomiting and quieted stomach. P. 96, large, compressible. T. 40.3° C., 104.5° F. Tongue clean. Is sub-delirious at times. Complains of prostration. Three passages from bowels. Skin hot and dry; no perspiration. Micturition good. ℞—Quinine 5 grains. ℞—Milk punches No. 3.

6 p. m.—Sub-delirium all day. P. 100, large, compressible. T. 41° C., 105° 8 F. Tongue coated and moist. Skin hot and dry. No perspiration. Urinates freely. Conjunctivæ more injected. ℞—Musk ℈j. Make into six pills; s. one now, one in morning. ℞—Hyd. chloral in ten grain doses to procure sleep. First dose to be taken one hour after the pill.

Sixth day, 9 a. m.—Face of a pale yellow color. Light epistaxis during night. P. 120, small and weak. T. 41.4° C., 106.5° F. Tongue less coated, reddish and sticky. Was more quiet last night. Took but one pill of musk and no chloral. Sub-icteric hue of face and conjunctivæ, with capillary stasis. Semi-comatose all night. White lining of gums. Passed his water in bed. ℞—Ext. beef ʒ j. Water and whiskey aa ℥ j. M. For enema. S. To be given every two hours.

5 p. m.—P. stronger at 120. T. 39° 2 C., 102° 5 F. R. 60, noisy. Tongue, same. Skin less hot and dry. Passes his water in bed. For the first time since he is sick we detect a little perspiration about the face. ℞—Continue enemas and add to each ʒ j fl. ext. cinchona.

Seventh day.—Died quietly at 7:20 a. m. No hemorrhage previous to death. Became quite yellow after death. During the night it rained heavily, weather turning cold at about 6 a. m.

Reflections.—The march of the pulse and temperature in this case was, so far as our present knowledge goes, pathognomonic of yellow fever. Most of the cases that I have seen in which death occurred gave a like outline of the pulse and temperature when projected on the chart—i. e., a rapid rise of the pulse and temperature at the outset; in this case reaching their acme in one or two hours, then both descend slowly, taking from two to four days to reach the normal standard, when, if not sooner, if the case is a fatal one, the pulse will rise again, with more or less rapidity, losing its fullness and force, and becoming more and more weak as it reaches the hour of death, the temperature rising with the pulse until a few hours before death, when it falls abruptly, the divergence between the two becoming sometimes very great. Here, 14 hours before death, it had already fallen 4° F., 2.2° C.

An enlargement of the spleen proves a miasmatic taint.

The cutaneous functions were profoundly interrupted from the commencement, as was evinced by our inability to produce free perspiration, the intense inward heat of which the patient complained being a natural consequence.

Gastric irritability, and also the ataxic symptoms, were readily subdued.

The renal secretion was good throughout. Had this function been disturbed, with such a dryness of the skin as existed, he would have died before the sixth day.

He sank quietly, by the direct sedative action of the poison, during a change in the weather, before completing his sixth day, since he fell sick at 2 p. m., and had black vomit on the 4th day.

Treatment.—Symptomatic. First, thorough cleansing out of the primæ viæ. When called in time, I give preference to the purgative cinchona, for the following reasons: 1st, given tepid it will act as an emetic if the stomach needs it; 2d, as a diaphoretic, as will all warm drinks; 3d, as a purgative; 4th, besides the purging effects of saline cathartics, everyone knows their *diuretic* properties; 5th, the cinchona is a special tonic. Quinine was given with a view to its sedative action, as also its antimalarial properties. Musk acted very well in subduing the ataxic symptoms; and chloral in quieting the stomach. This is the first time I have seen the use of chloral to subdue gastric irritability in yellow fever, and the happy result shall certainly prompt me to try it again.

As soon as the P. became compressible we began stimulating the patient.

Case V.—October 13th, 1873, 9 p. m., 2d. day.—Ann Ryan, 72 Winchester street, 7 years, 9 months. Never had yellow fever. Born in Memphis.

Antecedents.—Was taken sick last night at 9 o'clock, with pains in her head, back, and stomach, and with fever. Was given a dose of castor oil, which purged her well. The fever has not abated since the attack.

Actual State.—Face quite flushed. Conjunctivæ slightly injected. Tongue good, pointed. Urinates. P. full, strong at 144. T. 40.4° C., 104.7° F. ℞—Pilulæ (5grs.) quiniæ No. 12, s. One now, one at 4 a. m. to-morrow.

Third day, morning.—P. 104, full, strong. T. 39.9° C., 103.8° F. Tongue pointed, white and moist. Slept pretty well. Face and conjunctivæ less flushed. Pains across the chest. Skin hot and dry. Bowels moved. Urinary secretion good. ℞—One quinine pill at noon, one to-night.

6:30 p. m.—P. 108, full. T. 40° C., 104° F. Slept some to-day. Skin hot and moist. Thirst great. Threw up her orange leaf tea. Mustard foot-bath. ℞—Large enema and sponging with oxycrate. Spirits mindererus ℥ ss every three hours.

Fourth day, 7 a. m.—P. 104, full. T. 39.5° C., 103.1° F. Face good. Conjunctivæ natural. Tongue pointed, white in centre, red at tip and edges. Pain at precordial region. Urinary secretion good. Forepart of night restless, latter part very good. Slight nausea and efforts to vomit. Thirsty. ℞—Oxycrate for sponging, and to the head. Five grains quinine.

7:20 p. m.—Much better. P. very good at 100. T. 38.2° C., 100.7° F.

Fifth day, 7. a. m.—Passed a very good night. Does very well. P. 100 normal. T. 37.2° C., 99° F. Tongue pointed, yellowish in centre. ℞—Cracker and tea.

6 p. m.—Day good up to noon, when she complained of an acute pain at epigastrium, which was relieved by a mustard plaster. No nausea. Perspires and urinates freely. Complains of looseness of teeth, which is found to be their condition. P. 112, large, compressible. T. 38.2° C., 100.7° F. Face natural. ℞—Chicken broth.

Sixth day, 9 a. m.—Very well. Eyes and face very good. Tongue clean. White lining of gums, with reddish and swollen condition of inferior gums. P. 108, normal. T. 37.5° C., 99.5° F. Urinates freely. ℞—Continue light diet.

6 p. m.—P. 100. T. 37.5° C., 97.7° F.

Seventh day, 10 a. m.—Does very well. P. 108. T. 35.5° C., 95.9° F. ℞—Increase diet cautiously.

Remarks.—The sedative effect of quinine on the pulse is here visible. It was the only drug administered. On the morning of the third day of treatment, fourth of disease, the last dose of quinine (5 grs.) is given. Thirty-six hours after, all kinic effects have disappeared and the pulse ascends from 100 to 112. So far it had been falling steadily. From this time to the end of the treatment slight variations are noticed. This effect of quinine on the pulse has been proven by many experiments, and if all have not agreed, the difference of opinion is due to the fact that all have not experimented in the same manner and under the same circumstances. As a proof of this, I shall state the following experiments made on myself. Experiment 1st.—At 3 p. m. I take 10 grains of quinine, and keep moving about the house, going up and down stairs. About half an hour or more after taking the drug I was nervous and dizzy, so that, trembling like a leaf, I had to sit down to rest, not feeling able to ascend the stairs. After 15 or 20 minutes rest all was over. I did not then notice the effect of the drug on the circulation. The nervous system was principally affected. Experiment 2d.—Upon going to bed at night, on three different occasions, I took first 10 grains, then 15 grains of quinine. *I slept very well.* Next morning (after taking 15 grains) my pulse had fallen about 20 pulsations. By night it had reascended almost to its normal standard--80, to fall again to 50 or 60 after taking another 15 grain dose of quinine at bedtime. Conclusions.—While I was in motion its effect was principally upon the *nervous system;* whereas, if I laid down and kept quiet (slept) it affected the *circulatory system.* These facts are positive, undeniable. Any one can undergo this simple and innocuous experiment for the sake of self assurance. Indeed, it is customary with some practitioners to give small doses of quinine every hour or two *in all fevers*, with the view of bringing down the pulse.

The temperature seemed to have been alike influenced. It was steadily falling, when, with the pulse, 36 hours after stopping the quinine, it ascended 1° C., 1.7° F. It then commenced to fall as low as 35.5° C., 95°9 F., when we saw the patient last.

I go still further, and say that had there been no epidemic of yellow fever in Memphis, or if such a case had occurred any where, where there was at the time no yellow fever, it would not have been diagnosed yellow fever.

The temperature, it will be noticed, fell very low. This, I think will prove to be an interesting point in the differential diagnosis of yellow fever during its convalescence. Dr. Saunders, of Memphis, has noticed this great fall of the temperature, and attaches, very correctly I think, great importance to it.

I will not trouble the readers of the JOURNAL by publishing the other observations, which are very much like the preceding one, Case V., and have been treated alike. Suffice it to say that out of 9 cases I report 8 cured and 1 dead.

The following is the tableau of the pulse and temperature of those cases.

No. of Case.	P. & T.	Day 1 M.	Day 1 E.	Day 2 M.	Day 2 E.	Day 3 M.	Day 3 E.	Day 4 M.	Day 4 E.	Day 5 M.	Day 5 E.	Day 6 M.	Day 6 E.	Day 7 M.	Day 7 E.	Day 8 M.	Day 8 E.	Day 9 M.	Day 9 E.	Day 10 M.	Day 10 E.
1	P.	......	......	......	88°	84°	84°	80°	72°	72°	78°	66°	......	......	......	......	......	......	......	......	
	T.	......	......	......	100 4′	98 6′	104	102 2′	105 8′	100 7′	104	99 6′	......	......	......	......	......	......	......	......	
2	P.	......	104°	88°	80	78	68	68	76	61	......	......	......	......	......	......	......	......	......	......	
	T.	......	101 1′	100 4′	101 8	101 3	98 4′	101 3	102 2	100 4	......	......	......	......	......	......	......	......	......	......	
3	P.	......	......	......	96	96	96	96	96	86	86	76	72°	70°	76°	60°	72°	60°	60°	60°	
	T.	......	......	......	104 3	104 3	101 5	103 2	103 2	103 1	104 3′	103 8	100 7′	98 2′	102	98	101 3	99	99 5′	96	
4	P.	......	120	108	108	84	84	90	100	96	100	120	120	......	......	......	......	......	......	......	
	T.	......	105	104	103 6	103 2	104 3	104 7	105 8	104 7	105 8	106 5	102 5	......	......	......	......	......	......	......	
5	P.	......	......	......	144	120	108	104	100	100	112	108	100	108	......	......	......	......	......	......	
	T.	......	......	......	104 7	103 8	104	103 2	101 1	99	100 7	99 5	97 7	95 9	......	......	......	......	......	......	
6	P.	......	116	100	92	88	88	88	80	76	80	80	72	60	84	......	......	......	......	......	
	T.	......	104	102 7	104 7	100 7	103 6	102 5	103 6	101	99	98	101 1	98	99 5′	......	......	......	......	......	
7	P.	......	......	......	......	96	108	100	84	86	92	90	......	......	......	......	......	......	......	......	
	T.	......	......	......	......	102 2	100 4	101 4	100 5	100	101 3	100 4	......	......	......	......	......	......	......	......	
8	P.	......	......	......	......	......	......	......	......	......	......	......	108	96	92	76	84	68	......	......	
	T.	......	......	......	......	......	......	......	......	......	......	......	100 1	99 1	100 5	98 6′	99 5′	98 6′	......	......	
9	P.	......	......	......	......	......	......	......	96	72	60	60	60	......	......	......	......	......	......	......	
	T.	......	......	......	......	......	......	......	102 2	98 2	100 4	99	......	......	......	......	......	......	......	......	

Case I.—Male; 25 years. Treatment, expectant. Left Memphis on his 6th day of disease.

Case II.—Male; 32 years. Treatment, expectant. Left Memphis on his 5th day of disease.

Case III.—Male; 25 years. Pharyngitis on 7th and 8th day; epistaxis on 8th day. Jaundice commenced on evening of 3d day. Cured.

Case IV.—Male; 25 years. Pulse, after falling, rises until death. Temperature falls, rises and falls abruptly 12 hours before death. Black vomit on 6th day. Pulse 60 on evening of death.

Case V.—Female; 7 years and 9 months. Cured.

Case VI.—Male; 13 years; cured. Sudden rise of pulse and temperature on last day: result of a too hearty meal.

Case VII.—Female; 18 years. Cured.

Case VIII.—Female; 25 years. Cured.

Case IX.—Female; 70 years. Cured. Taken sick with a strong chill, FOLLOWED BY LOSS OF INTELLIGENCE (SIC).

III.—SEMEIOLOGY.

Yellow fever is a disease which, though its nature does not change, is very liable to modifications according to the locality, to different epidemic influences in the same locality, and to the season and climatic conditions during an epidemic. Hence the necessity of seeing several epidemics in different places, before we can consider ourselves as having a somewhat complete knowledge of the nature of the disease (Dutroulau).* Such is the experience of most practitioners, and especially those who have seen the greatest number of epidemics.

Degree of Gravity.—The disease, is divided by some into three stages, by others into two. I side with the latter observers, and like them, look upon the fever as having two distinct stages, with an intermission of apyrexia; this rest may be of but a few hours' duration, or may be absent, the first stage running into the second. We have such an example in case iv., where on the evening of the third day the pulse and temperature after falling, but without reaching the normal standard, rise again until death.

* Vide Dutroulau, "Maladies des Europiens dans le Pays Chauds," 1868, page 386; and also O. Saint-Vel., 'Maladies Intertropicales," 1868, page 301.

My cases may be divided into three classes: 1st class, including those of a very mild type, the patient recovering with little or no treatment; cases i. and ii. are such examples. 2d class--In the 1st class the disease has but one period; in the 2d, with symptoms more intense, we have two periods; the attack is then a complete case of yellow fever: case iii. is an example. 3d class—Here yellow fever shows itself in all its most intense epidemic fury. From its outset the prognesis is very unfavorable. The march of the fever is irregular and rapid, the patient being carried away, in some cases, without having had black vomit, or before turning yellow. After death this last symptom shows itself, and black vomit is found in the stomach. Such was the case in obs. No. iv.

Character of the Epidemic.—What struck us most forcibly in this epidemy was, 1st, the mode of death, which was, with few exceptions, a quiet one, brought on by the direct sedative effect of the poison; and, 2d, the malarial paroxysm complicating most cases, which, indeed, at first led us to believe there was but little yellow fever in Memphis. Some fell sick with an ordinary attack of malarial fever (case iii). The fever was broken, came back, and this time proved itself to be yellow fever. Or else, it will be after the attack of yellow fever that the intermittent fevers will show themselves.

IV.—Symptoms in Particular.

(*A*) *Outbreak.*—The outbreak, as a rule, was sudden, many patients being able to determine the very hour at which they were taken sick. In the serious cases within a few hours the patient was prostrated. Very few at this period were delirious. I have not seen or heard of any cases where the patient while walking, would drop in articulo mortis. Many died after 12, 24, or 36 hours' sickness, before being seen by a physician, and without black vomit or yellowness.

(*B*) *Fever.*—The fever was high when we saw the patient for the first time.

Chill.—Most of the cases were preceded by a chill; others by horripilations. Sometimes (case ix.) the chill was very strong. In the light cases it was often absent. Some complained of having had two or three chills, with marked remissions, for 24–36 hours at the outset.

Perspiration.—As a rule, its absence indicated a most unfavorable prognosis, whereas its abundance was favorable. In some cases it was so profuse as to simulate the critical perspiration of intermittent fevers. But the fact that the temperature was not influenced by this great sudation proved the case not to be one of intermittent fever, the temperatnre increasing or persisting. I have neither seen nor heard of any case recovering when the skin remained hot and dry.

While the majority of cases in which the functions of the skin are good recover, some nevertheless died though sudation was abundant. Perspirations which come and go indicate an unfavorable prognosis. An example of this is found in case iv., on the evening of the 6th day.

"During the second period," says Dutroulau, "after a fall of the temperature, light perspirations will show themselves, which are only aborted efforts at reaction, and which become very serious symptoms if they cool off. As a rule we must beware of these perspirations when they do not agree with a marked amelioration in the other symptoms."*

Temperature.—The temperature in yellow fever is exceedingly important, and should always be closely watched. At the outset it rises rapidly, and will reach its acme in from 1 to 13 hours, perhaps more. Very often in 1 to 2 hours it has reached its highest point, after which it may commence descending, or remain at a standstill for as much as 24 hours before declining. Unlike the ascent, the descent is very slow, taking several days, 3, 4, or 5, to come down to the point from which it had first ascended. If the case is a mild and uncomplicated one, the temperature continues to descend; all is here over, and the patient enters into convalescence. If the case is a serious one, but not fatal, after falling it may rise again, never as a rule reaching the highest point which it had reached at the commencement of the attack, and after a few variations descends to below the normal standard: here commences convalescence. If the case is fatal, the temperature from the start is very high, 40°, 40.6°, 41.1° C., 105°, 106°, 107°, F. It falls some, rises again, sometimes higher than it was at the commencement (c. iv.) and falls abruptly shortly before death. In all cases that recovered the temperature fell far below the normal standard, and it was not until the column of mercury was as low as (on an average) 36° C., 96.8 F., that the

* Loc. cit., p. 398.

patient could be said to be *positively* out of danger. In several cases, after falling as low as 36.6° C., 98° F., it again rose to above 38° C., 100.4° F. Case iii. is an illustration; it falls to 36.5° C., 98° F., rises to 38.5° C., 101.3° F., and finally falls to 35.6° C., 96° F. Often, while to the touch the temperature was normal, the thermometer would show a high fever. Case vi. for 2 days proved the importance of the use of this instrument. The pulse was 88–80. Skin cool and pleasant; but the thermometer placed in the axilla marked 39.2° C., 102.5° F., 39.8° C., 103.6 F.

Pulse.—This epidemic being more or less influenced by malarial toxæmia, the pulse, though not losing its character as peculiar to yellow fever, did not prove itself as good a criterion as it did in other epidemics in which I have observed it. Intermittent fevers which preceded or succeeded the attack would influence it. In one case where the attack of yellow fever was very well marked and uncomplicated, the patient, in full convalescence, with an intense jaundice, had a slow, regular, compressible and large pulse, *below* 60. It will be noticed that this coincided with a well marked jaundice. In icteric diseases, of whatever nature or cause, this phenomenon is common.

The nature of the pulse was full, large and strong at the outset of the attack, losing its force about the 4th day, but retaining its fulness, though weak and slow towards the end.

Like the temperature, it reached its acme in a very short time, 1 or 2 hours after which it would descend, irrespective of the march of the former. In one case they ascended together for 12 hours, when the defervescence *for both* commenced. Such a correlation is unusual in yellow fever, and is only seen in cases complicated with malarial toxæmia. In the pure and uncomplicated cases the pulse, after reaching its acme, descended regularly, but never with the same rapidity with which it ascended. In some cases there would be an exacerbation of a few beats in the evening. In fatal cases the pulse after falling, sometimes quite low (74), would rise rapidly, become miserable as to force, and in some cases thready, imperceptible, at times disappearing at the wrist for 1, 2, or 3 days before death.

The pulse and temperature not only indicate the degree of gravity or mildness of the attack, but again its date and probable termination.

(*C*) *Face.*—In most cases the face was more or less flushed. With others, and these were patients who had suffered with malarial fevers, it was quite pale and anæmic. In none have I seen this excessive redness and puffiness of the face with injection of the eyes, which is so characteristic of the disease, and is by itself, during an epidemy, sufficient to diagnose the malady.

During the 2d stage the face changed, became pale, assuming insensibly a yellow color. When the capillary stasis was intense the yellowness was of a peculiar hue, sui generis, the term red yellow being the most appropriate, though not describing it fully. If the patient died in convulsions or asphyxiated, it became of a leaden hue.

The expression of the eyes particularly struck me in this epidemy. They did not have this brilliancy and *inquisitive look*, as if the patient, however great his confidence in his physician, tries with his eyes to discover his most intimate thoughts (Dr. Alpuente). The injection of the eyes is quite significant; light in mild cases, it may become intense in the fatal ones. This intense injection at the outset is a very unfavorable prognostic. As death approaches, the eyes may become blood-shot. The injection may result in a hemorrhage. After death all traces of injection have disappeared and given place to a yellow coloration of the conjunctivæ.

(*D*) *Pains.*—The most common were the headache and rachialgia. Next those along the spinal muscles and in the extremities, where muscular or articular; they caused the patient to toss about in bed. A few complained of these pains in other portions of the body. They accompanied the fever and were generally absent after the third or fourth day, and sometimes as early as the end of the second day. In a few cases they persisted longer. One complained of them in the globe of the eyes.

The *cephalalgia* was frontal and present in *all* the cases. I have seen none without it, and a few in whom it radiated to other portions of the head. It was acute, intense, with some, mild with others. In fatal cases it would come and go until the end of the attack.

The *rachialgia*, also a symptom of the début, was present in almost all cases. Mild in some, severe in others, it generally disappeared before the headache.

(*E*) *Insomnia—Excitement.*—Generally after the second day, if not before, the patients would have some sleep. The fatal cases were the only ones in which the insomnia was of such a duration as to demand a special treatment.

The *excitement*, mild or absent in light cases, would increase to a sub-acute or acute delirium in serious and fatal cases.

(*F*) *Respiration.*—Except where death occurred it showed no irregularity, being more or less accelerated when the fever was high, and normal in mild cases. As death approached it would increase in rapidity, running as high as 60 or more inspirations to the minute, for several hours before death. It would be either short, prolonged, anxious or so loud as to be heard in the adjoining rooms.

(*G*) *Digestive Functions—Tongue.*—The tongue in this epidemic had no particular shape. It was large, pointed, thick, saburral, moist, bilious, white, dry, red at its tip and edges, with a coated centre, red, dry, cracked, bleeding, etc., with different individuals or the same patient, at different times. One case which attracted my attention in particular, was a boy 12 (?) years old, with a very offensive breath, bleeding from the mouth. The tongue was thick, large, short, thickly coated white, with its papillæ well developed, *bleeding* at its inferior surface. Face pale, no coloration about it or the eyes. Boy sick about a week. This, for us, was certainly not a case of yellow fever.

Nor did the nature of the tongue always correspond to that of the skin. Whilst this was hot and dry, the former would be moist and saburral.

Mouth.—Few complained of a bad taste of the mouth.

A swollen and reddish condition of the gums, precursor of hemorrhages from these parts, only showed itself after the 3d, 4th, 5th or 6th day. In most of these cases the gums were lined at their margin, with a white line. This was easily removed by passing the finger gently over it; in one case this showed very superficial ulcers which bled. This man died. Most of those treated by me had these symptoms, but did not bleed from the gums.

Thirst.—Mild or absent in the light cases, thirst was intense in serious and fatal attacks, much more so than it is in a case of intermittent fever with a high temperature. With a sick stomach it was a very serious symptom, as it was difficult for the patient to satisfy his thirst, without vomiting, which was a more painful symptom. It came with the fever, and was in proportion to the dryness of the skin.

Vomitings.—They were not *very* frequent. Certainly not a characterizing symptom of the epidemy. At the commencement of the attack, the ejections were composed of the matters ingested, solid or liquid. Here the vomitings generally stopped of themselves or gave way to treatment. When they persisted or showed themselves late in the attack, they generally passed into black vomit. All those whom I have seen throwing up black vomit, died. It was in the hospital that I saw the worst cases of vomitings. None of my patients suffered much from pains at the epigastrium; those who did were readily relieved by the local application of a sinapism. Only one treated by me vomited black and died. Ejections which at the start contained pure arterial blood augured bad (Aitken).* Such was the result with my fatal case.

(*H*) *Hemorrhages.*—They were early with some, late with others. Some died on the 3d, 4th, 5th day, having had them; others died bleeding on the 10th, 15th or 20th day. Some bled for several days before death. They were not very common and mostly passive, from the nose, gums, tongue, lips, eyes, stomach, bowels, and genital organs, some bleeding to death. I remember the case of a young girl who was bleeding from the nose for two days. Why the nares were not plugged I cannot tell. Some pregnant women bled to death after parturition.

When leeches were applied, hemorrhages would sometimes take place from their bites, which were with great difficulty stopped, especially when they had been applied to such places as the epigastrium, where compression could not be made. "In very serious cases hemorrhage may be seen on the first day, and almost always from the bites of leeches; in ordinary cases it is from the 4th to the 6th day, and sometimes later." Dutroulau.† I have not seen or heard of any hemorrhages taking place from the denuded surfaces of blisters, which were frequently applied, nor any transudations of blood through the skin (blood sweats).

Sum toto, wherever be the seat of the hemorrhage, it is caused by a depraved condition of the blood. Its only fatal character is that of black vomit. Though it may kill by its abundance, epistaxis, leech-bites (Dutroulau, St. Vel), bloody stools. But little advantage is to be derived from this abundance, as regards

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* Aitken, Amer. edit., 1872, p. 576.

† Loc. cit., p. 408.

the prognosis, for it may be missing in cases which die, and very abundant in cases which recover (Dutroulau).*

(I) Jaundice.—In some cases it was absent, in some well marked, in others it only showed itself after death, "* * * and for my part," says M. Dutroulau, "I would be tempted to deny the existence of yellow fever in a case which, after death, would not have an icteric cellular tissue."

To the presence of the coloring principle of bile in the blood, is due this icteric hue, as proved by the fact that especially the white tissues and the liquids of the interior of the body are tinged yellow; as proved by the reaction of nitric acid on the urine, serum of blood, and the serosity of blisters. In one case at the Walthall Infirmary, the serosity of the blister was of a dark ochre yellow.

For M. Ballot,† who has studied yellow fever in Havana, there would be two kinds of jaundice.

"It is strange," says Griesinger,‡ "that some will yet defend the singular theory which looks upon the yellow coloration of the skin, as the result of an intense hyperæmia." Nor is it necessary for the yellowness of the skin to be true jaundice, that nitric acid should show the presence of bile in the urine. Frerichs§ has proved that with this agent the characteristic color of the bile is not always obtained.

(J) Purple Patches.—These patches, the result of the extravasation of the blood through the cutaneous capillaries, are met with in very serious cases of a long duration, accompanied with symptoms of asphyxia. They are found on the face, neck, arms, upper portion of the thorax, palms of the hands and plantar surface of feet (M. Dutrolau). Such was the case with a patient of Dr. Otey, who for four or five days previous to death was unconscious and pulseless at the wrist, with a leaden hue of the face, cold extremities and a large, *livid*, oval shaped spot almost the size of my hand on the anterior surface of middle third of right arm. This was the only case that I have seen.

* Loc., cit., p. 409.
† Gazette Hebdomadaire, 1858.
‡ Griesinger. Traite des Maladies Infectieuses, Paris, 1868, p. 116.
§ Frerichs on the Liver.

(*K*) *Cerebral Symptoms.*—These were ataxic, adynamic, ataxo adynamic, furious or quiet deliriums, etc. Those that attracted my attention most were the woman above mentioned, who, for four days previous to death, laid on a mattrass on the floor, unconscions, bleeding from the nose and mouth, (gums and tongue?) constantly turning herself, with her basin as a centre of her gyrations. Unfortunately the autopsy could not be made. No doubt a hemorrhage would have been found at the base of the brain. Her respiration during these four days was rapid, loud, over 60. The second was a young man who, after having had a furious delirium for 24 or 36 hours, requiring several persons to hold him in bed, died in a state of exhaustion on the 3d or 4th day of sickness.

The third case was very similar to the second. These three patients died, and in all the temperature, if I am not mistaken, was quite low. My fatal case (obs. iv.) had carphologia and subdelirium, with a high fever. Some died in convulsions. Cases with cerebral symptoms were not numerous.

(*L*) *Urine.*—Suppressions of urine, from what I have seen and heard, were not frequent, unless at the hour of death, which is not peculiar to yellow fever, as it is often met with at this period in different serious affections. I have not seen any. I have heard of but two cases of retention, one seemingly the result of the application of a large blister over the abdomen. The urine was clear, copious or scanty, et vice versa. I am sorry that circumstances were such that I was unable to examine it chemically and microscopically. That, from the autopsy of the white man, dead from yellow fever, contained a large amount of albumen.

(*M*) *Complications.*—They were not numerous. What I have seen or heard of were parotitis pharyngitis, false membrane of the mouth and pharynx, urticaria, and hiccough. Pregnancy was probably the worst of these; many, if not most of the cases, died, some bleeding to death after parturition.

Such were the symptoms of the cases I have seen or treated.

(*To be continued.*)

ARTICLE IV. *Notes on Yellow Fever.* By F. J. B. ROMER, M.D.

It may seem a work of supererogation for the writer of this paper to say anything on *yellow fever*, after the recent publication of essays so learned and so practical by Southern writers. The domain of nature is, however, sufficiently extensive to afford room to all who may desire to till its productive fields, and even though it is not given to any one to reap a full crop, yet all desire some profit. Even if perchance one does not possess the capital to render the culture productive, he is still left the option of gleaning among the stubble of more fortunate cultivators.

The observations recorded in these notes were taken at a period long antecedent to those mentioned in the essays alluded to above, and would have entitled the writer to a claim for priority had they been published in time. The writer is, however, sufficiently rewarded by seeing that the *principles* which have guided him in the treatment of yellow fever, and which he had inferred from observations taken at the bedside, or in the dead-house, are recognized now as the *true principles.* It is happiness enough to know always to have been right, hence, though he has lost the opportunity for priority in original pathological researches, he is quite content to corroborate some of the facts mentioned by more recent observers.

It was the writer's good fortune to be a resident at the Charity Hospital, New Orleans, in the years 1835–6–7, when he enjoyed the opportunity of observing numerous cases of *yellow* and *malarial* fevers. He availed himself largely of his favored position. Either alone, but more frequently under the direction or with the assistance of his lamented friend, the late Dr. John Harrison, he made over two hundred post-mortem examinations of yellow fever subjects.

Since the writer's severance from the above eleemosynary institution, an extensive civil practice, up to and including 1858, has supplied him with additional facts no less interesting than those of former years.

At the time the earlier notes were taken Broussais' physiological school was decidedly in the ascendant. Yellow fever was then by many looked upon as merely a cephalo-gastritis, or else a gastro-hepatitis, and its treatment was in exact accordance with these pathological notions. There existed then, however, also another class of physicians, who from theoretical considerations, or, more frequently, because of the ill success which attended them, rejected the *dicta* of this popular school. These physicians, like many even in our day, considered *yellow fever* simply as an aggravated form of *malarial* fever.

Being daily witnesses of the unsuccessful termination of cases treated according to either one or the other of the two mentioned theories, in a ratio fearful to contemplate when compared with the recoveries, the medical staff of the aforesaid hospital were stimulated to make personal observations, in the endeavor to gain a better and more correct knowledge of the pathology of this fever, so as to devise, if possible, a more successful treatment.

Besides notes taken at the bedside, when a case ended fatally, the body was followed to the dead-house, where the morbid alterations of organs were carefully registered.

In the wards of Drs. Harrison and McKee, the writer made, with the former most excellent physician, a number of carefully conducted observations.

The result was, they became early convinced that *yellow fever* was a specific affection, hence, of quite a different type from *malarial fever*. The former being decidedly of a *continued*, while the latter was eminently of a paroxysmal type. They also observed that though the first stage of yellow fever might apparently be more or less of a *sthenic form*, yet this condition is truly transitory, and is soon followed by an opposite state, in which all the danger lay.

General blood-letting they found to be ever a dangerous expedient. Even local bleedings, when they were judged necessary, had to be employed at the very beginning of the fever. Purgatives, unless administered early in the first stage, invariably did harm; while mercury, unless administered in a purgative dose at the inception of the fever, accelerated the fatal termination.

These clinical facts were far from upholding Broussais' inflammatory theory; they did not countenance the idea that yellow fever could be resolved into a gastritis.

It is thus seen, that our clinical observations were inimical to both the prevalent theories. We could neither subscribe to the doctrine that all fevers were merely symptoms of inflammations, nor accept the other which formulated that yellow fever was simply a form or a variety of malarial fever. Daily well observed facts contradicted both these assertions.

On the other hand, our numerous post mortem investigations corroborated in every particular our clinical observations, and they gave us, moreover, a reason for many facts hitherto inexplicable.

The notes which the writer yet possesses of them are short, but nevertheless significant; they are reproduced in their original form. From the phraseology employed, the reader will readily perceive that we waged war on Broussais.

Brain, normal; membranes the same. In about one third of subjects a slight injection of the pia mater, or else a yellowish discoloration. Occasionally a turgescence of the sinuses. Neither softening of the substance proper of the brain, nor thickening of the membranes was ever noticed.

On chiselling open the spinal canal we never could discover any remains of a previous inflammatory process.

The *lungs* were always more or less congested, but we never observed hepatization nor pus in their substance.

The texture of the *heart* was generally *softened*, easily crushed, but no thickening of the pericardium nor exudation of lymph was ever seen.

The mucous membrane of the stomach was pale, except on its greater curvature, where occasionally red patches were found, due, probably, to post mortem alterations. The mucous coat of the intestines was in a similar condition. They were both, however, found frequently softened.

The spleen was generally pultaceous, though not sensibly enlarged.

The liver was sometimes congested, but oftener of a pale olive tint, now and then streaked with greenish bands, oftener still it had undergone a fatty degeneration.

The gall-bladder was generally empty, or contained but a small quantity of inspissated bile. The vena porta was always engorged.

The kidneys were always more or less congested, and their texture considerably softened.

The blood was in every case altered, and the alteration was in an exact ratio to the duration or intensity of the fever, and this alteration was evidenced by the loss of the property of coagulating.

It is well known that yellow fever patients frequently suffer excruciating pains in voluntary muscles, more particularly so in the gastrocnemii; when examined after death, muscles in which such pain existed during life were found softened, easily crushed between the fingers.

The foregoing post-mortem revelations, although incomplete, yet, when combined with our previous clinical observations, forced the conviction on our minds that *yellow fever* could only be due to a *poisoning* of the blood. Then when we furthermore reflected on the rapidity with which organs became altered in their texture, unfitting them for their allotted functions in the organism, we could readily account for the gravity of the disease, as well as of the danger incurred by relying on a perturbating treatment.

The practical inferences which naturally suggested themselves were: 1st—That as yellow fever was a disease of limited duration, cinchona or its salts were uncalled for. 2d—That the fatal issue of cases was due either to congestions of the liver or kidneys, preventing these organs from separating or eliminating the effete or noxious substances retained in the blood, or to anæmia. 3d—Hence, the office of the physician limited itself in moderating the fever, in guarding against congestions, and in supporting the strength of the patient.

The epidemics of 1853, 4 and 5, afforded the writer renewed occasions to extend his knowledge on the pathology of yellow fever, by permitting him to study the physical and chemical characters (to a limited extent) of the blood and of some of the secretions and excretions.

These observations show, that the blood corpuscles become gradually of a darker hue, as the fever progresses. From the second to the third day, in severe cases, they became shrivelled, presenting irregular edges under the field of the microscope, a fact perhaps due to a higher density of the liquor sanguinis, from retention therein of an excess of salts and other matters.

Toward the fifth day, many corpuscles appeared to have been decomposed; their remains presented a jagged and shreddy appearance.

Hemorrhagic blood collected just before death, and submitted to immediate microscopical examination, exhibited this morbid alteration in its fullest extent. There remained but few if any corpuscles which could be said to have escaped the toxic influence; all were either dark, collapsed, ruptured or decomposed. Concurrently with the change in, or destruction of the corpuscles, there is a corresponding diminution of fibrine in the blood.

Black vomit was found to consist, besides altered blood and some acids, of mucous, of a large number of epithelial cells from the stomach, of torulæ and sarcinæ, and of masses of irregularly shaped aggregations of granules.

The saliva, at first alkaline, becomes acid in the latter stage of fatal cases.

The sweat is always acid. It gets tinged with bile generally from the fifth to sixth day; it then also contains a notable quantity of oil globules.

The urine is in the first stage of the fever very rich in urea; as this wears off, it becomes albuminous; subsequently it contains bile pigment, and finally in severe cases torulæ and epithelial cells of the bladder and kidneys are found. Towards the termination of fatal cases, the urine becomes alkaline; free ammonia exists therein, as also casts of tubuli uriniferi, and shreds of the vesical mucous membrane.

The fibres of voluntary muscles in which pain existed during life have their striæ obscured, while those taken from the heart show an unequivocal passage from the *striated* to a *non*-striated or *granular* form.

Prof. Joseph Jones, in his most valuable observations upon the treatment of yellow fever, mentions *oil* and *granular* albuminoid or fibroid matter, as being deposited within and around the muscular fibrillæ of the heart.

I will not permit myself to call in question the accuracy of the learned professor's observation; still, I cannot help thinking that the *disintegration* of the muscular fibrillæ into a granular mass, such as my own repeated observations invariably showed, has probably been mistaken by this excellent observer for a deposition of albuminoid matter.

When it is called to mind that the tendency of the *toxic* agent of yellow fever consists in the ultimate destruction of organic principles, evidenced in the case of fibrine by its loss of coagulability towards the end of fatal cases, it is difficult to conceive how a deposition of albuminoid or fibroid matter is possible under such circumstances. As was well remarked by Prof. Gilmore, of Mobile, all blood poisons act somewhat similarly; they all modify the composition of the blood, and they also endanger life, by producing alterations in organs incompatible with the healthy performance of their several functions. But while in the exanthemata the virus exhausts itself on the skin, or involves besides sometimes the mucous coat of the alimentary canal, or air passages, or, as in scarlet fever, fastens on the serous membranes of the joints and abdomen. In yellow fever, on the contrary, the poison spends its virulence on the blood, for the alterations observed in organs are simply retrogressive metamorphoses of tissues, such as take place when life is extinct.

I cannot close this paper without thanking Dr. J. C. Faget, of New Orleans, in the name of the medical profession, for the publication of his truly classical essay on the thermometric discrimination of yellow fever.

It is no doubt due to the indefatigable industry of this gentleman that we are now enabled to prove, with quasi mathematical accuracy, the *specific character* of yellow fever. With watch in one hand and a thermometer in the other, its differentiation from pernicious or malignant paludal fever is demonstrable without the possibility of cavil or doubt.

Thus, little by little the vail is lifted, and the fell destroyer of tropical and semi-tropical America is made to reveal gradually his hideous features. It has been said an enemy is half vanquished when known. And is it not so? Has not the treatment become more logical, more intelligent? Such, then, being the result already obtained, what may not be hoped from the future?

With the impulse already imparted, can we doubt but that hosts of ardent explorers will enter this fruitful field of inquiry. Chemistry and microscopy must decide the contest. Let Mr. Pasteur's beautiful researches on spontaneous generation be taken as patterns.

As the poison of yellow fever must be a material agent, this agent, however tenacious, is still *matter*, is still ponderable, and must perforce reveal itself to the persevering and well directed efforts of either the chemist or microscopist, or of both.

OAKHILL, NEAR MOBILE, Nov. 1st, 1873.

ARTICLE V. *Quarantine without Obstruction to Commerce.* By ALFRED W. PERRY, of New Orleans. Read before the American Public Health Association.

The following paper on "Quarantine Without Obstruction to Commerce," prepared by Alfred W. Perry, of New Orleans, was read: The desire to exclude epidemic disease seems to be universal among all civilized and half civilized people, but unfortunately the means used have not been adopted on scientific foundation, and have proved so burdensome to commerce, and at the same time so inefficient in their results in excluding disease, that they have been time and again adopted and abandoned. Quarantine has been enforced and abandoned already two or three times at New York, Philadelphia, and New Orleans. These vacillations have depended on the changing theory of the spread and development of epidemic diseases, and ideas of business expediency. A large number of diseases have been supposed to be caused by germs diffused in the air, or upon some so-called epidemic constitution of the air, or to be spontaneously generated. The modern investigation and observation of diseases which become epidemic has continually diminished the number of those diseases which were supposed to spread by atmospheric diffusion over long distances, or which are caused by some peculiar condition of the air, and has rendered it almost certain that all epidemic diseases spread only by solid disease germs which must be carried from place to place by human intercourse. Not long ago it was the general opinion that cholera poison was in the air, and it followed, of course, that a quarantine against the disease was perfectly useless. It is almost needless to say that this idea in regard to cholera has been thoroughly disproved; the conclusions of the Cholera Congress, held at Constantinople, were that cholera depends on a solid living germ, and that it is invariably propagated by human intercourse. The theory has been advanced in regard to yellow fever that it depended on some contamination of the air. This, of course, soon met with the objection that yellow fever does not appear suddenly to spread all over a city, which it should do if the poison was in the air, because each individual is exposed at the same time to the same influence. But it commences in one locality and spreads gradually, though sometimes irregularly through a whole city.

These obstinate facts required a modification of the general air contamination theory. The idea was then advanced that the air which was poisoned by yellow fever formed an upper layer in the atmosphere, and when thrown into waves the lowest point of the wave touched the earth and produced yellow fever where it struck. The steady progress of the disease from a focus which has frequently been accurately measured in feet per day, and the successive sickening of persons visiting or working in an infected locality have pretty well broken up in the medical profession these theories.

THEORIES IN REFERENCE TO THE PROPAGATION OF DISEASE.

These theories are the common resorts of persons who are too lazy to trace the slow personal communication of disease. The solid germs in the case of yellow fever have not indeed been demonstrated, but the close analogy between yellow fever, small-pox, measles and scarlet fever, renders it beyond a doubt true that they do exist. The germ theory applied to yellow fever is the only one that will fully explain and make agree the hitherto apparently contradictory facts which have been observed in regard to the disease. The spontaneous generation of yellow fever in New Orleans has been deduced from the frequent cases in which it has occurred, in which there seemed to be no possibility of its importation; these have been too numerous to be denied, but they have been evaded by the invention of paludal or malarial yellow fever, to which all indigenous cases are said to belong. The yellow fever germ may be compared to the cotton-worm eggs. The cotton-worm was unknown in this country thirty five years ago, and must have been imported from some foreign country, as many other insects destructive to vegetation are known to have been. The severity of our weather in winter destroys all but a very few; perhaps not more than one out of a hundred millions survives until the next season—those which are hid away in warm, sheltered places. These increase during the first warm, moist weather, requiring weeks or months before they have become numerous enough even to be noticed. The importation of the eggs of the cotton-worm in May or June would cause earlier increase, and therefore greater ravages.

FEVER GERM.

The yellow fever germ is an exceedingly tender organism of foreign origin, not developing below 70° Fahrenheit, and killed by a temperature of 32°. Out of millions of disease germs which exist at the close of an epidemic, only a few survive some of our winters, and give rise to the cases of domestic, or indigenous yellow fever, the next season. In some winters all the disease germs are destroyed, and there are no domestic cases of yellow fever the next summer, or perhaps for several summers, until the germs are again imported. If some germs remain over from a previous summer, then the fever should occupy about the same neighborhoods for several successive years, which it has actually done in the Fourth District of this city (New Orleans) for the past three years. The fact of the indigenous growth of yellow fever does not prevent the importation, or render useless a quarantine. The foreign yellow fever must be kept out, and the domestic destroyed or delayed by disinfection. It has been found by past experience that yellow fever does not develop into an epidemic here in less than fifty to sixty days. Indigenous cases rarely occur before August 1st, and this is so late that an epidemic cannot follow. No epidemic has ever followed in this city when the first case has been as late as August 1st. Most, if not all of our epidemics of yellow fever have resulted from the importation of foreign yellow fever in May or June. If quarantine does nothing more than to prevent the importation of the foreign disease, it is worth far more than its actual cost to the State. The demonstration that disease germs are solid bodies makes it logically possible to exclude foreign epidemic disease by absolute non-intercourse, or by destroying the disease germs in transit. The first is not to be entertained for a moment, and the second has hitherto signally failed. Both cholera and yellow fever have been imported scores of times in New York, Philadelphia, and New Orleans, through a so-called strict quarantine. All these failures have occurred because the quarantine was not based on sound principles.

The following are instances in which yellow fever has been brought through a strict quarantine:

1871—To New York, by steamship Cleopatra.
1859—To New Orleans, by brig Elizabeth Ellen.
July, 1862—To New Orleans, from Key West.
September, 1862—New Orleans, from Nassau.
1871—To New Orleans, by brig Mary Pratt, from Cuba.
1873—To New Orleans, by bark Valparaiso, from Cuba.

1873—To Pensacola, by ship Golden Dream, from Cuba. Kept twenty-one days at quarantine.

1870—To New Orleans, by steamship Agnes, from Honduras.

The principle has been that vessels infected with any disease would be spontaneously purified by remaining a time varying from ten to forty days at detention. No doubt that most infections lose vitality after a time, but to depend upon time as a purifier we should take the longest time that any disease has been known to remain latent on a vessel as a basis. Many vessels have been known to carry yellow fever poison across the Atlantic to France, England, and Spain during voyages of from forty to fifty days.

The following facts show a number of instances in which the yellow fever germ has preserved its vitality during a time of forty days or more:

Brig Alderman Pirree brought yellow fever germs from Cuba to Swansea, Wales, after a passage of forty days, in July, 1843.

Brig Henrietta brought yellow fever to Swansea, Wales, from Cuba, after a voyage of forty-five days, in August, 1851.

Brig Aime Marie brought yellow fever from Cuba to St. Nazaire, France, after a voyage of forty-two days, in June, 1861.

Brig Maugosteen brought yellow fever from Cuba to Swansea, Wales, in 1864, after a voyage of forty days.

In the above cases no persons were sick on board of the vessels when they arrived, but yellow fever, immediately after the vessels arrived, attacked persons who visited or who were employed in discharging these vessels.

The vessels should then be detained longer than fifty days which arrive from yellow fever-infected ports, to be secure, if we depend on simple detention.

THE TIME VESSELS ARE DETAINED.

I think that time as an element in quarantine is the least to be depended on, the most oppressive to commerce, the most costly, and at the same time the least effective. There is at most quarantines a nominal disinfection of infected ships. This consists in pouring into the bilge water a few pounds of chloride of lime or carbolic acid, and sometimes, though rarely, opening the hatches and putting small quantities of disinfectants on the cargo immediately underneath. The disease germs may occupy any part of the vessel or cargo, and to be effective the disinfectant should reach every part of the vessel, every crevice in the cargo. This can only be done in a cheap, quick, and thorough manner by the use of gaseous or volatile disinfectants applied by a special apparatus which I will describe. This method will perfectly destroy all disease germs, and can be performed in four to six hours, and will detain infected vessels less than one day.

A NEW METHOD OF DISINFECTING.

The apparatus consists of one or more force-blowing machines, put in motion by steam power, which are connected with a furnace for generating sulphurous acid gas, with an apparatus for impregnating air with carbolic acid vapor, and with a furnace for producing heated air. By the action of the blowing machines, air, which has been charged with one of these disinfectants, is forced through flexible pipes into every compartment of the vessel to be disinfected, until it is filled with a saturated atmosphere. All the apparatus is to be placed on a small steam tug, which will be moored alongside of the vessel to be disinfected. The air forced into the hold is diffused everywhere, and penetrates every crack and crevice by virtue of its elasticity and diffusiveness. This diffusive power of gases is shown by an experiment of Berthollet, performed at the Paris Observatory. He took two glass globes, provided with stop-cocks, and filled one with carbonic acid gas, and the other with hydrogen gas; he then connected them by the stop-cocks, and opened the stop-cocks so that the two globes communicated with each other by an opening one-eighth of an inch in diameter. The globes were placed so that the one containing the light hydrogen was on top, and the globe containing the heavy carbonic acid gas underneath; now, as carbonic acid is twenty-two times heavier than hydrogen, if the gases obeyed the usual law of gravitation, the carbonic acid should remain in the lower globe and the hydrogen in the upper; but this was not so; for, after a few hours rest, Berthollet examined the contents of the globes and found that they consisted of a uniform mixture of the two gases; that is, one half of the heavy carbonic acid had risen to the upper globe, and one half of the light hydrogen had fallen to the lower globe.

Most iron steam vessels are provided with a system of pipes which lead from the engine-room to every part of the vessel, and which are intended to distribute steam in case of a fire among the cargo. Through these pipes any gaseous disinfectant can be distributed by connecting with the pipes of the disinfecting vessel. In disinfecting sailing vessels small holes (about three inches in diameter) can be made in the sides. The disinfecting gas must vary with the cargo and with the disease. For disinfecting clothes, heated air of the temperature of 212° Fahrenheit should be used. For disinfecting the hold of a sugar or coffee laden vessel, sulphurous acid should be used.

This method of disinfection, although originally designed for yellow fever, is equally applicable to cholera, small pox, or typhus fever, or any communicable disease. The cost of the apparatus would not exceed $3,000 or $4,000. It could be placed either on a wharf, to which vessels to be disinfected could be towed, or it could be placed on a small steamboat. The cost of disinfecting materials for a vessel would vary from $5 to $50. This cost is trifling compared with the cost of detention to vessels, as will be seen by the accompanying table, which gives the direct cost of detention to vessels at the New Orleans Quarantine. The indirect losses to commerce by the restrictions of quarantine, which drive trade to other ports, are incalculable. During the quarantine season at New Orleans, from June 15th to October 15th, there arrived from ports against which quarantine was declared sixty-four vessels.

Number of steamers arrived from quarantine ports	18
Number of steamers detained at quarantine station	15
Number of steamers not detained	3
Average detention of steamships, days	5
Number of sailing vessels detained at quarantine	28
Number of sailing vessels not detained at quarantine	16
Average detention of sailing vessels, days	4
Cost of the detention to 15 steamships, estimated at their daily average gross earnings, less the cost of fuel	$26,134
Interest on the value of the cargoes of these steamers during detention	1,200
Cost of the detention to 28 sailing vessels	10,352
Interest on their cargoes	304
Total	$38,990

CLINICAL—CHARITY HOSPITAL REPORTS.

Clinical Reports on Cerebro-Spinal Fever, and Hemorrhagic Malarial Fever. By L. S. McMurtry, M.D., Chief of Clinic to Chair of Practice of Medicine, Medical Department, University of Louisiana, New Orleans.

Of the various epidemic diseases which have prevailed in the United States during the past year, there is perhaps none more obscure in many respects, and deserving more careful investigation, than cerebro-spinal fever, also termed spotted fever, tetanoid fever, and cerebro-spinal meningitis. Histories of various epidemics, numerous monographs, and many reports of cases, have appeared from time to time; and since the recent widespread epidemic in this country, numerous contributions have been made to the literature of the subject. But the diverse opinions expressed in regard to the etiology of the disease, the discussions in regard to its pathology, and the various plans of treatment advocated by many eminent practitioners, all testify to the obscurity which yet exists in regard to this terribly fatal malady. The two following cases are added to the numerous reports which have recently appeared in medical periodicals, with the hope that they may be of interest to those who have observed or investigated this disease. The cases were under the care of Prof. S. M. Bemiss, M.D., in the Charity Hospital of this city, while the disease was epidemic in the North and West.

Special interest was elicited by the fact that both subjects were of the same age, both entered the house at almost the same time, from opposite directions, both received the same course of treatment, and both recovered—one with impaired hearing, the other with slight strabismus and diplopia.

To the reports of these cases we add the clinical notes of a case of malarial hæmaturia, recently admitted to the Charity Hospital, which may probably contain some features of interest.

Case No. I.—John Tompkins, white, æt. 16, was admitted to ward 20, Charity Hospital, December 25th, 1872. Stated on admission that he had arrived in the city on the day previous from Minnesota; that he had received no injury of any kind, but had been exposed to an intense degree of cold on the boat during the trip. No history of malarial poisoning. States that he was taken sick two days previous to admission, and experienced a heavy chill and intense pain in the head, back and thighs. On examination, patient complains of intense pain in the head, is stupid, neck rather rigid, head slightly drawn back; lies on the right side and complains of aggravation of pain when moved. Bowels constipated; pulse full and strong; no disturbance of vision; pupils respond to light. Ordered the following: ℞—Pil. catharticæ comp. (U. S. D.) *No.* ij. Sig. To be given at once. Also: ℞—Quiniæ sulph. grs. xij., Ft. cht. No. iv., S. One every four hours. Also a hot foot-bath at once.

December 26th.—Patient remains in the same position, with rigid neck, and head drawn backward; was delirious during the night; complains of some pain in head, back, and down the thighs; hyperesthesia of entire surface of body; pupils respond feebly to light; only a loud tone of voice can be heard. No action from the bowels: tongue heavily coated. Ordered a clyster of castor oil and turpentine to be given at once. Also a blister (2x4) to be placed over the nucha. Also: ℞—Pulv. ipecac comp., grs. vij., Ft. cht. No. j. S. To be given at night

December 27th.—General condition same as on yesterday; free motion of bowels this morning; appetite good. No vomiting has occurred; no petechial spots found on inspection; stupor; occasional muttering while asleep; pupils normal; no disturbance of vision; only loudest tones of voice detected now; opisthotonos marked this morning. Ordered pulv. Doveri as on yesterday.

December 28th.—No change in condition of patient. Ordered pulv. Doveri again at night. Careful nourishment.

December 29th —General condition about the same. Patient retains his position, with head drawn back; complains of intense pain on any attempt to move him; is entirely deaf; stupor continues; intense pain on pressure along the spine; takes nourishment readily. Ordered: ℞—Pulv. Doveri ℈j., Ft. cht. No. iv. Sig. One every 4 hours. Beef tea during the day.

December 30th and 31st.—No change observed; treatment continued.

January 1st.—Patient remaining in about the same condition, the following prescription was ordered: ℞—Potassii brom. ℈iv., potassii iodid. ℈ij., inf. ergot f℥iv., ℳ et sig. A tablespoonful every 4 hours.

During the next six days patient remained in this condition, with very slight change on the evening of the sixth day, when there was some evidence of improvement. During this time he complained of pain in the head, back and thighs, and there was marked hyperesthesia of the surface of the body. Lying upon the right side, he could only with great difficulty be induced to change his position. The temperature continued high, running up several degrees in the evening. Pulse rapid and feeble, and deafness remained. Food was readily taken, and neither nausea or vomiting occurred. The above prescription was continued, with concentrated nourishment given in small quantity very frequently; small blisters to the nucha, and an injection occasionally to clear out the bowels.

January 7th.—Patient not so stupid this morning; expression of countenance better; pulse rapid and full; temperature remains high. Same prescription continued, except that infusion of digitalis is substituted for infusion of ergot.

January 9th.—General appearance of patient indicates improvement. Has rested well for several nights past. No complaint of muscular pains; refers pain to the occiput; muscles of neck not so rigid; deafness continues; pupils respond feebly to light. No petechial spots have been observed. Same prescription repeated, except that inf. gentian is substituted for inf. digitalis.

January 11th.—Patient continues to improve; countenance brighter; but slight rigidity of neck; moves about in bed voluntarily. No change of treatment.

January 12th.—Marked improvement. Bowels moved this morning in response to a saline purgative; some pain referred to the occiput; deafness continues. Present prescription discontinued, and instead the following is ordered: ℞—Tinct. cinchonæ comp. ℥iv. Sig. A desertspoonful three times daily.

January 15th.—Convalescence fully established. From this time patient continued to improve daily, but was slow in regaining his strength, and for some time had a very blank and foolish aspect of countenance. At the time of his discharge from the hospital, February 5th, he had lost the hearing of one ear entirely, but could hear with the other when spoken to in a loud tone of voice.

Table of Temperature and Pulse.

Case No. I.

Day of Month.	Temperature.		Pulse.		Day of Disease.
	M.	E.	M.	E.	
Dec'r. 25	101°	101.8°	88	100	3
26	99	103.2	62	69	4
27	102.2	101.5	82	92	5
28	99.8	102.2	101	104	5
29	101.5	102.8	105	102	6
30	103	103.7	102	96	7
31	102.8	103.4	104	108	8
Jan'y 1	103	102.8	104	106	9
2	102	103.8	108	104	10
3	101.8	102.6	94	98	11
4	101	104	108	104	12
5	101	104.4	94	96	13
6	101	103.5	110	108	14
7	102	103	98	90	15
8	100.4	99.8	96	98	16
9	101.2	99	94	86	17
10	98.8	103	102	118	18
11	101	98	100	92	19
12	98.8	99	82	84	20
13	98.5	98 8	82	82	21
14	98.5	98.6	80	78	22

Case No. II.—Thos. Cahill, white, æt. 16, was admitted to ward 21, Charity Hospital, December 26th, 1872. Patient states that his health has been uniformly good until present attack, with the exception of an attack of intermittent fever three years since. States that he has been working on a vessel out on the gulf, and was exposed to cold and the rains. Complains of intense pain in the head; refers it to the occiput; no other complaint. Ordered the haustus quiniæ of the hospital (composed of quiniæ sulph. ℈ij., tinct. opii ʒj, acid sulphuric dil. ʒj, aq. menth. pip. ʒvj); a teaspoonful every 3 hours until 3 are taken.

December 27th.—Much febrile movement; face flushed; skin dry and hot; pulse quick and full; pupils contracted; delirious during the night; no muscular pain or rigidity; patient lies on his back; complains of intense pain in the head and great debility. Ordered: ℞—Ammoniæ carb. grs. x, tinct. cinchonæ co. f℥i, aquæ f℥iij, ♍ et. Sig. A tablespoonful every 3 hours. Also: ℞—Chloral hydrat. ʒij, aquæ ℥iij, ♍ et. sig.; a teaspoon ful as required to procure sleep.

December 28th.—Febrile movement continues; patient observed picking at the bed clothes while asleep; pupils irregularly contracted; pain in head continues; motion from the bowels this morning; takes food readily; no vomiting. Ordered chloral hydrat. to be given in sufficient quantity to procure sleep.

December 29th.—Patient was delirious during the night; intense pain referred to head and back, also muscular pains; pulse quick; pupils respond to light feebly, and contract irregularly. While lying quietly a flush is frequently observed passing wave-like over the countenance. No opisthotonos can be observed. No petechial spots discovered. Ordered best nourishment, and chloral hydrat. as before.

December 29th.—General condition about the same; disturbance of vision observed this morning; patient complains that he sees double, and on close examination it is discovered that the axes of the eyes do not correspond; patient very feeble, stupid, remains in one position; breath fetid; intense pain referred to head, neck and thighs; urine scanty and highly colored; slight rigidity of muscles of the neck. Ordered: ℞—Potass. brom. ℈iv, potass. iodidi ℈ij, infus. digitalis ℥iij, ♍ et. sig.: Teaspoonful every 3 hours. Best nourishment.

December 30th.—General condition about the same. Urine more abundant. Action of bowels this morning.

December 31st.—No change.

January 1st.—Patient remains very feeble; delirious during the night, talks irrationally; disturbance of vision continues; pain in head and back not so severe. All medication discontinued, and best hospital nourishment ordered.

From January 1st to January 9th.—Patient remained in this feeble condition; muttering incoherently; face frequently flushed; vision disturbed—subsultus tendinum; urine and fœces frequently passed in bed; head drawn back; intense pain referred to head, back and thighs; pupils sometimes contracted, frequently dilated. Patient took food readily during the whole time.

January 10th.—The following prescription was ordered: ℞—Potassii brom. ℈iv, potassii iodid. ℈ij, infus. gentian ℥iv, M. et. S. Tablespoonful every 4 hours. Also, ℞—Mass. hydr'g, grs. v. S. At once.

January 11th.—Condition of patient about the same; bowels acted this morning in response to the cathartic. Prescription of yesterday continued.

January 13th.—Patient more rational; for two days past has complained of pain only in the head. For two mornings past has had high fever followed by perspiration. Prescription discontinued, and ordered: ℞—Haustus quiniæ ʒiv. S. Half a teaspoonful every two hours.

January 15th.—Patient improving rapidly; is not suffering any pain; is perfectly rational; expression of countenance much better; rests well at night; takes food readily; some disturbance of vision remaining. Ordered: ℞—Tinct. cinchonæ comp. ℥iij, sig.: Teaspoonful 3 times daily; best food.

January 18th.—Patient continues to improve; countenance clear; no pain; complains of double vision yet, and there is internal squint of the left eye.

January 20th.—Convalescence now fully established; patient sitting up. Prescription continued.

February 10th.—Patient was discharged from the hospital. Has been rapidly gaining strength for ten days past.

Diplopia with slight strabismus of left eye remained at the time of dismissal from the house.

TABLE OF TEMPERATURE AND PULSE.

Case No. II.

Day of Month.	Temperature. M.	Temperature. E.	Pulse. M.	Pulse. E.	Day of Disease.
Dec'r.					
26	100°	99.8°	100	97	2
27	101	101.5	101	104	3
28	100.8	101.8	102	104	4
29	101	101.8	100	102	5
30	101	102	108	115	6
31	101	103.2	104	122	7
Jan'y.					
1	101.8	102.5	108	120	8
2	103	102.2	102	116	9
3	102.2	102.5	104	106	10
4	101.5	103	104	116	11
5	101.8	99	102	110	12
6	101.2	104	101	108	13
7	101	103	100	104	14
8	102	102.8	84	104	15
9	102.2	102	98	84	16
10	101.2	103	110	114	17
11	102.2	102	112	96	18
12	100	101.8	102	106	19
13	101	101.5	104	106	20
14	100.8	101.2	108	112	21
15	100.5	101	100	96	22
16	100	99	98	90	23
17	90	98.8	82	80	24
18	98.5	98.5	78	76	25

Case No III. Hemorrhagic Malarial Fever.—Henry Schmidt, æt 18, laborer, was admitted to ward 19, November 16th, 1873. Stated on admission that he lives in the suburbs of the city, and gave a history of chronic malarial toxæmia of several months duration. Patient had experienced a malarial paroxysm a few hours prior to admission to the hospital. Two hours after admission he received the following: ℞—Pil. quiniæ sulph. aa grs. iij, No iv. Sig. Take at once.

On examination, on the morning of the 17th of November, there was increased febrile movement and slight jaundice. Pulse full, and numbers 96 to the minute. Temperature 102.5°. Patient is rather stupid; skin very dry; complains of pain in the head. Urine highly colored, and contains albumen in small quantity. No hemorrhage from the mouth or nose; gums are firm and healthy. Ordered the following: ℞—Haustus quiniæ ℥i. Sig. Two teaspoonsful every three hours. Also ℞—Potass. bitart ℥i. Sig. To be dissolved in a pint of lemonade and taken *ad libitum* during the day. Perfect quiet and careful nourishment also ordered.

November 18th.—Patient rested well during the night. He is rather stupid; jaundice increased. Motion from bowels this morning. Temperature 102°. Pulse 88 full. Whole amount of urine passed in last 24 hours is 2½ pints; specific gravity 1024; very highly colored; no bile can be detected; microscope shows blood corpuscles in abundance; albumen (from the blood.) Ordered careful nourishment and nursing, and haustus quiniæ ʒi, to be taken at bedtime.

November 19th.—Patient remains stupid, with increased febrile movement. Temperature 103°. Pulse 73, intermittent. Skin hot and dry. Jaundice is more complete; entire surface of body and conjunctivæ of a golden hue. Amount of urine made in 24 hours past is about 2 pints; specific gravity 1022. Bile in large quantity; also albumen. Casts (granular) from the kidney also discovered with the coloring matter of the blood. Ordered careful nourishment alone during the day.

November 20th.—General condition same as on yesterday. Jaundice continues, also stupor; pulse 70, feeble. Amount of urine excreted in past 24 hours about two pints. Examination shows bile in large quantity, albumen, coloring matter of blood, but no corpuscles; casts colored by bile; uric acid crystals. Skin dry. Temperature 103. Appetite good. Rests well at night; no complaint of pain. Ordered: ℞—Haustus quiniæ ʒiv. Sig. A teaspoonful every 4 hours during the day.

November 21st.—Febrile movement diminished. Temperature 102°. Pulse feeble and slow, 67. Bowels moved yesterday. Patient feeble, but makes no complaint. Nourishment taken readily, and patient rests well at night. Urinary excretion about the same in quantity as during previous 24 hours; specific gravity 1020; bile, urates, casts, albumen, and coloring matter of blood. Jaundice continues, but the hue is not so bright as previously, being of rather a dusky tinge at present. Expression of patient indicates improvement. Ordered: ℞—Acid nitro-hydrochlor., dil., ʒiv, inf. pruni Virginianæ ℥iv; ℳ et. Sig. Tablespoonful every 4 hours.

November 22d.—Patient improving; rested well during the night; appetite good; jaundice disappearing gradually. Pulse 62, rather feeble but regular. Temperature 99.2°. Urinary analysis affords the same result as on yesterday. Ordered the prescription of yesterday to be continued, and one teaspoonful of haustus quiniæ to be given during the afternoon.

November 23d.—Continued improvement. Temperature 99°. Pulse 57. Urine still highly colored, but excreted in larger quantity; specific gravity 1020; bile, urates, coloring matter of blood; no albumen. Ordered prescription of 21st to be repeated.

November 24th.—Patient continues to improve, but is very feeble. Temperature 98.5. Pulse 52. Urinary analysis affords same result as on yesterday. Prescription continued, with a teaspoonful of haustus quiniæ during the afternoon.

November 26th—Improvement continues. Temperature 98.5°. Pulse 49. Urine of very dark color, containing large quantity of bile; urates; neither casts nor albumen can be detected. No change in treatment.

November 29th.—Patient rests well; appetite good. Temperature 98.5°. Pulse 44. Urine more abundantly excreted; quantity of bile diminished. Expression of countenance better; intellect clear, and strength slowly returning. No change in treatment.

November 30th.—Convalescence fully established; patient up, walking around the ward. Appetite good; jaundice disappearing. Urine still highly colored, but contains very little bile; no albumen or casts present. Temperature normal. Pulse 49. Ordered careful nourishment, and one teaspoonful of haustus quiniæ during the afternoon.

December 3d.—Patient going about the house and grounds, and rapidly regaining strength. Jaundice disappearing. Pulse 54. Temperature normal. Quantity of urine increased, is still highly colored, but contains neither bile, albumen or casts. Treatment now consists of tonics, concentrated nourishment, and a small quantity of quinine every third day.

December 10th.—Recovery is complete.

NOTICES OF NEW BOOKS.

Chemistry, Inorganic and Organic: with Experiments. By Charles Loudon Bloxam, Professor of Chemistry in King's College, London; in the Royal Military Academy, Woolwich, and in the Department of Military Studies, Woolwich. With 295 illustrations. From the Second and Revised English Edition. Philadelphia: Henry C. Lea; 1873. 7vo., pp. 700.

An introduction of about two pages is devoted to definitions and an enumeration and classification of chemical elements and compounds. The consideration of the physical properties of matter, of heat and of electricity, is entirely omitted. The chemistry of the non-metallic elements and their compounds is then treated thoroughly as far as the end of page 290. The chemistry proper of the metals covers relatively less space than is usual, being completed on page 426. About 30 pages are then occupied with the further application of chemical principles to the useful arts. The remainder of the work is devoted to organic chemistry, and in this part the processes of animal and vegetable life receive due attention.

The book is freely illustrated with wood-cuts, and numerous experiments are detailed, in smaller print, to throw light on the facts and principles enunciated.

The new atomic system of notation is adopted, in accordance with the prevailing views of modern chemists, but the old nomenclature is adhered to, as far as is consistent with the new atomic weights, inasmuch as it is familiar to the largest number, and no other system at present seems likely to be generally adopted. In this we think he acts wisely. It is certainly desirable that there should be some standard and uniformity in chemical language, for the confusion of the present transition period is very annoying to old students, and a source of great perplexity to new ones in the choice of text-books and systems; but the want of authority, judicial, legislative and executive, stands in the way.

The analysis of chemical compounds is totally neglected, the tests for the metallic elements not even being mentioned. This, and such subjects as the physical properties of matter and electricity are evidently relegated to other works. The medicinal and pharmaceutical relations of the substances treated of are nowhere considered. In fact, the treatise was not written for students of medicine, and is nowise suitable for their use, as chemistry is and must be taught in most of our medical schools. A considerable previous acquaintance with general physics and with the elements of chemistry is needed before this work could be used to advantage, and it is specially adapted to the wants of students of Applied Chemistry in scientific schools of a high grade. Its tone throughout is practical rather than theoretical, while the processes used in manufactures are continually brought forward in connection with the subjects treated. For the purpose denoted we think this book has been judiciously prepared, and believe that the vast amount of practical information which it contains will go far in furnishing the needed instruction which is demanded of a constantly increasing class of men educated scientifically for the advancement of the useful arts. H.

A Manual of Medical Jurisprudence. By Alfred Swayne Taylor, M.D., F.R.S., Professor of Medical Jurisprudence and Chemistry in Guy's Hospital, &c. Seventh American Edition, revised from the author's latest notes, and edited with additional notes and references, by John J. Reese, M.D., Professor of Medical Jurisprudence and Toxicology in the University of Pennsylvania, &c. With Illustrations on Wood. Philadephia: Henry C. Lea; 1873. 8vo., pp. 877.

The sixth American edition of this justly esteemed work was issued in 1866, and, like the present, was based on the eighth English edition; but the American editor, Dr. Reese, in preparing for this publication, had the advantage of using the sheets of a new edition of the author's larger work on "The Principles and Practice of Medical Jurisprudence." From this source, and from notes by the editor, fully one hundred addititonal pages are here presented. Some subjects are more amply treated than before, and a number of new ones have been introduced, making two additional chapters.

Under the head of poisons there are now introduced iodine, yellow jessamine, carbolic acid, bichloride of methylene, fusel oil, hydrate of chloral. and calabar bean. There is a new chapter on cicatrization of wounds, including tattoo marks. The subject of sulphuretted hydrogen has been considerably expanded into a separate chapter. The signs of pregnancy are more fully considered than before. The chapter on the relations of childbirth to civil rights of inheritance is materially enlarged. Erotomania and deaf-muteness are new subjects in this edition. Several additional illustrations are introduced, chiefly to aid in the detection of poisons, of blood, and of substances adhering to wounds and weapons.

The notes of the former American editors, Dr. Hartshorne and Mr. Penrose, have been retained, and many others added by Dr. Reese. These mostly have reference to cases occurring in this country.

It is unnecessary to speak of the general merits of a work so well known and so generally approved as this. The present edition is naturally in advance of previous ones, and must have been demanded by the requirements of a new set of readers.

This book, as well as the one previously noticed, is published with the same admirable typography and excellence of material that characterize all the issues from the house of Henry C. Lea.

E.

A Treatise on Acology and Therapeutics, with some of the most Prominent Principles and Rules of Chemical and Mechanical Pharmacy. By J. G. Westmoreland, M.D., Professor of Materia Medica and Therapeutics, Atlanta Medical College. Atlanta, Ga., Plantation Publishing Company's Press, 1873. 8vo., pp. 391.

This book is far from being a complete treatise on the subjects above indicated, and we presume that it is intended chiefly as a companion to the author's lectures at the Atlanta Medical College. Of the three parts into which it is divided, the first treats of Pharmacology, occupying about sixty-two pages. Various forms of preparation are mentioned, but several officinal classes are not noted, viz: fluid extracts, mixtures, olea destillata, resins and oleo-resins.

Among the circumstances which modify the action of medicines, we think that the pathological state of the system or a particular part and the action of the other remedies ought to be taken into consideration, as well as those which are mentioned.

The most important feature of this part is the classification of remedies, which is based strictly on their primary physiological action. As certain remedies are known to affect more than one organ, they are classed under several heads according to mode of action. We are of the opinion that such a plan of teaching this department of medicine will be useful, particularly to beginners, for it is the plainest and most systematic, though not always the most definite in results. To afford a fair idea of the scheme, it is herewith presented in full.

PHYSIOLOGICAL CLASSIFICATION.

- 1. LOCAL REMEDIES.
  - 1 Local action through Vital Process.
    - 1 Remedies that affect the Skin.
      - 1 Rubefacients.
      - 2 Vesicants.
      - 3 Pustulants.
    - 2 Remedies that affect all Soft Tissues.
      - 1 Astringents.
      - 2 Catheretics.
      - 3 Aromatic Excitants.
  - 2 Local action through Chemical Process.
    - 1 Remedies that affect Adventitious Substances and Structures.
      - 1 Anthelmintics.
      - 2 Escharotics.
      - 3 Antiseptics.
  - 3 Local action through Mechanical Process.
    - 1 Remedies that affect internal and external Surfaces.
      - 1 Demulcents.
      - 2 Emolients.
      - 3 Mechanical Counter Irritants.
- 2. ELECTIVE REMEDIES.
  - 1 Elective Action thro' Chemical Process.
    - 1 Remedies that affect the blood.
      - 1 Hæmatinics.
      - 2 Spanæmics.
      - 3 Diluents.
      - 4 Hæmostatics.
      - 5 Catalytics.
  - 2 Elective Action through Vital Process.
    - 1 Remedies that affect the Alimentary Canal.
      - 1 Inverse Gastric Excitants.
      - 2 Enteric Excitants.
      - 3 Gastric Tonics.
    - 2 Remedies that affect the Heart.
      - 1 Cardiac Stimulants.
      - 2 Cardiac Sedatives.
      - 3 Cardiac Tonics.
    - 3 Remedies that affect the Mucous Membranes.
      - 1 Blennymenal Stimulants.
    - 4 Remedies that affect the Nervous System.
      - 1 Cerebral Stimulants,
      - 2 Cerebral Sedatives.
      - 3 Cerebral Tonics.
      - 4 Excito-motor Stimulants.
      - 5 Excito-motor Sedatives.
      - 6 Spinal Stimulants.
      - 7 Spinal Sedatives.
      - 8 Spinal Tonics.
    - 5 Remedies that affect the Secernent System.
      - 1 Hæpatico-salivary Stimulants.
      - 2 Hæpatic Tonics.
      - 3 Renal Stimulants.
      - 4 Renal Sedatives.
      - 5 Renal Tonics.
    - 6 Remedies that affect the Procreative Organs.
      - 1 Genital Stimulants.
      - 2 Genital Sedatives.
      - 3 Uterine Stimulants.
      - 4 Uterine Sedatives.

The other two parts are occupied by Acology and Therapeutics proper, part second being devoted to Local Remedies, and part third to Elective Remedies. It is to be observed that Anthelmintics are classed among the remedies which act through chemical process. As most of them are vegetable and are efficient by virtue of a poisonous action on the entozoa, we fail to comprehend why they operate chemically more than those divisions of remedies which the author classifies as affecting the alimentary canal or the nervous system. A similar question applies to such Hæmatinics as food, cod-liver oil and transfusion; to such Spanæmics as blood-letting and low diet; to such Diluents as infusions; to such Catalytics as sarsaparilla, stillingia and chimaphila. It is not apparent to our understanding why the mode of action of these remedies in particular is *chemical.*

In a number of the classes we regret to find omitted certain remedies which we regard as of sufficient importance to deserve notice. For instance, among the Astringents none of the different alums or salts of iron are mentioned; among the Hæmostatics gallic acid and digitalis are not found; among the catalytics we see chloride of ammoninm and stillingia, but chlorate of potassa, colchicum and guaiacum are nowhere recognized in the whole work; among the Enteric Excitants (cathartics) enemata receive no notice; among the Cerebral Tonics the sulphate of zinc is reckoned, but not the oxide nor the valerianate; the action of podophyllum upon the liver is not alluded to, though the mineral acids and taraxacum are reckoned as Hepatic Tonics; phosphorus is not recognized as a genital stimulant along with the cantharis and canabis indica, nor bromide of potassium as a Genital Sedative with camphor and lupulines. The scope of the work is indeed so limited as to afford very little space for the consideration of remedial agents, and much important information touching their natural history, chemical constitution, mode of preparation and therapeutic application, is necessarily omitted. Even as a mere companion to lectures it is defective, and in its language there is a frequent uncertainty of expression which greatly weakens the effect. A teacher should "assume a virtue if he have it not;" that is, he should be dogmatic enough to carry conviction to others, though not fully convinced himself.

The table of contents and the index are both so defective as, in many instances, to give no direct clue to subjects noticed in the text.

If any of our readers should be puzzled by the word *Acology*, no one should consider himself the first one at fault, nor be ashamed to consult the latest edition of Dunglison. To those who have not the book handy, we would whisper that the word is a synonym of Greek descent for materia medica, and not related to Acholia nor to Alcohol. H.

Circulars of Information of the Bureau of Education. Washington: Government Printing Office; 1873.

No. I. Historical Summary and Reports on the Systems of Public Instruction in Spain, Bolivia, Uruguay, and Portugal. 8vo., pp. 66.

This consists of four separate papers: (1) An Historical Summary of Education in Spain, translated from Schmid's *Educational Cyclopædia*; (2) A report upon Education in Bolivia, made to the Brazilian Government by the Brazilian Minister at La Paz, in April 1872; (3) A report upon Education in Uruguay, made to the Brazilian Government by the Brazilian Minister at Montevideo, in March, 1872; (4) Education in Portugal, taken principally from Schmid's *Educational Cyclopedia.*

No II. Schools in British India. 8vo., pp. 30.

This is an article written by Rev. Joseph Warren, D.D., and recommeneded for publication by Hon. John Eaton, Commissioner in the Bureau of Education.

No. III. Account of College-Commencements for the Summer of 1873, *in Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania. 8vo., pp.* 118.

In 1867 a law was enacted establishing a department of education "for the purpose of collecting such statistics and facts as shall show the condition and progress of education in the several States and Territories, and of diffusing such information respecting the organization and management of school systems and methods of teaching as shall aid the people of the United States in the establishment and maintenance of efficient school systems, and otherwise promote the cause of education throughout the country." By a subsequent act this department was reduced to a branch of the Department of the Interior and styled the Bureau of Education.

Its purposes are shown by the language quoted from the organic act above, and they have been carried out by written answers to a multitude of inquiries, by the reports to the Secretary of the Interior, and by Circulars of Information addressed to the public in general and to those interested in education in particular. Were it possible to secure any branch of government from the contamination of party politics, which requires offices to be created and administered in the interest of the party which happens to be in power, rather than for the public good, no objection could be raised to the creation of this bureau. In any case, however, its advantages may exceed the dangers of its abuse, and the hazard may be as little as with any other branch of government, so long as its functions are restricted to diffusing information.

As for the present publications, we regard them as both interesting and valuable, and hope to see more of a similar nature.

H.

An Essay on the Principles of Mental Hygiene. By G. A. Gorton, M. D. Philadelphia: J. B. Lippincott & Co.; 1873. 12mo., pp. 242.

Mental Hygiene is a subject worthy the attention of all thinking persons, and this little book is not addressed particularly to the medical profession. It has long been recognized that public or physical hygiene properly belongs to the grand science of medicine; but it is hardly time to expect that the authorities on mental and moral philosophy, who are mostly theologians, will voluntarily give a medical writer admission to this field of inquiry, though no one now denies that the brain is the organ of the mind. In fact, people at large still regard the old expression *sana mens in corpore sano*, simply as a happy coincidence, and are not yet able to comprehend that it implies a conclusion dependent on a condition, the term *corpus* meaning the whole corporeal frame. We are glad therefore to find a physician courageous enough to venture upon this work, and, having now commended the undertaking, are ready to consider how the author has acquitted himself.

The book is divided into six chapters, of which the first two are occupied with "The Mental Influence of Physical Agents." Undoubtedly external influences have more or less power to preserve or disturb the mental equilibrium, to strengthen or weaken the whole mind or some particular faculties, and much that he says on the subject we consider reasonable; but we are constrained to the conviction that undue enthusiasm has carried him often into absurdity. The statement on page 23—"Poor air, unwholesome food, ill health, vice, poverty and crime, go hand in hand, and are mutual concomitants of each other"—is quite strong enough. Warming up, he continues on the following page: "The climate of the whole Atlantic coast is particularly irritating and unfavorable to long life and good morals." Again: "Drunkenness is almost unknown among the dusky inhabitants of equatorial regions, while the vice advances with an ever increasing ratio as we approach the more northern latitudes." We leave the author to settle the immoral tendencies of the climate of the Atlantic coast with those who are so unfortunate as to dwell there, but demur to his conclusion that the Esquimaux are more given to drunkenness than the Mexicans, the Icelanders more than the African negroes.

Speaking of the responsibility of society for tolerating injurious agents and influences, he declares: "The criminal has as clear a case against a community which permits the existence of avoidable causes of disease and crime as the man who falls into an unguarded pit in the public highway has against the city or village corporation where the incident occurs, or as the victim of a railroad accident has against the criminal carelessness of its managers." We venture the opinion that the above proposition would be novel to a lawyer, and that the author might be troubled to find a tribunal ready to entertain such an action. In fact, his reasoning would lead to nothing less than an arraignment of the Almighty for allowing his creatures to fall into temptation !

A table is quoted from Charenton, showing the relation of the season of the year to the access of insanity in France, by which it appears that more admissions to asylums occur during the hot months than the cold, but the figures hardly justify a positive conclusion. We find 40 in February, 50 in April, 55 in June, 52 in July, 45 in August, 48 in September. Another table is quoted from Quetelet, to show the relation of ignorance and crime among those confined in Belgian prisons. To make this of any real significance, the ratio of the educated to the uneducated among the people at large should be given. We are all familiar with the popular affiliation of ignorance to vicious and criminal propensities, and it must be admitted that there is a strong correlation. Moralists and educators generally insist that illiteracy universally stands in the relation of cause to evil tendencies; but we venture to suggest that innate depravity, with its fruits of idleness and truancy rather than deprivation of privileges, in such a country as ours, is accountable chiefly for want of education. It is easy to lead a horse to the water; it is useless to coax him to drink, and force will only provoke him to bite and kick. The illustration is rather too strong for a parallel, but indicates the principle: Early and constant repression of vagrancy and idleness is the great social problem—a difficult one to solve; achieve it, and education becomes at once practicable.

Some of his notions on the moral influences of certain diseases are according to general medical observation; others evidently have been prompted by the imagination. "An onset of gout, or rheumatism, induces ill humor, irascibility; gastric derangement produces melancholia; inflammation of the liver excites hypochondriasis; inflammation of the lungs causes a variety of beautiful hallucinations, etc. * * * * The best of Christians, it is believed, find it difficult, and some of them impossible, to maintain a reputation for a good moral character under an aggravated attack of that disease (ague and fever). * * * The introduction of the Jesuit's powder (Peruvian bark) into England, in the seventeenth century, did more, by the cure of ague, from which thousands died, and many more were mentally demoralized, annually, to correct the gross immorality of those times than any reform and laws, or the pious precepts of our over-pious Dissenters. * * * * An eruption of measles, or variola, has frequently been known to invigorate the moral and intellectual powers. In general, it may be observed, that eruptive fevers leave a salutary impression on the mind." Happy are those individuals privileged to die of pneumonia. The Atlantic coast may take comfort, for the gradual disappearance of paludal miasms will afford some compensation for the demoralizing east wind. Fortunately for Jenner's peace of mind, he did not live long enough to learn that vaccination has robbed the world of its greatest moral reformer.

His views on the action of drugs are clearly based on the so-called "provings" of the homœopaths, as thus appears. "The destructive mania produced by overdoses of belladonna; the jealous furore of hyoscyamus; the religious melancholy of pulsatilla anemone; the obstinate self-will and combative humor of sulphur or chamomilla; the ill-humor and passionate irritability of strychnos nux vomica; the moral perversion of mercury; the dejected and sorrowful humor of ignatia, lycopodium, and a few other drugs; the lascivious influences of Peruvian bark; the paralyzing effect of opium on conjugal love and the sexual instinct; * * * the morbid fear and cowardice of stramonium * * * are a few prominent examples of the psychical properties of medicinal drugs, well known to all good students of therapeutics and materia medica. It is not unlikely that drug agents may yet be discovered which will supplement, in their action on the mental functions, all the faculties and sensorial impulses of the mind." Comment is unneccessary.

As might be expected, the author's views on food are equally precise and scientific, as appears—"The quality of the diet influences the quality of the mind and disposition. The mental character is modified, exalted or depraved, according to the quality and quantity of the food one eats. The most important question in dietetics, therefore, is, What kind of food is most conducive to the development of the human excellencies? rather than, What is most digestible?" "The modern chemical and physiological estimate of food, however, is based, as it has been shown, on a very crude and imperfect—I should say fallacious—judgment. They may, indeed, analyze it; point out, weigh and measure the proportionate principles and chemical elements of an aliment submitted to them; but the subtle, deific essence and potential quality is beyond the detective agencies of acids and alkalies, or the crucible and balance." For the due appreciation of that *subtle, deific essence and potential quality* a livelier imagination is required than has been granted to this dull generation of scientists. These obdurate skeptics subject the most delicate theories to rude experimentation, and demand uniform results in which expectation and imagination are not allowed to play any part. Hence the barrenness of their researches.

Chapter second is mainly occupied with discussing the effects of alcoholic stimulants, opium, hashish, tobacco, tea and coffee. We find nothing remarkably striking or original on these topics, and less extravagance of fancy than is elsewhere manifested.

Chapter third is occupied with "The Reciprocal Influence of

Corporeal Exercise." On this subject the author takes a conservative position midway between the excess of mental and corporeal training. The salutary effect of exercising alike the mind and body is illustrated by numerous examples of longevity and prolonged usefulness. The superior importance of the cerebral to the muscular functions is fully insisted on, and it is shown by authentic tables that intellectual pursuits tend less to shorten life than manual labor.

Chapter first treats of "Moral and Religious Influences." The importance of moral and religious training to secure a proper mental balance and its favorable reaction on the physical well-being are very properly presented. No sectarian bias is manifested, but the happy effect of cultivating religious sentiments is shown in its repressing influence on vice and crime. At the same time the author distinguishes between an outward profession with mere practice of the public observances of religion and its daily exemplification in the usual pursuits of life. He depicts the frauds in fabrication, the cheats in trade, the deceit, hypocrisy and malice, which professing Christians practice in their ordinary intercourse.

The subject of chapter fifth is "Moral Agents and Influences," considered under the following heads: (1) Faith, (2) Cheerfulness, (3) Temperance, (4) Music, (5) Art, (6) Language and Conversation, (7) Literature, (8) Love, (9) Friendship, (10) Society, (11) Industry, (12) Poverty, (13) Prayer. On the last topic only have we space to notice his views, which, in brief, are to the effect that the operation of prayer to the Diety is subjective solely; that the divine government is exercised through fixed, unchanging laws; and not altered nor interrupted at the will of mortals; that the true office of prayer is an effort of the human mind to conform to the divine will, the success of which depends on the habit of this conformation. He does not claim that his doctrine is scriptural, but that it is reasonable, and therefore correct. We shall not undertake here to arbitrate between him and the theologians. Most of them are sure to take issue with him, though he quotes some Scotch divines in support of his side of the case.

In chapter sixth, "Marriage" is suitably discussed in regard to its physical influences, with citations from familiar authors. its effect on health and longevity is supported by the statistics compiled by M. Bertillon from France, Holland and Belgium, which have been widely published. On the influence of heredity his opinion is extreme. "Children are endowed and vitally influenced by the *peculiar circumstances* and normal or abnormal activities which are most dominant in their parents at the time of conception." The same idea is rather indistinctly expressed by Dr. Carpenter in his work on Physiology, and is alluded to in a late article on "The Phenomena of Heredity," by Fernand Papillon. The last writer and Dr. Gorton both adduce some curious instances in support of the theory. We say theory, because it is far from being an established fact. Neither in reason nor in reality do we find that mental traits are more surely transmissible than physical ones, and there is no evidence that a physical accident occurring at the period of procreation is transmitted to the offspring then begotten. Even the production of physical deformities in children through a settled expectation or fear on the part of the mother during a lengthened period of gestation is far from being admitted. The expectation is sometimes fulfilled, but much oftener fails.

The following statement is broad to the extreme, while the examples adduced are too remarkable to be overlooked. "Congenial wedlock is the indispensable condition of a pure, high-toned progeny. * * The Constantines, Caligulas, Neros, Alexanders, Georges, Napoleons, Burrs, Tannys, Byrons, and the like, may be produced in indifferent conjugal relations. But the minds that move the world and bless mankind, the Solons, Platos, Galileos, Gôtamas, Jesus's, Newtons, Shakspeares, Melancthons, Wesleys, Channings, Scotts, Austens, Lincolns, Greeleys, etc., require wedlock of a higher, nobler order." Our author can not surely be familiar with the gospel history of Christ's genealogy; and probably has not heard of Lamon's biography of Lincoln, which proves that he was born out of wedlock, that he probably never knew his father, and certainly was ashamed ever to speak of his mother. There is good reason to believe that Napoleon and Alexander were fortunate, according to the author's view, in conjugal antecedents, though the reverse is known to have been the case with Byron. With regard to most of the others, the conjugal relations of their parents were too indifferent to have become matter of history. The imagination of the author must have supplied the deficiency.

This chapter, while expressing some excellent views on the marriage relation, overflows with the author's enthusiasm and runs sometimes into extravagance. We have not space to particularize farther, and merely add a regret that a work on so important a subject, so interesting to a vast body of readers, should have been treated with such want of judgment and moderation.

A copious index is appended, and the mechanical execution of the book is in the publisher's usual excellent style. H.

Lacerations of the Female Perineum and Vesico-Vaginal Fistula: their History and Treatment. By D. Hayes Agnew, M.D., Professor of Surgery in the University of Pennsylvania. 8vo., pp. 140. Philadelphia: Lindsay & Blakiston; 1873.

As we are informed in the introduction to this volume that the article on lacerated perineum appeared several years ago in the *Pennsylvania Hospital Reports*, and that on vesico-vaginal fistula as a contribution to the *Medical and Surgical Reporter*, it is reasonable to infer that the author is quite satisfied that they fairly represent the present knowledge of the profession concerning the matters of which they treat. We do not propose to quarrel with him upon this score, further than to remark that if such is the case, there was scarcely any excuse for reprinting the two articles in the form of a *brochure*. Nor have we any fault to find with the manner in which the subjects are treated; for, excepting a few affectations of expression, as, for instance, the frequently repeated phrase "Mrs.—*fell in labor* with her first child, &c.," the book is in the main an instructive one. However, when the occupant of the chair of surgery in so distinguished a school as the University of Pennsylvania—a chair adorned by a Dorsey, a Physick, a Gibson—opens his mouth and speaks a volume upon two topics, we have a right to expect something more than a mere repetition of what may be found in works on general surgery. He professes, it is true, to have simplified the operative procedures demanded by these two accidents, but we really cannot discover wherein his simplifications exist. His mode of introducing metallic sutures in laceration of the perineum certainly does not come under this category. For instance, we are told, in reference to the first stitch, which is recognized by all surgeons as the most important as well as the most difficult:

The needle is threaded with iron wire, and entered three-quarters of an inch from the margin of the wound, below its lowest point at the anterior part of the ischio-rectal fossa, and carried forwards and upwards until it appears on the middle of the septum, just above the line of denudation; the thread is then pulled out of the eye of the needle, the latter withdrawn, and made to pass unarmed through the corresponding parts on the opposite side, emerging on the septum close to the first. The wire is now passed through its eye, and as the needle is withdrawn makes the complete circuit of the wound, so that when it is tightened the parts are pursed together.

We submit to any practical surgeon who has had much experience in this operation, whether the attempt to re-pass the metalic thread through the eye of the needle in the second stage of this operation, as here described, does not involve far greater difficulties than any plan heretofore devised. The introduction of the first suture is the turning point in the operation, and if the author had only given us a new and better method we should have felt amply repaid for reading the whole of his book; but having failed in this vital particular, he cannot justly claim to have made any improvement whatever in the operation.

His account of vesico-vaginal fistula is very fair, but contains nothing worthy of comment.

The book is published in excellent style, with good paper and clear type, and contains a number of excellent illustrations which add much to its value. R.

The Toner Lectures.—Lecture 1—On the Structure of Cancerous Tumors, and the Mode in which Adjacent Parts are Involved. By J. J. Woodward, Assistant Surgeon U. S. A.: Delivered March 28, 1873. 8vo., pp. 40. Published by the Smithsonian Institution, Washington, D. C.

It is possible that some of our readers may not be aware that John M. Toner, M. D., of Washington City, a gentleman no less distinguished for his professional acquirements than for his general philanthropy, "has placed in charge of a Board of Trustees a fund, the interest of which is to be applied for at least two annual memoirs or essays relative to some branch of medical science, and containing some new truth fully established by experiment or observation."

Dr. Woodward's lecture is the first fruits of this noble endowment, and as the author is acknowledged to be one of the best pathological microscopists in this country, his observations upon the much-vexed question of the anatomy of cancer growths must command the attention of all who are engaged in this line of study. As it is published in pamphlet form by the Smithsonian Institute, and can be readily obtained, it is not necessary that we should attempt an analysis of its contents. Nearly one-half of it is taken up with a brief but excellent summary of what has been done within the past quarter of a century to elucidate the histology of cancer by such men as Schwann, Rokitansky, Virchow, Cohnheim, Thiersch, Waldeyer, Karl Kœster, and others, all of whom it appears are Germans. Then follows an account of Dr. Woodward's own investigations. The lecture in its delivery was illustrated by over seventy microscopical preparations, enlarged copies of which were thrown upon a screen by means of an oxy-calcium lantern. A few of these specimens are also delineated in the printed text. Without going into an account of these minute but exceedingly interesting and important matters, we may be permitted to state that one practical inference which we draw from the whole is, that Dr. Woodward agrees with the German pathologists in discarding the doctrine of a cancerous cachexia. This may or may not be true, but we doubt whether the question can be settled by microscopic examinations, independent of clinical observations. The English pathologists are not of the same uniform opinion, and Sir James Paget, whose authority, clinically speaking, is equal to that of all the German pathologists combined, and who has given the subject the fullest investigation, maintains the constitutional origin of cancer and consequently the existence of a cancerous cachexia. However, we must do Dr. Woodward the justice to state that he does not discuss this question, and at the very outset begs the reader to lay aside all idea of practical application, and to join him "in considering the subject from the point of view of medical science rather than from that of medical and surgical art." In this light the lecture is undoubtedly a contribution to knowledge, and as such we sincerely commend it. R.

The Transactions of the American Medical Association. Volume xxiv. 1873.

A very neat volume with the above title has reached us. In glancing over its pages we are at once struck with the extensive space devoted to lengthy and rather tedious reports of the discussions in the various sections, to the exclusion of original articles. The essays on medical science are very brief, and only four in number. The address of the president is *peculiarly* original. The report of the delegates to the British Medical Association is brief, concise, and contains much of interest. This volume of the transactions of the Association will be valued for the Statistics of the Medical Associations and Hospitals of the United States, which are prepared with great care; and the excellent Necrological Report, in which we are glad to observe an outline of the professional career of the late Prof. Warren Stone, M. D., of this city. M.

Every Day Cookery. Compiled and edited by Mary Jewry. Published by Frederick Warne & Co., London; and by B. Lippincott & Co., Philadelphia.

Warne's Model Cookery. Compiled and edited by Mary Jewry.

Mrs. Putnam's New Receipt Book. Sheldon & Co., New York.

Appledore Cook Book. By M. Parloa. Graves & Ellis, Boston.

Foods. By Edward Smith, F. R. S. D. Appleton & Co., New York.

My mind sadly misgives me if I had approached that unsceptred monarch of the past, Aristotle; with the formidable list of names written above, the grand old Greek would scarcely have deigned a frown of contempt at my rash interruption of his ceaseless περίπατεω.

Now, however, *nous avons changé tout cela!* and the time is far removed from us, in which men in shady walks and cool porches must needs discuss philosophy. Now, the little things of life are made the all-important, and our wise men may babble as their own rich fancy dictates. In our day, Spencer in his easy chair may grumble at man's inability to make a "scientifically comfortable seat," and stir up the fires of his own resentment at social evils with tongs whose "smooth ends" provoke his wrath.

Darwin may go ferreting about, in his eternal search for that missing link which, like the "mole on the arm" in the nursery tale, is to prove us all sons of kings.

Now-a-days, too, our scientific men must give weighty and well-considered answers to the great, What we *shall* eat! and travellers must send us from other lands lengthy lists of what they *did* eat.

All which but too plainly says to me: Our increasing civilization has made us like spoiled children, exquisitely sensitive to the "crumpled rose leaf."

Of course it is a matter of regret to you and to me, that our poet's dreams and painter's visions should be thus rudely dispelled by clash of brazen kettles and clatter of pots and pans—a matter of regret to both, that in the great case of Cookery, plaintiff, vs. Poetry, defendant, the decision of that Daniel come to judgment should be against the daughter of Heaven and Earth, who must gather up her gorgeous robes woven by the fingers of her favored sons, and withdraw from mortal gaze till the close of the nineteenth century shall usher in a more auspicious day.

But the court decrees it, and so let it be! Progress and science, reads the judge; progress and science, echo back *turba admirans.* Down with Madame Sentiment! We would deal with the ever present—*mundus edibilis!*

This being the verdict of the jury—a jury not composed of twelve wise men, but of the whole reading race—what can be more prudent on our part, than at once to regale our "mighty men of Gotham" with a sumptuous feast, Barmecidal though it be!

And if an unduly sensitive conscience, like good Launcelot's "hanging about the neck of my heart," accuse us of debasing our powers, I shall plead guilty to the old "*homo sum*" proverb, and pray forgiveness that this "humanissimus" of all things should fill my thoughts.

Again, I, through the inspiration of one who speaks with authority, have cast one shuddering, fearful "glance into futurity," and on the uplifted scroll, read these dread words: "In some time, happily yet remote, the store of coal must be exhausted, and the world lose its most convenient and economical means of generating heat."

Now to one endowed by nature with a strong logical bend, is not the construction clear?

No coal, no fire; no fire, no dinner.

I shudder at the misery this picture portrays, when all the world shall go hungry and supperless to bed, and awake to a day whose dreary waste shall know no *break-fast;* when the "New England Stove," the "German Ofen," the universal "Range," shall be piled up like the pillars at Persepolis, like the hanging gardens of Babylon, monuments of what the world did in her prime! when the Russians alone shall have any practical need for this altar of the kitchen, since they—oh generation wise in its own day!—may continue to *sleep* within its hallowed precincts.

Then, too, the cooks—imperious race—'neath whose thraldom we have so long and so vainly groaned, these Egyptian task-masters, these *genii loci* shall be banished.

The cookery books, whose mystical "Take, Make and Bake" contains more than Sybil of old claimed for her precious nine, will then be hateful in our sight as "A fair sight that minds us of diviner with sense of loss."

I have often been struck by the grandeur of the moment when the exile casts his last look on his native land as its shores fade forever from his sight. With such intensity of feeling, with such keenness of vision must he view its hills, its vales, its sinuous borders, whilst his pulse grows fainter, his eye dimmer, at the reflection that it is the last time the dear sight shall gladden his heart forever.

In this same relation do I stand to thee, thou old kitchen range, when the mournful thought of thy demise rises before me! With such remorseful pain look back on thy life of self-forgetfulness. With such affection regard thy honest plumbaginous countenance.

With such rigidity of determination do I raise my feeble voice in the attempt to arouse mankind to the imminent loss before us all, and resolve, for my own part, my every faculty shall be consecrated to *ars divina* in my endeavor to make the most of the time left me.

Farewell, ye flowery fields where poets lead; farewell, ye stony paths where Science points the way, and Ambition binds our bruised feet. No more for me your soft allurements! For me no more your weary toils! Eat, drink, and be merry shall henceforth be the "open sesame" to my attention.

Old Homer might perhaps head the list of those who henceforth shall be the companions of my solitary hours. Only, unfortunately for me, the supply of Greek, which like Wordsworth's Heaven "lay around me in my infancy," has long since "melted into thin air and faded away."

And I must needs fill the vacant place with him who so eloquently celebrated the "Massic" and "Falernian cup," who so frankly confessed to my own weakness, when he says: "Nos convivia—Cantamus vacui"—and who with such mournful cadence sings: "Lusisti satis, edisti satis, atque bibisti."

Rich requiem to the human race! as fresh to-day as when first traced on parchment nineteen hundred years ago.

From Horace, name ever dear to classic minds, I shall have little trouble in finding, all the way down to our own day, writers of tastes congenial to mine.

First at the feast, shall come Sidney Smith, with his mirth-inspiring stories, his famous receipt for sauces, his hackneyed strawberries—no doubt long ago unfit for market—and his missionaries, pleasantly devoted to the cannibals' breakfast.

Stuttering Charles Lamb shall also walk in, carrying under his arm the "sucking pig" which he so lustily maintains to be the most delicate of delicacies—"princeps obsonium."

Napoleon First shall grace this select assembly, since he showed his devotion to the cause when, Esau-like, he lost the battle of Leipsic rather than his dinner.

As our chronology varies, so shall our geography, as we go to the Flowery Kingdom to learn how man first thought to roast the pig—

To the shores of ancient Greece to learn of the man who first ate the oyster—

To dusky Afghanistan's legend-inspiring land, for the explanation of the discovery of the "utile et dulce" in vegetables. The latter story, which is new to me, runs thus:

Formerly, when men were yet ignorant of the art of agriculture, they made a compact with Satan by which he was bound to furnish the seed, and teach the people to properly tend the soil till the harvest; then the produce was to be divided between them. Thanks to the assiduous care of the laborers, the crop was bountiful—turnips, carrots, beets, of the finest. Now for the division: when men, in their ignorance, perhaps also their greed, take all that is on the surface. After awhile the mistake was discovered, and the people complained loudly of the injustice. Satan, however, blandly compromised the matter by assuring them the division should be different another year. And so it was. For with the spring came the devil, bringing wheat, barley, and other grain whose fruit lies above the surface. Thus were the people twice duped. However, *experientia docet*—after that they did not need to be told.

Among late works on this subject, I know of none more interesting and more instructive than "Foods," by Edward Smith, M.D., L.L.B., F.R.S., in which the chemist goes into the kitchen, and as he stirs the pan, wisely discusses nitrogenous and non-nitrogenous foods, till we feel, as if we were eating, not delicious bread, or mealy potatoes, but rather swallowing all the symbols ever dictated by chemical terminology.

As a specimen of the culinary lore of our ancestors in the fourteenth century, let me quote from this book a recipe for a lenten dish of fish soup:

"Take the blode of pykes oth' of cong (conger eel) and nyme the pauch of pykes, of cong and of grete code lyng, and bolle he tendre and mynce hé small and do hé ï that blode. Take crust of white brede and styne it through a cloth, thenne take onyons iboiled and mynced. Take pep and safron wyne. Vynig aysell oth' aleg and do th' to and sue forth."

Oh, hardy race, even in a season of mortification to endure such confections!!

One more extract, shorter and more legible, which may serve to show the esteem a certain John Grove, at Furnival's Inn Gate, in Holborn, 1629 placed upon wine, in the dialogue entitled "Wine, Beere, and Ale together by the ears.":

"I, Wine, comfort and perserue; lét that be my character. I am cosen-german to the blood, not so like in my appearance as I am in my nature. I repaire the debilities of age, and reniue the refrigerated spirits, exhilarate the heart, and steele the brow with confidence. I am a companion for princes. I am sent for by the citizens, visited by the gallants, kist by the gentlewomen. I am their life, their genius, the poeticall Fury, the Helicon of the Muses!"

Seriously speaking, however, their are few more important questions, or more worthy of earnest and intelligent consideration than this of food and its preparation. It may be, I make this assertion the more boldly now that all the Sir Isaac Newtons, pausing abstractedly with one stocking off and one on, like a certain other hero we wot of, from 8 a. m. to 9 p. m , are dead and put away out of hearing.

Aside from the aspect which strikes the political economist, as a powerful motor to the energies of man, in the ever arduous, and often vain struggle for *panis quotidianis*; aside from its bearing direct and ever notable on the physiological, its influence indirect on the moral and psychical character of nations, our food is perhaps more responsible for the deeds of the day than one would think. There is probably not one of us all who has not, after a cheerful, comfortable meal, felt his confidence in human nature revive, and his hand, with fresh vigor, grasp the good broadsword of Right. You may call it Dutch courage if you will, but, quite candidly I believe both you and I stand sometimes in such need of help, and we would scarcely stop to question the source.

I am also firmly convinced, a melancholy woman and an indifferent cook are, alike, impediments to the healthy digestion of the family. From this point to the utter extermination of both, is but a single link in the logical chain. Practically speaking, however, the matter is more difficult of accomplishment. In that day when housekeepers wear a perpetual smile, and cooks cast loving glances at every instrument expositive of their art, may I be there to see!

Meanwhile, will not some one give us an Appledore of the South—one in which rich fricassee and Creole home cookery shall be a distinctive feature?

Certainly, a sober examination of cookery books is a difficult thing to make. They come to us on so different a footing from all other books, with such manifest care for our creature comforts, with such proffers of "motherly advice" to those much tortured, and much torturing, individuals—"young housekeepers"—as quite to disarm all adverse criticism. Again, it is almost an impossibility to test every receipt; yet each housekeeper knows the importance of testing every precept given by her guide in culinary matters. So far as a faithful, if not fully extended, trial of the above books enables me to judge, there is not an indifferent one among them.

Mrs. Putnam's can scarcely be called suited to this latitude. Indeed, it was not designed for this. But for plain cooking, it is reliable and quite good.

The Appledore book covers a somewhat wider territory, and contains many excellent receipts, not only from Northern, but Middle and Southern States. Its directions are simple, and easily followed. For an inexperienced person it is perhaps best of the three, since, as far as obtaining any knowledge of cookery is an object, it is better to succeed in the more simple confections than to attempt those that seem almost works of art.

Of Mrs. Jewry's books I can scarcely speak too highly, so judicious are the "hints," so varied and excellent the receipts, and the dishes in their finished state are so calculated to please the palate and captivate the eye, whilst in every line we see the well ordered English household, though generally she presumes quite an accomplished chef de cuisine.

There is one most excellent feature in all these books, upon which I must remark: this is, their exactness. Those terror-inspiring words, "a little," or "according to judgment," are scarcely to be found. Judgment in cooking means experience; this the beginner has not had. "A little" may mean anything, as the beginner often finds to his cost. **

CORRESPONDENCE.

Letter to Professor S. M. Bemiss, on the so-called "Spurious Yellow Fever, or Dengue," the "Hybridity in Diseases," and some other Unsettled Questions.

(——Non in contentione et æmulatione.——)

Très honoré confrère:—I have received through the courtesy of a friend (Dr. Romer), two numbers of the *Mobile Register* (October 21st and November 2d), containing "Medical Letters" on "Dengue" or "Spurious Yellow fever," and on "Hybridity in Diseases." These letters are specially interesting at the present time, and notwithstanding their polemical tenure, I beg leave to be allowed to present an analysis of these writings, intended for your Medical Journal. My excuse will be found in the grave issues involved in the main points of the subject. The writers have a high standing in the profession, being two professors of the Alabama Medical College, Dr. Cochran and Dr. Gilmore. I am not personally acquainted with either of them, and am assuredly not authorized to pronounce judgment; in consequence, what I have to say is purely scientific criticism.

First question: What is "Spurious Yellow Fever?" The "Advisory Board of Health" reported as follows to the Mayor of Mobile: "In New Orleans and Mobile we witness the fact that we have only a 'spurious yellow fever'—'dengue'—that is only genuine in a few instances."

"What do the Advisory Board of Health mean by "spurious yellow fever," asks Dr. Cochran, "and what relation do they imagine to obtain between "spurious yellow fever" or "dengue" and genuine yellow fever?" The expression "spurious yellow fever," if stood alone, might be explained to mean either of two widely different things. It might mean a fever which is not yellow fever at all, but a fever of quite another sort, which puts on the livery of yellow fever in a way that makes its true character difficult of recognition. * * * But the context shows that this is not the meaning which is intended. What the Advisory Board means to assert, and does assert and insist upon, is the absolutely monstrous proposition that the epidemic fever prevailing in Mobile and New Orleans, and which is called *dengue* by the medical profession of both cities, is *not dengue at all*, but yellow fever, *modified* yellow fever, indeed, but still yellow fever; yellow fever *modified*, either by some occult atmospheric influence which happily obtains in these two cities, which unhappily does not obtain in Shreveport and Memphis; or else, and this seems to the Advisory Board the more probable presumption, yellow fever *modified* by "the protective virtues of disinfection and fumigation. * * * Now, the argument of the Advisory Board of Health is this" that "the protective virtues of disinfection" have modified the type of our yellow fever in the same way that the protective virtues of vaccination are known to modify the type of small-pox; and our so-called "dengue" bears much the same relation to genuine yellow fever as varioloid bears to variola, that is to say, as modified small-pox bears to unmodified small-pox * * *"

"This is all very well *providing only that it is true.* * * * But it is not true * * * One thing is certain: from the conjugation of the carbolic acid and the yellow fever poison there was engendered no such hybrid offspring as "spurious yellow fever, or dengue." Do we gather grapes of thistles, or figs of thorns? Nay, verily yellow fever produces only yellow fever. * * * *Modified* yellow fever can mean nothing else than yellow fever presenting itself in a milder form. Modified small-pox is still small-pox. Variola and varioloid are one and the same disease and have never been supposed to be two distinct diseases. The poison of variola, when it infects a human organism partly protected by vaccination, produces varioloid. The poison of varioloid, when it infects unprotected organism, produces variola, that is to say, genuine, unmodified small-pox."

As may be seen from the above, the teaching of the professor of public hygiene in Mobile is clear and precise: it is an idle fancy to consider "spurious yellow fever" as being "genuine yellow fever modified, and modified of course by carbolic acid;" such hybrid offspring does not and cannot exist. The professor thinks that the *febrile species* are, I should say, *immiscible.* *A fortiori*, there exists no acid or disinfectant capable of transforming febrile species into hybrid fevers Nothing can be more positive, plain and orthodox.

However, one of the members of the Advisory Board of Health, Professor Gilmore, of the same school, endeavored "to show that something can be said in favor of the "hybridity of diseases and spurious yellow fever." But Professor Gilmore is not as positive and precise as his opponent. The view he advocates is rather loose and elastic, and his opinion shows many changes in the course of his letter; we shall study it.

To start with, what is "spurious yellow fever" in Professor Gilmore's opinion? From what he says in the very beginning it results that "spurious yellow fever or dengue" is simply a mild form of yellow fever; before the 3d day it is impossible to distinguish the "genuine" from the "spurious:" "There are no positive signs of difference *until after the third day;* then, if the symptoms augment in severity, it is yellow fever; if they abate, it is dengue." The Professor calls upon several authorities to support his opinion. The first authority is that of Dr. White, "the worthy President of the Board of Health of New Orleans, who assured him that the fever that had swept over the whole of New Orleans, "dengue," was clearly and *unmistakably* the offspring of the yellow fever poison." "Dengue" unmistakably the offspring of the yellow fever poison! But how? Naturally, according to the Advisory Board of Health, of Mobile, "by the protective virtues of disinfection and fumigation;" of course with the carbolic acid.

However, this first authority does not satisfy Professor Gilmore; he then calls on the testimony of an illustrious dead, an ancient professor in the Medical Department of the University of Louisiana, the chemist and microscopist Riddell: "Dr. Riddell, of New Orleans, asserted that dengue and yellow fever originated from a common source. * * * He claimed that he had discovered, by patient search with the microscope, the spore which gives birth to yellow fever, and that some of the spores, *when modified by a mild winter*, in the succeeding year developed a "dengue."

"Riddell wrote about what he saw, and not what he imagined;" so says Prof. Gilmore. Now, when we examine the affirmations of Dr. Riddell, we have to conclude to the most marvellous results. Inasmuch as Dr. Riddell has imagined nothing, and has only written of what he has seen, he must have actually seen the *spores* which produce yellow fever (such being then authentatively veritable *spores*); and he must have also by all means experimented on these spores. For instance, he must have successfully operated to *isolate* the spores, in order to place them under the influence of a "mild winter;" he has then not only been successful in that delicate operation, but *he has seen* (by experimenting, I suppose, in his laboratory), he has seen that "when modified by a mild winter some of the spores, in the succeeding year (what a patient search!) developed a dengue." Has Riddell, then, inoculated these spores, when modified by a mild winter? and has he seen dengue originating from the delicate operation?. This small point of the subject has not been explained. * * * It had some importance. The microscope is then a dangerous instrument: those who make use of it are easily tempted to go beyond the limits of its power, and then very often they are not conscious that their *imagination* has actually taken the place of the instrument, which had not proved powerful enough.

Second question: "Hybridity in Diseases." What is meant by "hybrid fevers?" We know that in natural history a hybrid is the product of the conjugation of two separate species; in medicine it must be something similar. As regards hybridity, how can we conceive of "spurious yellow fever or dengue?"

1st. We have seen that, in the opinion of the Advisory Board of Health of Mobile, "spurious yellow fever or dengue," which is a hybrid fever for Professor Gilmore, must be considered as originating from "genuine yellow fever," modified by carbolic acid.

2d. Riddell's opinion was that the same fever (spurious) originated from "genuine yellow fever," modified by a "mild winter."

There exists a third opinion; many more of the sort could exist: "With the poison of dengue, the poison of yellow fever and malaria, blended, we have an *intermixture* which, in some instances, would resemble yellow fever, in others dengue, and still in others, malarial fever." So says Professor Gilmore. Now, then, we have a special poison for dengue, a poison for yellow fever, and a poison for malarial fever! Dengue, then, is a febrile species, as yellow fever is another one, and malarial fever still another. Such is, I think, the opinion of the majority of physicians; but, what has not been properly understood so far, is that the poisons, or *morbific principles*, of these three species can form an *intermixture*, or rather diverse *combinations*, from which diverse "*hybrid fevers*" may result, such as "spurious yellow fever," "spurious dengue," "spurious malarial fever," and several more "spurious fevers."

I am simply drawing deductions, and these are inevitable.

Logic does not allow that we should stop on such a fine path. The doctrine of "Hybridity in Fevers," widens as we examine it, and more so, perhaps, than its author would like. For if "with the poison of dengue, the poison of yellow fever and malaria, blended, we should have an *intermixture* which in some instances would resemble yellow fever, in others dengue, and still in others malarial fever * * *" I do not see why, "with the poison of plague, the poison of cholera and typhus, blended, we would not have an intermixture which, in some instances, would resemble cholera, in others plague, and still in others typhus." It appears to me that Professor Gilmore cannot take that for exaggerated generalizing; it is the dictate of logic; and instead of choosing plague, cholera and typhus, for an intermixture, I could even have chosen any other diseases, any other fevers, in such a way that we can only be limited, in such generalization, by the boundaries of nosology.

Such a doctrine is assuredly very wide, perhaps new; but it is undoubtedly fancy; it is a real medical fancy.

However, Dr. Gilmore is, *bona fide*, satisfied that he has faithfully followed the dictates of strict clinical observation. Riddell himself was likely under the same impression. "We are not theorists," he affirms; "we state simply facts, and the suggestion making the simile was from what we have seen, at the bedside, and not from what we imagined from reading authors."

The theory of "hybridity in diseases," such as it has been imagined by Professor Gilmore, is assuredly not to be found in the authors. Now, can we find *clinical facts* to stand as a ground for this monstrous theory which he seems to have unconsciously created?

All practitioners have seen patients laboring under the *simultaneous* influence of several different *blood poisons* or *morbific principles.* What is the process going on in such cases? Let us take, as an illustration, two distinct species, scarlatina and variola, for instance. The pathognomonic signs of these diseases are external and easily recognized. In the very few cases of the kind I have met with, I have not seen that the march of the variola was disturbed by the influence of scarlatina. Both eruptions proceeded together, that of scarlatina being more or less spotted by the pustules of variola, and its red color being joined with that of the pustular growths, in such a way that variola predominated. I have not seen, then, any *intermixture* "which in some instances would resemble scarlet fever, and in others variola," with the indication that a *hybrid offspring* was the result of that *intermixture*. Let us take another illustration from the very species mentioned in Dr. Gilmore's article, such species being far more distant from each other than the above named. It is not infrequent in New Orleans to see a patient taken with yellow fever when suffering from intermittent fever, after he has presented several well-defined paroxysms, and before any specific treatment has been used. As soon as the powerful *continuous* fever, yellow fever, begins, it is the predominating trouble; its unique and continuous paroxysm runs its course, as if it were alone, and nothing can stop it, neither quinine nor anything else.

Now, when the continuous and regularly decreasing febrile reaction of yellow fever has subsided, are the separate paroxysms of intermittent fever renewed? I have no recollection of having witnessed such a process, for the reason that I always took it to be my duty to administer sufficient quantities of quinine in all like circumstances. On what grounds, then, can any one be justifiable in saying that "we had an *intermixture* which, in some instances, resembled yellow fever, and yellow fever in its *one* and continuous paroxysm," and in others "malarial fever, with its *several*, multiple, and distinct paroxysms?" Undoubtedly nobody.

Dr. Gilmore's enthusiasm about "hybridity in diseases" has led him, I fear, as far as "*Darwinism*." What means this phrase: "It is difficult to say where the monkey leaves off and man begins * * * ?" Is the characteristic derived from the number of *hands* no longer a special distinction in man? Bimana and Quadrumana are to be confounded by imperceptible shades!! "It is difficult to say where monkey leaves off and man begins!" If that be the case, the difference between man and quadrupeds will have to vanish very soon. And yet this is not all: the distinction of species, commanded by the sterility of mules, must have no meaning, and even the utter impossibility of fecundation could no longer form an insuperable barrier between the "genre humain," or rather the *règne humain* and the *animals!* * * * Has modern *advanced* science exhibited or does it intend to exhibit the monstrous offspring of the Guenon and Man? If so, what a horrible and repulsive PROGRESS this so-called *advanced* science has dreamed of!

Happily all such ideas have to prove speculative and abortive.

Darwinism shall not strike roots, even in our Southern States, where, thanks to God, the material interests that could have favored such a doctrine have been done away with.

The "febrile species" do really exist, and that as represented in the *animalcular theory* of zymotic affections. I cannot tell when Sir Henry Holland published his ideas on the "animalcular origin of zymotic diseases," but I know very well that Borden, in the last century, considered that theory as an *ancient* one: "When considering how morbific miasma behave," says Borden, "one cannot help recalling that physicians had been impressed with the idea that these *miasma* are to a very great extent *in a condition of life*, so much so that they were considered *as animals*, which gathered to take possession of bodies * * *" And that great observer declared that this *animalcular theory of fevers* was more natural than all the others. It follows that Sir Henry Holland is too young to have the honor of that theory; the *ancients* had taken precedence of him.

We know no more about that *theory* than Borden did, and it still remains an *hypothesis:* Professor Gilmore says that, "These little mischief-makers are so infinitesimal, that they are beyond our ken with the microscope, in the opinion of the major part of the profession, and have no real existence, except hypothetically."

However, this hypothesis is based upon such plausible and inviting reasons as to command conviction.

It is necessary, however, that I should make a few remarks on the subject. If it be granted that the *fever-generating animalculæ* exist, it follows that *they*, and not the *fevers*, constitute the *species*.

The *fevers* are merely the *effects*; their *real causes*, "*essential entities*," are the *fever-generating animalculæ*. We must mark that these *effects* called *fevers* can only exist for the physician, *as being fevers*, when by his mental action, he has studied the symptoms, brought them together, gathered, and analyzed, and when, with the groups of symptoms, he has formed what we call "specfic fevers" or "essential fevers." With that view, is it definitely established that dengue exists as a "febrile species?" When the natural groups of symptoms are well marked, and, above all, when pathognomonic signs are evident, then the species exists. Is it the case with dengue? As for yellow fever, our opinion is that the thermometer and watch have shown its *specific signs*.

We can easily ascertain, when contemplating such important questions, how much better the standpoint of the naturalist is than that of the physician. The naturalist studies and classifies things that are obvious to the senses; the physician, on the other hand, or at least the *pyretologist*, is compelled to gather his various groups, to organize his febrile species, from phenomena the causes of which he ignores, and that even when these *obscure causes* only can constitute the real species, as forming the *only real beings*.

It follows that the physician, whilst modestly acknowledging the superior position of the naturalist, has to give up the natural history of the febrile species, or must conclude to follow the naturalist in his conceptions of animal species; he must especially, by analogy, apply to the *animalcular fever-generating species* what he learns of the animal species of natural history. Now, there are *principles* in zoology which are so definitely settled that it is really strange to ignore or forget them: one of these is the *inconvertibility* of species. Thence, if the *febrile species* actually exist, as has to be conceded, at least by analogy, we are compelled to boldly and absolutely deny the convertibility of such species, one into another.

It is precisely in order to assert positively the *inconvertibility of febrile species* that I have insisted on the foregoing considerations, however abstract they may appear to many.

Now, Deveze, who is, I think, the creator of the theory of "infection" in yellow fever, wrote the following: "When yellow fever exists in the West Indies, the inhabitants of these islands are exposed to intermittent fevers, remittent fevers, dysentery and typhus. *Yellow fever can be changed into these diseases as well as these can be changed into yellow fever.* And, although it generally presents the remittent type, it can, however, show the continuous type, and even the intermittent type" (p. 196).

In reference to these words of Deveze, I shall simply recall, much esteemed confrere, that that celebrated author had devoted himself, as Pugnet and Chervin, to what can be called the *paludal theory* of yellow fever. That theory teaches that yellow fever is the highest degree of malarial fevers. The few belated partizans of this ancient and forsaken opinion could not easily renew it in our days. But it shows how physicians who practice in hot and malarial climates have always been misled by the various aspects of malarial fever. In my opinion, all diseases that are apt to interchange belong undoubtedly to the same species; in consequence, all such diseases as yellow fever, intermittent and remittent fevers, dysentery and typhus, which Deveze innocently thought could interchange, were in reality *forms* or *varieties* of *one species—the malarial species.*

That *convertibility* of the numerous *forms* which belong to this largest section of pyretology, the "MALARIAL KIND," is a very important subject of investigation, and I intend to present a sketch of the subject for one of the coming numbers of your Medical Journal. I think I can find in my papers a sufficient number of facts in favor of that convertibility to furnish ground for a study of the subject. A large book could be written on "metamorphosis" of malarial diseases, on the plan of Dr. Yvaren's book on "Metamorphosis of Syphilis." The epigraph selected by the distinguished physician of Avignon would be a suitable one:

"* * * Facies non omnibus una,
Nec diversa tamen, qualem decet esse sororum."
—Ovid (Metamorph).

If there is a *nosological species* whose *morbid individualities* present a *family appearance (un air de famille)*, it is assuredly the malarial species. It is an immense advantage to the practitioner who has properly comprehended that similitude, as it is to recognise the *copper color* of syphilides; but only experienced eyes can make such recognition.

Now, much esteemed Dr. Bemiss, after the foregoing general considerations, permit me to put some few more questions. Your confrères are entitled to the privilege of applying to you, when in doubt, on the ground of your double position as a professor in the University and director of the Medical Journal of our State.

Let us suppose that the intimate nature of "dengue" be questioned, and its right to be maintained as a febrile species, in the nosological list, where it has been introduced only for the last fifty years, be questioned also, *have we actually had to deal with that disputable "dengue" in Mobile and New Orleans*, during the summer of 1873? Have you not, as I have, some doubts left on that question, in spite of the general opinion that seems to exist in the medical community?

To start with, I should say that the most interesting features in the "dengue" fever, considered as a "hybrid disease," are not to be found in the said "dengue" considered as being "yellow fever," "modified" by something, whatever it may be. He who is familiar with the epidemics described, during the last fifty years, under that or like headings, is above all, struck by the large number of different forms of such epidemics; so much so that dengue, which is perhaps the most recent among the epidemic fevers of modern times, should have presented already the most numerous and most diverse forms!

An *eruption* has been the most striking feature in some epidemics of dengue; were it a simple redness, papulæ, vesicles, or even pustules, it constituted an *eruption*, and some nosologists located dengue among the "eruptive fevers" (Dr. Rochard). In Senegal, an epidemic described by Dr. Barnier has been styled "exotic red fever."

In other epidemics, general acute *pains*, presenting somewhat the mobility of rheumatic pains, have constituted the most striking feature; such epidemics of dengue have been styled "rheumatic" (Dr. Furlonge). One of these, on the coast of Africa, has been described by Thaly under the name of "articular fever of hot climates."

We must acknowledge, however, that in most of the so-called epidemics of "dengue," the observers have noted the *eruption* and the *pains*. "Dengue" is still known by the name of "eruptive rheumatic fever," and even still better by the terms "scarlatina rheumatica" (Copland). Such are its best claims to hybridity.

What can our conclusion be? It is questionable that "dengue" constitutes a true febrile species. Then, if it cannot be considered as a "hybrid fever," what must we think of it? Must we submit, with Sedman, to calling it "*abnormal* epidemic disease?" It is no solution. Can we not incorporate it into some section of "fevers of hot climates?" Dengue might not prove quite a stranger in the "grand endemic" family. Let us examine that point.

One thing certain is, that in Mobile as in New Orleans, all agree that the *eruption* has proved *exceptional;* and I, for my part, have seen, in the course of several other preceding epidemics, most well-marked "mucous paludal fevers" presenting *erythemas;* and these were much more marked than the few transitory red spots on the skin that I have seen, in rare instances, during the epidemic of 1873. Besides, the clinical fact of *erythemas* occurring in "mucous fevers" has long been established. Pinel is sufficient authority for it.

As regards *pains*, when compared with those of variola in its first stage, or those of yellow fever, which they so much resemble, I think that what is said is correct; but if *true neuralgias* were meant, I think these have very rarely occurred, and have been perhaps less frequent than the eruption.

Now, shall dengue be excluded from the "grand endemic" family, on the ground of its extreme benignity? Why should it? Do we not meet with *benign epidemics* of very malignant fevers? Does not the formidable yellow fever show such forms?

The first epidemic I observed, in 1847, was mild. Yellow fever had not showed itself in New Orleans since 1839, and during that long lapse of time Irish emigration had gathered a large number of fit subjects for it. We had, of course, a large number of patients, and also a large number of cures, so that all the patrons of *specific medications* were triumphant; but when the partizans of *expectation*, and the homœopaths, came in with their returns, it was ascertained that *nature* had the largest share in these results, I think that the average showed 14 cures in 15 patients; at least it was so with me.

Such epidemics have allowed Dr. Rochard, in his article on "Dengue," in the last French Dictionary of Medicine, to write that "several epidemics, taken to be yellow fever, in the West Indies, and which proved unusually mild, were likely to have been epidemics of dengue, in which the eruption was absent or passed unnoticed."

Our epidemic of 1847 keeps me from accepting such an opinion. In spite of its *unusual benignity*, it was as much like yellow fever as any that I have ever seen, and especially like the yellow fever epidemics that had raged in New Orleans during the preceding fifty years: confined within the limits of the city, it proved fatal, as all the preceding epidemics, only to foreigners, all adults and white. Has dengue, even in its greatest benignity, ever showed such partiality? In consequence, the epidemic of 1847 was a *benign epidemic of yellow fever*, and it was an epidemic of pure yellow fever.

But, if yellow fever shows mild epidemics, why would not the same thing obtain with the "grand endemic"—the "paludal of hot climates?"

All fevers, the *paludal* as well as the others, have their "ephemera," their "febricula;" then, a single *paroxysm* constitutes the whole trouble, as is the case with "dengue," as also with "febricula." But what is meant by "febricula," which, like "dengue," and especially the light malarial fevers, has an *erup-*

tion? ("an eruption of roseola or erythema," says Aitken, in his chapter on "Febricula.")

Moreover, if the "dengue" fever of "authors" is a *unique paroxysm*, as "febricula," it is one more reason to think that we had not to deal with dengue in the summer of 1873, in New Orleans. For, during the *epidemic* of that year, the fever has shown paroxysms in all cases when not very mild. You have, yourself, Professor Bemiss, in your article on "Dengue," made this remark: "The febrile movement was never intense, and *differed widely* from that of yellow fever, or indeed from *the fever as* it usually occurs (in dengue), according to Dickson and other observers. The difference consisted in the *frequent fluctuations of the pulse* and *temperature*."

This is what you have observed, and what I have observed also in the small number of cases that have proved serious. In the majority of cases I have not used the thermometer or the watch, for they were very mild cases; but I have (in our few serious cases) never seen, as in yellow fever, the pulse decreasing in "dengue" when the temperature was still on the increase, during two or three days: *irregularities*, *fluctuations* in the march of the fever—such are the indications given by the instruments in your cases as well as in mine, "showing the contrast between the usually *uniform* febrile movement and pulse record of yellow fever, and their *irregularity* in the epidemic fever of 1873."

Professor Gilmore, on the other hand, has found in the so-called "dengue," in Mobile, "the pulse and temperature of yellow fever." But he does not say if "the pulse and temperature of yellow fever" in Mobile have shown the same movement as observed in New Orleans, by the watch and thermometer, in true yellow fever.

That case of "dengue" in your practice (I mean, of course, the *benign epidemic fever* of 1873, in New Orleans, in which on the third day the temperature reached 104.9° F., and which "the next morning was dismissed from further treatment") is a very remarkable one. Assuredly nothing like it has ever been seen in yellow fever.

In yellow fever, true *relapses* are unknown: in our late epidemic fever they were of frequent occurrence. My personal experience here again agrees with yours. "It was a common thing for relapses to occur," says Dr. Bemiss, and "the relapses were sometimes marked by a reproduction of all the symptoms of the initial attack; at other times they implied simply a febrile exacerbation, with an aggravation of the subjective symptoms."

We have, then, good reasons—1st, not to believe *too easily* that the *benign epidemic fever* that prevailed in New Orleans during the summer of 1873 has been the "dengue;" 2d, to be positive that in all possible contingencies, it had nothing to do with yellow fever; 3d, to positively assert that, above all, it could not be "yellow fever modified," rendered "benign" by fumigations of carbolic acid, so largely used in our streets, and even, I was informed, in houses where unhappy yellow fever sufferers happened to be detected.

Physicians must be informed of the "true value of carbolic acid as a modifier or *destroyer of yellow fever poison.*" "*The New Orleans people seem to applaud it,* which they would not likely do, after three years experience, if it augmented the severity of the peison, and in no apparent way controlled or modified it." The above is Professor Gilmore's language. I acknowledge that the praises of the *people of New Orleans* in favor of carbolic acid "as a destroyer of yellow fever poison" have not reached my ears. And as for the physicians, I do not know of any one who is satisfied that carbolic acid has been the active agent in preventing yellow fever from spreading beyond the limits of the small portion of our city, in which it has remained this year, as it has also been seen to do in many other epidemics. I could still less point out one *physician* in New Orleans who should admit that, in our presence, fumigations of carbolic acid have changed into a "benign dengue" an "epidemic fever" which, in the absence of that influence, was to be a terrible "epidemic of yellow fever."

The brain must be terribly strained to imagine or believe such things! It already requires a good deal of imagination to be satisfied that medicinal vapors artificially spread in the wide streets of a city like New Orleans, where air currents are so free, shall meet and effectually destroy the "fever generating semina" that might happen to be in suspension in the vast and movable atmosphere. Such a thing might perhaps be more reasonably expected to occur in the hold of a ship, in houses, or, still better, in a patient's room.

But here we are admonished to beware of a danger: Professor Cochran, in the "Mobile Register," says that the excessive and exceptional mortality in the recent epidemics, particularly in

Shreveport and Memphis, might possibly have its origin in the abusive use of carbolic acid.

I cannot do any better in terminating this article than to reproduce a few lines from a private letter I had the honor to receive quite recently from that "savant confrere:"

"My views of the inefficacy of ærial disinfection with carbolic acid are abundantly confirmed by the experience of Memphis, during the present epidemic, of which, through the courtesy of Dr. Erskine, President of the Memphis Board of Health, I am now in possession. They used there carbolic acid in immense quantities, with no appreciable effect whatever. And now comes Dr. Letheby, of London, to tell us that it requires in the air of any of the usual disinfecting agents not less than one part to a thousand parts of air to destroy the living germs of diseases, and that *air contaminated to this extent is not fit for human respiration.*"

It follows that we have a good deal to do yet, a good deal to learn, concerning these difficult questions of public hygiene, before we can be legitimately allowed to submit a whole population to the *experiments* which we have undergone during late years. Let us then accept the teaching of specially qualified men.

Such are the reasons why I have thought proper to call the attention of the medical body to all these questions, by applying to you, much esteemed confrere, through the columns of your very important and useful Medical Journal.

Recevez, je vous prie, l'assurance de ma haute consideration.

DR. J. C. FAGET.

Yellow Fever in Calvert, Texas, in 1873. Communicated by W. L. Coleman, M. D.

EDITOR NEW ORLEANS MEDICAL JOURNAL:

Permit me, while occupying a convalescent's chair, to give you a brief account of the epidemic which has just ravaged our little village, and which, it is probable, would still be raging but for the want of subjects. Calvert is situated in a low sand-flat on the Houston and Texas Central Railway, one hundred and thirty miles north of Houston, and five miles from the rich Brazos bottom. It has been one of the healthiest points on the road until this summer, but our authorities had not adopted any sanitary regulations, and Main and Railroad streets were in rather a filthy condition. A mile and a half south of us, directly on the railroad, is a beef packery, where a great number of beeves are slaughtered every winter. The entrails, heads and refuse parts, are thrown out, and left to decay and fester in the summer's sun, producing an awful stench, which is often wafted by our prevailing wind even as far as the town. Not very pleasant, certainly, and calculated to engender an atmosphere suitable for the propagation of almost any poison which might be introduced here—the yellow fever germ would not ask for a better. During the months of July and August we had an unusual number of cases of malarial fevers, of a very obstinate and unyielding character, though few of them proved fatal. On the 3d of September, a young man named Hughes arrived here, fleeing from yellow fever in Shreveport. He had been in business there as a clerk, and the fever had been prevailing for some time before he left. He was very much excited and alarmed when I first saw him. On the night of the 5th he was taken with a chill, and I was asked to see him twenty-four hours afterwards in his room at the Hayne's House. He presented all the characteristic symptoms of true, genuine yellow fever, of the most malignant character. The upper portion of his face was of a dark purplish hue, the temperature high, and the pulse, which had already reached the maximum, was beginning to decrease. The tongue was heavily coated, and he complained of soreness of his throat. I ordered three compound cathartic pills, and a mustard foot-bath. The next morning the pulse had reached eighty-four, and was still steadily decreasing, the temperature being rather on the increase. The mucous membranes of the mouth, throat and nostrils had become spongy, with tendency to hemorrhage, a considerable quantity of dark, black blood being discharged from these surfaces during the day. The following morning—Monday, September 8th—his pulse was down to sixty, and the temperature almost normal. Had he remained quiet he might possibly have recovered, but feeling much better, he concluded to change his boarding-house, and without consulting me, got up, dressed, and walked the distance of two blocks to Main street, and took a room up stairs in a brick building. On visiting him an hour afterwards I found all the symptoms aggravated, with incipient delirium, and his body turning very yellow. He continued to grow worse, and died about 6 o'clock on the morning of the 10th, throwing up a small amount of black vomit. The day before he died, I requested two prominent physicians of the place, who afterwards fell victims to the fever, to see him with me and diagnose the case. They both refused, stating they had never treated yellow fever, and did not wish to expose themselves and patients to sporadic cases. After his death I pronounced it a case of yellow fever, and made the attempt to have the bedding burned and the room fumigated, and got laughed at for my pains. Several parties who had had the fever elsewhere, and who "knew more about it than any doctor," visited the dead body, and hooted at the idea of its being a case of yellow fever. So much was said about the "Coleman fever," as it was called upon the streets, that I thought it prudent to remain silent and let the community find out for themselves, as they would not listen to my advice. The disease never had a better opportunity to spread than it did here. The bedding upon which Hughes died, instead of being burned, was thrown upon the roof of a little house almost at the foot of Main street, and left there three weeks in the sun. The prevailing wind blowing almost up the street, the whole town soon became impregnated with the poison. On the night of the 10th, I was called to see the clerk of the Haynes House, who had waited upon Hughes while he was in the house. He was feeling very badly, and was very much alarmed lest he was taking the fever. I quieted him, however, and gave him some simple medicines, but in two days he was down with a well-marked, though mild attack of yellow fever. He made a very good recovery, but subsequently relapsed, and died with black vomit. In a few days I was called to a young Jew, who had slipped into town with the fever on him. I never could learn exactly where he was from, but was pretty well satisfied that he came from Shreveport. His case was as well-marked as the first, and he was very sick for eight days, but finally recovered. In ten days, several cases had occurred in different parts of town, no one else, as yet, believing it yellow fever but myself. On the morning of September 23d, Mrs. Haynes, proprietress of the hotel, was taken sick, and died on the morning of the 27th with black vomit. I immediately called a consultation of all the physicians in town, and Dr. Morrison from Hearne, and insisted upon their visiting all the cases on hand and deciding what the disease was. They visited three other cases, which afterwards died that night, one of them throwing up black vomit freely at the time of our visit, and agreed with me that it must be yellow fever. This decision of ours of course produced a panic, and every one who could, began making hurried preparations to leave. By Monday morning there were not more than six hundred white persons left in town, who had resolved to stay, and very few of these had ever had the fever, but they were afraid the poison was already in their systems, and they concluded it would be safer to remain in town, where they could be treated for it. I learn that a great many who did get away had the fever elsewhere, and some died, and in some instances it was communicated to the country people.

On Sunday night, September 28th, while visiting a patient, I was taken with the fever and went home to bed. Monday morning the authorities telegraphed to Houston for aid. Three physicians were sent up to examine into the disease and report. Two of them, and one an old physician of forty years' experience in your city, after remaining here twelve hours, decided positively that there was not a case of yellow fever in town, and returned. Dr. Howard, who had taken charge of me, remained, stating that I had yellow fever, and that there were several other cases in town. He stayed until Friday, and left me convalescent and able to sit up. Unfortunately, my friends commenced sending for me, and I could not refuse to go though really too weak. My own children were taken down with the disease, and having to be up with them at night, I relapsed in a few days and came very near dying.

I will say here, I do not understand why so many physicians who have frequently treated yellow fever, so often fail in their diagnosis of the disease in the commeneement of an epidemic. While I had the first case on hand, I was deeply interested in studying Dr. J. C. Faget's communication in the September No. of your Journal, which, by the way, is the ablest article I ever read upon the subject. His description of the type and specific character of true yellow fever is so lucid as to render its diagnosis as easy as that of variola, or cholera, and any intelligent physician who studies that article ought to be able to recognize a case of pure uncomplicated yellow fever wherever he meets with it.

Well, the decision of these old yellow fever practitioners rendered my opponents jubilant, and the "Coleman fever," as it was termed, was allowed to have its course once more. What could he, a little village practitioner, know about yellow fever, said they, when these city physicians had decided *positively* that there was no sign of the fever here. However, by Saturday, October 11th, there were so many sick and dying, that more physicians were telegraphed for, and a delegation of fifteen from Galveston, Houston, and other points on the road, arrived Saturday night. They immediately visited two cases in the Haynes House, decided at once that the disease was yellow fever, and were ready to go back by daylight. They returned the following morning, leaving the community in as bad a fix as ever. I was up, but ought to have been in bed, and there were only two others of our local physicians able to be out, and they were broken down, and fell victims to the disease in less than ten days. The rest of our local faculty who were not sick had found it very convenient to go to the country. Among them was a prominent medical person who had been doing, according to his account, seven-eighths of the practice here this summer, and had not met with a single case of yellow fever. He left three of his patients dying with it, two of them throwing up black vomit at the time. He is now in a city not a thousand miles off, perhaps discoursing of "what he knows about yellow fever."

By the following Sunday, October 19th, we were in a deplorable condition. I had relapsed badly. Dr. Field was dead and Dr. Gilson dying. There were over a hundred sick with the fever, and they were dying six or eight a day. On Monday a delegation of physicians from Houston and Galveston arrived with nurses, rolled up their sleeves and went to work in earnest. I fell into the hands of that old veteran yellow fever physician, Greenville Dowell, of Galveston, who had volunteered his services, and, thanks to a kind Providence and his skill, I and my children, six cases in all, recovered without the loss of one. I shall ever hold him in grateful remembrance for his untiring attention, and for the words of cheer which were ever ready to fall from his lips. May Heaven bless him in his declining years.

It is impossible to give a correct estimate of the number of persons who remained in town, or of the number of cases—the different estimates vary from four to six hundred. I have written to Dr. Dowell for his estimate, but have not yet heard from him. Our village contains a population of about fifteen hundred whites, and since my recovery I have driven over town, and counted a little over six hundred remaining here. Of these, at least four hundred and fifty had the fever, and one hundred and twenty-five died—an awful mortality. Among that number were four physicians, two of our resident physicians, and two of the noble volunteers who came to our aid. They immortalized themselves, and now fill the graves of earth's noblest heroes. Peace to their ashes. There were more relapses in this epidemic than I have ever seen before, and many of them fatal. Some have occurred six weeks after the first attack. The pulse of the majority of those who have recovered is exceedingly rapid, varying from 90 to 120 per minute. My own has never been less than 90, showing that the heart is the organ most seriously affected by the poison. I have made several examinations for life insurance among the convalescents, and they will not pass on account of the rapidity of the pulse. Pregnant females have escaped better than was ever known before, there being a good many here who had the fever, and not one has died.

I feel constrained to give my humble views upon the origin of yellow fever, from the fact that two of the oldest physicians, who came to our aid, contend that it originates wherever it prevails, and that this fever had its origin in our midst. I thought it had been conceded and admitted and *proven* by the profession generally that the germ, the materies morbi of yellow fever, could be conveyed in woollen goods, the holds of vessels, and the human system, from one point to another. This has been so clearly proven to my mind I had put it down as *one* of the *fixed facts* of yellow fever, but from reading the different articles published from time to time upon the subject one is led to believe that there is no fixed fact in regard to yellow fever. And the physicians all over our southern country have made themselves a laughing stock for the public by their crude and undigested views about this disease, and by their wrangling and uncertain diagnosis at the commencement of every epidemic. No wonder the people have lost confidence in the profession, and when an epidemic occurs take the treatment of the disease into their own hands, as they did here, nurses interfering with and taking the place of physicians, thus causing an immense death rate. If this fever was not introduced here by Hughes, the refugee from Shreveport, then there is nothing certain under the sun. I treated him and watched closely the course of the disease, and could clearly trace the next five or six cases to him. It is on record that the fever was introduced into New Orleans on the 4th of July, direct from Havana, was carried from there to Shreveport, and from thence to Memphis and this place. I differ not only with these two gentlemen, but I expect I differ with the majority of the profession in regard to the origin of the disease, and no amount of reasoning, aside from facts, can ever convince me that the disease is indigenous to the United States, or that a case *ever* originated within our boundaries. It has its origin in the torrid zone, from what condition of things we know not, and in every epidemic that has occurred in our country, where an authentic account of its origin has been kept, it is proven to have been imported from a foreign port. During the war, when the Southern coast was closely blockaded by Federal vessels, no yellow fever occurred west of the Mississippi, except in Houston, and that was introduced via Mexico. The germ which constitutes the specific poison of the disease is undoubtedly an animalcule, a living, organized existence, which requires a certain amount of heat, moisture, and probably decayed animal and vegetable matter in the atmosphere for its sustenance, and whenever it is introduced into a locality where the atmosphere contains these necessary ingredients, it propagates and spreads with almost the rapidity of thought. These animalculæ are introduced into the human system through the medium of the air passages directly into the arterial circulation, and of the effect they produce there I will speak more fully under the head of treatment. I truly hope and believe ere five years have passed the whole profession will be thoroughly convinced of the exotic character of this fell destroyer, and that ere another epidemic devastates any portion of our country they will have learned its characteristic symptoms so as to be able to recognize it wherever they meet with it.

In regard to the diagnosis of yellow fever, I am not yet prepared to give to the public all my views, and I am still too weak to enter into an elaborate discussion of any of the facts connected with the disease. Suffice it to say there are characteristic symptoms belonging to the true uncomplicated disease, which are as unchangeable as those of variola, and when once seen and understood are never to be forgotten. The people, and many physicians, contend that every epidemic is different from the preceding, but I will never admit this. They say the disease is constantly changing and that there are no symptoms, which characterize it, by which it can be readily recognized. I have been studying yellow fever since 1855, and I see no difference between the fever of this year and of that or of any epidemic that has occurred since then. I speak of true, genuine, uncomplicated cases. Of course the disease is modified and changed, more or less, by the locality into which it is introduced, and where it is complicated with malarial fever some of the characteristic symptoms are wanting, and it does not run the regular course of a pure case. From my observations in this epidemic I am satisfied where a person's system is fully saturated with the miasm which produces intermittent fever it is difficult for the yellow fever poison to find an entrance. Nearly all the cases which are occurring now, at the time of this writing (November 15th), are in persons who have been suffering with chills and fever during the summer, and who, though exposed all the summer, have resisted the yellow fever poison till now. They are nearly all fatal cases. At the first glance it would seem they are the first persons who ought to be attacked, but there seems to be a kind of incompatibility between the two poisons, not complete, for the two diseases are often found in the same patient, though I think the poison which is most firmly established holds the other in abeyance until it runs its course. Where the yellow fever poison is introduced into a northern latitude, and finds a suitable temperature and atmosphere for its propagation, it prevails with more virulence, and there are more pure, genuine cases than in a southern latitude, owing to there being less malaria.

When we come to the treatment we find a greater diversity of opinions, if possible, than in regard to the origin and symptoms. A great many persons have become skeptical about treatment, and say physicians do no good, and really to the calm, reflecting mind, after reviewing the different and sometimes directly opposite methods of treatment, it does seem as though a greater number would recover without medicine than with it, provided they could be kept in bed and properly nourished. Now the intelligent physician should always have his indications clearly defined in his mind before he attempts to prescribe for any disease. What are the indications of treatment in yellow fever? This will depend upon the view each individual practitioner takes of the action and effect of the poison in the system. And here I must say I differ with Dr. Faget when he says, "this specific action of yellow fever poison on the heart can be compared to the effect produced on that organ by certain poisons, as, for instance, digitalis and veratrum viride." The action of these natural poisons on the heart is produced through the medium of the brain and nervous system, and as soon as their effects wear off the heart resumes its normal action, because the blood has not been corrupted or destroyed by them. In yellow fever the poison, as I have said, is introduced directly into the arterial circulation, and its first effect is to rapidly destroy and impoverish the vital stream, rendering it unfit for the nutrition of tissues. The heart, through which it has to pass, failing to receive its natural stimulus of pure, healthy blood, soon begins to fail in its action. The brain, liver, kidneys, and other organs not finding the material necessary for their nutrition and the performance of their functions in this poisoned stream, also fail in their natural action. Soon all is confusion and distress throughout the animal mechanism, and the pain, nausea, and other sufferings of the patient are manifestations from the different organs of the presence of the invader. The failure of the various organs to perform their duties of assimilation and elimination increases the trouble. The red corpuscles of the blood being rapidly destroyed by the poison, and the effete particles of every part of the body retained in the circulation, and not thrown off by the emunctories as usual, the vital stream becomes so polluted as to be totally unfit for the wants of the system. The heart, the mainspring of life, finding no more pure blood sent to it, loses its vigor and takes on that *feeble action characteristic* of the disease, and finally ceases its action, because the blood, the life, has been destroyed and disorganized by this specific poison. The increase of temperature in the first stage of the disease is easily accounted for by the increased combustion in the lungs in nature's first effort to rid itself of the poison.

If my view of the action of the poison is correct, then the indications of treatment are very clear, viz., to bring into action all the excreting and depurating forces of the system to eliminate this poison, and to remake the blood as rapidly as possible. I do not pretend to say I have discovered a plan of treatment which will accomplish this end, but I do say, that we need no digitalis, veratrum viride, calomel, or other potent nerve-depressor in this disease, for they will only act on the side of the enemy. I believe if that combination of "Blair's abortive"—the 20 and 24 quinine and calomel mentioned by Dr. Gilmore—had been administered to every case here, there would have been double the number of deaths. From my observations, the majority of those who got quinine and calomel in this epidemic either died or made bad recoveries. I am seeking truth, and am not prejudiced in favor of any particular plan of treatment, but would gladly use anything that promises to accomplish the indications mentioned.

Keeping in view, then, the fact that the poison is rapidly destroying the blood, the life of the patient, I endeavor, by exciting the skin and kidneys to increased action, to make them throw off as much of it as possible. I generally administer the usual cathartic, a dose of castor oil, and the mustard foot-bath, though if I see the patient in the cold stage, and he has a full stomach or any nausea, I relieve that by an emetic of *warm water*. After the establishment of the hot stage I allow him plenty of cold water, and at the same time, without reference to the pulse or temperature, commence with the following prescription, in which I place my main dependence, viz., tinct. ferri mur. ℥ij, spirits ætheris nitrici ʒss, glycerine ʒiss, ℞. S. Teaspoonful in a little water every two or three hours. I sometimes vary this prescription by using a drachm of potass. chlor. in place of the spirits nitre, from its known power of imparting oxygen to the blood. This combination is a good tonic, and at the same time a powerful diuretic, and will incite the kidneys to action when everything else fails. While administering the above, I order everything which I think will conduce to the patient's comfort. If his head aches, apply cold cloths or ice bags; keep the feet warm; rub the spine and extremities with a stimulating and anodyne liniment; apply mustard plasters all over the stomach and abdomen if there is any pain or tenderness in these regions, and continue their application, if necessary, until desquamation will take place in the end; keep him in a gentle perspiration, but never allow him to sweat profusely. As soon as the pulse reaches the normal beat in its downward course, I order a spoonful or two of some *liquid animal* food to be given every two hours, and two or three times a day a hot milk punch or egg-nog. And I impress upon the attendants the necessity of administering the nourishment and stimulants whether the patient relishes them or not. I feel certain that Dr. Dowell saved my life by his explicit directions upon this point; for when he reached me, I am satisfied that at least one-fourth of my blood had already been changed into black vomit, and was being deposited in the brain and other organs. I was partially delirious, but my wife had administered my doses regularly but could not get me to take nourishment. I loathed all food, but the doctor said that unless I took some, the disorganized blood would soon begin to ooze into the stomach, and death would end the scene with black vomit. For the burning pain frequently complained of in the stomach, I give 3 grs. cerii oxal., and if there is much acidity I order lime-water and milk, or prepared chalk. The above is a brief outline of treatment which has proved most successful in my hands. It fails, as all other methods do, at times, and in the present condition of our knowledge of medicine many will continue to die of this disease in spite of all the remedies we use. But I believe the time will come when we will discover the true antidote. I have been using for several years past, with great success, the hyposulphites and sulphites of soda, lime and magnesia, in the treatment of all zymotic diseases, and had conceived an idea that they would act well in yellow fever; but the time in which we have to work is too short, and even if they were to prove antidotes, the patient would die before we could build him up and remake his blood. It is possible that they would be good prophylactics,

W. L. COLEMAN, M.D.

Yellow Fever at Greenwood, La.—A Case of Contagion. By M. F. Leary, M. D.

The following history of an outbreak of yellow fever occurring in the country will be interesting to the sanitarian, as illustrating one way in which the disease may become epidemic, and at least one instance where it was propagated by contagion. It occurred in the family of Doctor F., a wealthy planter residing four miles east of Greenwood. The family consisted of Dr. F., aged 76 years, Captain F., his son, aged 48 years, nine sons of ages varying from 8 to 25 years, children of Captain F., and several colored servants. There were no white females in the family. On the 28th of September last, Harris, aged 22, and Voss, aged 19, two of the sons, returned from Shreveport, where they had been employed, and where yellow fever was prevailing as an epidemic. They brought no baggage with them, and were apparently in their usual good health. On the day following, Harris was taken ill with what appeared to be intermittent fever, and the succeeding day Voss was similarly affected. Quinine was freely administered to both. In two days thereafter Voss was well and around, but Harris was worse. I was called to see him October 2d, the fourth day of his illness, and found him with a well-marked attack of yellow fever. He died the next day (October 3d), having black vomit and suppression of urine prior to death. Voss had no symptoms of yellow fever, and it is probable that his attack was of a malarious nature. The *mattrass* on which Harris had lain during his illness was, after his death, taken out in the yard and left there from twenty-four to forty-eight hours, during which time a light shower of rain fell on it. The room he had occupied was ventilated by leaving the windows open for the same period, after which the mattrass was returned to the room, and from about the 5th of October used as a bed by other sons of the family. The blankets. sheets, &c., used about Harris were washed by a colored servant, and the blankets placed back on the bed from whence they were taken. The servant became ill a day or two after washing the clothing; was sick five or six days, and died on the 11th of October. No physician saw her during her illness, but it is known that she had great disturbance of her stomach, hemorrhage from her bowels, and other symptoms indicating that she died of yellow fever. She had not been around Harris during his illness, and could have contracted the disease only from the clothes she washed. For a week after the death of Harris the health of the white members of the family continued as good as usual. The room where he died was daily used by all, in the day time, and the bed in it was slept on indiscriminately by several of the sons, although Robert and Voss were its regular occupants. About the 9th or 10th of October, sickness again appeared in the family, and not yielding to the ordinary home remedies, the family physician, Dr. G. N. Riggins, to whom I am indebted for notes in the cases, was called in. He visited the house October 13th, and found four of the sons, viz., Robert, aged 25, Voss, aged 19, Lucien, aged 13, and Kelso, aged 10, suffering with yellow fever. With the exception of Robert, they were all light attacks, and all made rapid and easy recoveries. Robert had black vomit, but was convalescent by the 18th of the month.

On October 15th, Dr. F., the grandfather, was attacked with yellow fever. He slept in a detached building distant twenty feet from his son's house. He had been with his grandsons during their illness, and allowed one of the sick children to share his bed. He died on the 29th of the month. About the

10th of October Captain F. returned home, after an absence of five days, during which he received an accidental gunshot wound of the shoulder that confined him to his bed. He slept in a room on the opposite side of a hall, distant ten feet from the one in which Harris died. During his illness some of his sons suffering with yellow fever occupied a bed in his room. On the 19th of the month the Captain had the disease, and died of it on the 23d. In addition to these cases a colored boy, servant for Dr. F., who was in attendance on his master, and washed some clothing upon which urine and fæces had been passed, was taken ill with yellow fever about October 20th and recovered.

There were four sons who escaped an attack, although it is asserted that they occasionally occupied the room and, perhaps, the bed on which Harris died. A number of the neighbors visited the family and nursed them during their illness, none of whom were attacked. The disease did not spread to any adjacent dwelling.

There were nine other cases of yellow fever in the persons of refugees from Shreveport, in and around the town of Greenwood, two of them in Dr. F.'s immediate neighborhood, during the months of September and October, from none of which did there follow infection of persons or localities. The usual prophylatic employed was free ventilation, and after the termination of the case evacuation and ventilation of the *room* in which it was treated, and the destruction or exposure for a lengthened time to the air, of the bedding and clothing used about the sick.

It proved futile to examine Dr. F.'s premises for any local influences producing the outbreak of the disease. The ubiquitous cesspool and decaying organic matter upon which we are wont to throw the obloquy of epidemic visitations were absent, and the house and its surroundings were in as good sanitary condition as any residence in the country. Nor could it be ascribed to any general epidemic tendency, either atmospheric, or telluric, as this cause is at once eliminated by the occurence at the same period and in the same vicinity of nine other cases of the disease that were rendered innoxious by free ventilation, and it is reasonable to suppose that had the same care been exercised in regard to Harris's bedding and room as were observed in those cases there would have been the same immunity from contagion.

M. F. Leary,

Acting Ass't Surg., U. S. A., Post Surgeon, Greenwood, La.

CHICAGO, ILL., October 14th, 1873.

Editor of the New Orleans Medical and Surgical Journal:

In commencing a correspondence designed to keep your readers informed concerning such items of general interest as may be gathered in the medical societies, hospitals, and schools of this city, it may be as well to state the number and present condition of such institutions here. The Chicago Medical Society was organized in 1850, and was designed to embrace all the regular physicians in good standing who could be induced to attend its meetings. Its objects were the mutual improvement of its members, the promotion of harmony and social intercourse, and the improvement of the sanitary condition of the city. Its legitimate objects were pursued with steadiness and a reasonable amount of success until the great fire of October, 1871. This event not only destroyed its regular place of meeting, but suddenly threw many of its members out of their homes and ordinary fields of labor, and so completely destroyed all the central part of the city that no new, convenient place of meeting could be found for many months. The regular meetings of the Society were resumed, however, after a few weeks, in the office of Dr. N. S. Davis, and have been continued in various places up to the present time. But they have never regained their former interest, either in efficiency or in the number in attendance. In the mean time two subordinate societies have come into active existence and are very well sustained, one in the South and the other in the West Division of the city.

There are three regular medical colleges in the city. The oldest is the Rush Medical College, the buildings of which were completely destroyed by the great fire. Since that disaster the Faculty have occupied a cheap temporary structure erected on one corner of the County Hospital grounds. Dr. Moses Gunn, the Professor of Surgery, has a free surgical clinic in the college every Saturday; and the students of that school very generally attend the clinical instruction given in the County Hospital near by.

The Chicago Medical College, which is the Medical Department of the Northwestern University, has an elegant college building on the corner of Prairie avenue and Twenty-sixth street. Its noted feature as an institution, is its extensive and perfectly graded system of instruction. Its museum also contains one of the best collections of comparative osteology in this country.

The third medical school enumerated among the regular medical institutions, is the Women's Hospital Medical College. It was organized about three years since, and is exclusively for the medical education of women. It occupies the same building, and is intimately associated with a public hospital for women and children. All the members of its Faculty are respectable members of the profession; and we certainly advise such females as think they have a special mission to fill in the medical world, to resort to this school for instruction, rather than persist in the attempt to mix with young men in the amphitheatre and the dissecting room of other colleges. There are no less than six or seven hospitals for the sick in this city. Only four, however, are made available for clinical instruction. The oldest and largest of these is called the "Mercy Hospital." It is located on the corner of Calumet avenue and Twenty-sixth street, on the same block with the Chicago Medical College. It is an elegant building, of brick, well adapted for its purposes, being capable of thorough ventilation, and supplied with bath-rooms, elevator, &c., and containing a chapel for religious services and a good amphitheatre. There are in it accommodations for 500 patients. The number actually in attendance, however, averages about 250. Connected with the hospital is a free Dispensary for the out patients, in which about 5000 patients are prescribed for annually. The medical staff ot the Mercy Hospital is composed of members of the Faculty of the Chicago Medical College, and its system of clinical instruction is very comprehensive and systematically organized. It embraces one hour devoted to direct clinical instruction in the amphitheatre and general wards of the hospital, each day, and four minor clinics for special personal training in particular departments. Of the general clinics, three are medical and three surgical. Of the minor clinics, one is exclusively for diseases peculiar to women, another for diseases of the eye and ear, another for diseases in the chest and respiratory passages, and the fourth for minor surgery and diseases of the skin. Only six students are permitted to be present in each of these minor clinics at one time, that each may have all the advantages of individual examination and training.

The next largest hospital is known as the Cook County Hospital, and is for the accommodation of the sick poor who need public aid. It is under the control of the County Commissioners, but is attended by a full staff of physicians and surgeons, and is open for general clinical instruction one hour each day. It is always full of patients, and affords a good field for clinical study.

The St. Luke's Hospital is a much smaller institution, but is under good management, and open for clinical instruction one or two days each week.

The Hospital for Women and Children is also an institution of limited capacity, but is open for clinical instruction, and is directly connected with the Women's Medical College.

There are also several free Dispensaries in the city, in which there are opportunities for valuable clinical observation.

Such are the societies, colleges and hospitals in our city, from which I purpose to gather, from time to time, such items as I think will be of interest to your readers. I will only add the fact, that the *largest* patient ever admitted into a hospital in this city died in the Mercy Hospital a few days since. He was seven feet and ten inches high, measured fifty-two inches around the chest, and, when in good health, weighed 395 lbs. His age was 68 years. His disease appeared to be sub-acute hepatitis, leading to a moderate degree of abdominal dropsy, and during the last few days of his life complicated by symptoms of pericarditis, with effusion. His friends would not permit a post-mortem examination, although he had spent many years of his life on exhibition in connection with P. T. Barnum's "Great Show."

GLEANER.

EDITORIAL.

Sanitary Legislation.

V

We are informed that the Board of Health intend, at the next session of the Legislature, to press upon their consideration some additional enactments having reference to the public health throughout the State. Some of the points aimed at we consider of sufficient consequence to medical men to demand notice in these pages, and the most important will now be considered.

(1) It is proposed to establish local boards of health in all the incorporated cities and towns of the State, with power to enforce sanitary ordinances, abate nuisances injurious to health, and provide prompt means to avert any threatened epidemic of yellow fever, small-pox, cholera, or other infectious disease. These local boards are to supply vaccine and provide for vaccination to all requiring it. It is purposed that the parish authorities elsewhere attend to this matter of vaccination, through appointed medical officers of health. The experience of Shreveport with yellow fever during the past season abundantly shows the want of some organized mode of resistance to invasions which are likely to occur every year at places having constant commercial intercourse with points of customary prevalence. Systematic protection against small-pox is still more needed. When we consider that nearly half the population of the State are not vaccinated, and that we are in the midst of a period of exaggerated activity of the variolous infection, with a laboring population non-migratory in their habits, the necessity for vigorous measures of prevention becomes apparent.

But, aside from these duties, local health boards would find constant need for the exercise of their authority in securing a fair sanitary condition of their respective fields. It is notorious that considerations of public health are scarcely known in this country, except in the large cities or in the oldest communities. The abatement of nuisances is left to the individuals particularly affected, and is generally neglected. Drainage is defective, if not totally disregarded. Dysentery and typhoid fever are religiously regarded as providential dispensations, and not suspected to be the legitimate consequence of human improvidence.

A serious defect in most health boards is their brief tenure of office. Their duties essentially partake of a scientific character, and experience is required for their proper fulfilment. It is important, therefore, to have the benefit of experience, as well as of previous scientific attainments, and that the terms of the members should not all expire at the same time. Another great advantage in such stable organization would be to render the body measurably independent of party politics, that bane of civil service in all branches and grades.

As regards the mode of selection, we think it in accordance with the spirit of our people and government that it should be vested in municipal authorities, rather than central power; but we are clearly of opinion that health boards should be vested with ample powers in sanitary matters.

(2) It is proposed to make the registration of vital statistics one of the duties of the health boards. This we decidedly approve. Outside of New Orleans we have nothing of this nature, except the decennial census, which in such matters is highly unsatisfactory. The value of such information, as throwing light on hygienic questions, is understood by medical men, but far from being appreciated by the public at large. There is no doubt that this work can be most efficiently done under medical supervision, both as regards the collection of facts and, still more, their suitable arrangement for elucidating principles and discovering truth. The registration of births, deaths and marriages might indeed be carried out in the country through the parish authorities. The services of a physician could be secured either by membership on the police jury, or through appointment by this body as registrar of vital statistics. Moderate fees would meet all expenses of such a system.

The State Board of Health, located in the city, should have charge of the registration here, and should receive, classify and consolidate the returns from the whole State. The registration fees in the city accruing to the Board of Health would relieve its constant pecuniary embarrassment, and preclude the necessity of an annual application to the Legislature for an appropriation of money to supplement the other revenue derived from quarantine exactions.

The remarks made on tenure of office apply with still more force to the State Board, inasmuch as its functions are much more important than those of any mere local board, and especially as it requires the services of officers possessing high scientific attainments. In the selection of these officers it is a matter of fact this board have often felt constrained to yield to considerations contrary to their personal preference and their judgment as regards the public good.

(3) It is proposed that, in case of neglect or failure of any local board to act efficiently, the State Board be empowered to use such measures as the case may demand. Such a provision seems to us quite reasonable. We should also think it proper that regular reports be made by the local boards to the State Board, and

that the latier should exercise some supervisory authority over the former.

(4) Provision for house-to-house vaccination and the establishment of a suitable small-pox hospital in New Orleans will receive attention.

In regard to the former measure, we regard it as a missionary enterprise of doubtful value in a population like ours. The Health Board now possess the power to remove a small-pox patient from his home to the pest-house, and we believe that the free exercise of this power will have a far more powerful effect to convince even intelligent people of the value of vaccination than all the eloquence that could be infused into moral suasion. Compulsory vaccination, though correct in principle, we regard as a measure quite impracticable for this community. A suitable small-pox hospital is a desideratum here, but need not remain so. The present system of farming out these cases at so much a head is too palpably objectionable to require comment for a medical reader. The city must bear the expence, and the Board of Health should have the choice of medical attendant and exercise general supervision. The question of removal would then be settled by the requirements of the public good, without detriment to the patient.

(5) It is proposed that health boards be empowered to prosecute infractions of sanitary ordinances as misdemeanors, at their discretion. At present the only penalty is a fine, which is of course inoperative against offenders who are independently poor.

(6) An act regulating the sale of oils derived from petroleum is called for. The lighter class of these oils is largely used for illuminating purposes, and numerous accidents, involving loss of life and destruction of property, have occurred and are constantly liable to happen, owing to their excessive inflammability. All mineral oils offered for sale should undergo inspection, and the grade should be distinctly indicated on the package. The sale of certain grades for illuminating purposes should be prohibited. This matter has already been made the subject of legislative action in some of the States—notably in Ohio.

It may be well to state the reasons why the subject of sanitary legislation is introduced now and here. It is one which concerns the welfare of the entire population, but one which is best understood and most highly appreciated by medical men. In matters of this kind physicians can and should exercise a powerful influence in their respective communities, and might properly advise their representatives in the Legislature. In the hope of some favorable results through such a channel, we offer the above remarks, and commend them to the consideration of our readers.

Crowded Out.

A number of communications prepared for this issue of the JOURNAL have been unavoidably crowded out. Among these is a letter from Dr. Thibault, criticising the measures practised for disinfecting purposes in this city. We conceive it to be the duty of the medical journalist to give his readers opportunities to hear both sides of every scientific question which arises. Our regret is the greater, therefore, that this communication could not appear earlier than the March issue. In this connection it is probably expedient to inform our readers, that in future, all articles designed for this JOURNAL which are to fill more than thirty printed pages, will be published in two parts, in successive issues. We are compelled to adopt this rule in order to enable us to make a fair distribution of our pages to many contributors.

New Books.

Many new books were received too late for special notice in this number; they will receive critical notices in the next issue.

The Journal.

This JOURNAL may now be regarded as a successful enterprise, but the Editor feels assured that, having witnessed the liberality of the Proprietor during the *losing* days of the late financial panic, he has the right, and is right, in asking the medical profession to render to the latter such pecuniary support, that he will be enabled, at least, to reap full reimbursement for his recent outlay. The Editor, not having the least interest in the financial management of the JOURNAL, can all the better base a claim upon the profession generally, to make a proper return for the proprietor's liberality, and determination to secure success.

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METEOROLOGICAL REPORT FOR NEW ORLEANS.

Table I---November.

Day of Month.	Temperature. Maximum.	Temperature. Minimum.	Temperature. Range.	Mean Barometer Daily.	Relative Humidity—Mean.	Rain fall—inches
1	65	46	19	30.39	65	
2	75.5	51	24.5	30.27	78	1.00
3	69.5	60	9.5	30.20	90	
4	73.5	61	12.5	30.14	94	2.48
5	71	66	5	30.11	96	2.40
6	71.5	63.5	8	30.07	89	
7	70.5	60.5	10	30.03	87	
8	73.5	57	16.5	30.12	77	
9	71	57	14	30.19	74	
10	75.5	55.5	20	30.14	65	
11	76	57	19	30.04	61	
12	68	58.5	9.5	30.08	53	
13	58	45.5	12.5	30.21	65	
14	65.5	45.5	19.5	30.21	72	
15	72.5	52	20.5	30-21	74	
16	77	61	16	29.90	—	.01
17	69.5	58	11.5	29.71	52	
18	64	45	19	29.78	56	
19	50	39	11	30.20	54	
20	58	37.5	20.5	30 31	75	
21	67.5	48	19.5	30.24	74	.02
22	68	59	9	30.07	83	.45
23	76.5	63	13.5	29.93	83	
24	67.5	61.5	6	29.97	82	.20
25	68	50	18	30,11	66	
26	64.5	53	11.5	30.04	77	
27	63	57	6	29.96	95	1.20
28	68	55.5	11.5	30.20	85	.01
29	69	52	17	30.36	79	
30	70	55.5	14.5	30.36	82	
Mean	68.55	54.37	14.18	30.119	75.34	Total. 7.77

Table II---December.

Day of Month.	Temperature. Maximum,	Minimum.	Range.	Mean Barometer Daily.	Relative Humidity—Mean.	Rain fall—inches
1	70	56.5	13.5	30.23	87	0.1
2	74	63.5	10.5	30.12	85	.40
3	78	69	9	30.03	87	.20
4	61	53	8	30.18	63	.01
5	59.5	55.5	4	30.16	91	
6	68.5	53.5	15	30.15	95	
7	75.5	64	11.5	30.18	85	
8	76	63	13	30.22	82	
9	70.5	64	6.5	30.28	88	
10	76	64	12	30.23	82	
11	76	64	12	30.17	83	
12	75.5	63.5	12	30.02	88	.11
13	57.5	47	10.5	30.16	60	
14	53	39.5	13.5	30.31	66	
15	60	45.5	15	30.27	75	
16	64.5	58	14.5	30.22	77	
17	69.5	52.5	17	30.20	79	
18	71	52	19	30.18	77	
19	61	54	7	30.18	60	
20	58	46	12	30.28	67	
21	62	44.5	17.5	30.27	79	.65
22	68	55	13	30.04	79	
23	52.5	47	5.5	30.18	80	
24	50	46.5	3.5	30.18	78	
25	45	41	4	30.12	73	
26	59	35.5	23.5	29.84	78	
27	48	38	10	30.12	61	
28	46	32	14	30,39	—	
Mean..	63.76	51.05	11.66	29.82	75.17	Total. 1.38

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Mortality in New Orleans from October 26th, 1873, *to December 28th, inclusive.*

Week Ending	Total Mortality.	Whites.	Colored.	Small-pox.	Malarial Fevers.
Nov. 2......	136	93	43	2	8
Nov. 9......	125	88	37	5	6
Nov. 16.....	144	99	45	7	11
Nov. 23......	115	86	29	4	3
Nov. 30.....	116	69	47	10	4
Dec. 7......	106	67	39	11	5
Dec. 14.....	110	66	44	11	3
Dec. 21.....	99	54	45	11	1
Dec. 28.....	118	72	46	15	2
Total.......	1069	694	375	76	43

THE

NEW ORLEANS

MEDICAL AND SURGICAL JOURNAL.

MARCH, 1874.

ORIGINAL COMMUNICATIONS.

ARTICLE I. *Post Mortem Changes versus Ante Mortem Lesions.* By STANFORD E. CHAILLE, A.M., M.D.; Professor of Physiology and Pathological Anatomy, Medical Department, University of Louisiana. √

The progress of civilization depends on that constitution of the mind which does not suffer it to rest content, until the causes of observed facts have been accounted for. However, experience has taught constantly, and often bitterly, the lesson which true science imperatively dictates, that confession of ignorance is far better than the assumption of causes which are imaginary or inadequate. The tendency to hasten to conclusions, to rest content with causes about which nothing is known, or which, if real, would be insufficient to account for an effect, is the deplorable characteristic of the barbarian, and therefore of all ignorant, ill-disciplined minds.

History superabounds with illustrations. When the laws of evaporation and condensation were not comprehended, rain was attributed to a super-terrestrial ocean. When Jupiter ruled the heaven of the Romans, they were content to explain electricity by arming his grasped hand with a thunderbolt. When the pathology of the seat of the mind was little understood, the insane manifestations of a diseased brain sufficed to doom the unfortunate victim to criminal pains and penalties, as against one "possessed by a devil." The modern mind, even within the sacred precincts of science, sometimes shows painfully its ancestral trait. Doctors of medicine are still to be found, who, though forced to confess that knowledge of the physiology and pathology of the liver continues to be very imperfect, yet find no difficulty in daily encountering patients whom they denounce as "bilious," even when not one symptom exists which can be proved due to the accused organ. And although a venturesome assumption must be weakened by a fellow alliance, these "bilious" doctors none the less recommend mercury, because it produces green stools, which, however, are not adequate proofs of bile; and because it is a cholagogue, which, however, has been disproved by all researches based upon demonstrable proofs.

The dead-house furnishes frequent examples of this tendency to be content with inadequate and imaginary causes. There, one may hear symptoms and death attributed to changes which none the less may frequently or even constantly occur without producing any such results; or, again, a lesion being found, it is held responsible for effects which none the less are frequently observed unassociated with any lesions whatever, demonstrable with the knife. In fact there are some, who having committed themselves to a diagnosis, find so little difficulty in detecting the anticipated lesion, that it may be confidently foretold of their post mortem examinations, "seek and ye shall find." Often have congestion, effusion, softening, inflammation, pigmentation, tuberculosis, been ascribed to various organs, when in truth these were perfectly free from disease, and have served solely as scape goats for errors of diagnosis.

To no one cause are such errors oftener due, than to ignorance of those anatomical changes which occur as the result simply of death. Whilst desultory allusions to these deluding changes are to be found in the text books, yet no author has seemed to deem them of sufficient importance to deserve special instruction and a separate compilation. My experience as a practical teacher does not justify this apparent indifference, and induced me long since to devote to this subject special preliminary instruction. For the facts taught, I am largely indebted to Rokitansky and Casper, and more recently to Delafield's excellent work, "Post Mortem Examinations."

Post mortem alterations are due chiefly to two causes—to blood changes and to putrefaction.

BLOOD CHANGES.

"No other component part of the organism," says Liebig, "can be compared to the blood in respect of the feeble resistance which it offers to exterior influences." When no longer moved by the heart's force, nor replenished, nor the centre of nutritive changes, nor protected by its vitality from yielding to the numerous chemical affinities which distinguish all bodies of such complex composition, it undergoes promptly, but with variable rapidity, many changes. Its fibrin coagulates, its red blood corpuscles undergo change of form and dissolution, its movements within and without the vessels are controlled exclusively by the purely physical forces of gravitation, imbibition, osmosis, and finally it putrifies, thus developing gaseous and other products. All of these changes deserve special consideration.

Post Mortem Coagulation.

This phenomenon, stated by many to take place within twenty-four hours after death, occurs much sooner, and certainly often begins within two hours. It is manifest wherever blood is left after death, that is in the veins, and the heart with its vascular roots, but not in the arteries generally.

The color and firmness of the coagula depend on their superior or inferior position, and on the relative proportion of the red corpuscles and fibrin. The most decumbent part of a coagulum contains most corpuscles and is darkest. Venous coagula are dark, loose and friable, whilst arterial coagula are buffy, dense, firm, and more adherent. The more fibrin in the blood, the longer the agony, and the more inefficient the heart's action during the agony, the more complete is the coagulation.

Arrest of the circulation causes coagulation, not only in the corpse, but also in the living body. as is remedially illustrated by digital compression of an artery for aneurism. Thrombotic and embolic coagula may cause sudden death, apoplexy, cerebral softening, gangrene, phlebitis, and in fine by arresting the circulation in, may impair and even destroy any organ. Hence the pathological anatomist is often called upon to decide whether coagula are ante or post mortem.

In some cases, especially where the coagulation has occurred but a short time before death, a satisfactory decision may be impossible. Symptoms may be conclusive in some cases, where associated with coagula, which by themselves would be doubtful and inconclusive. In other cases, the lesion by itself may be too characteristic for doubt. The indubitable characters of ante mortem clots are—thickening and alterations of the vascular walls in contact with the clot, a central softening (puriform or cheesy) of the clot, and a loss of elasticity and brilliancy, the clot appearing dull and dry. Some teach that these coagula are more yellow and adhesive, others that they are of "a whitish color." I believe that they are generally less yellow, and have seen them in the heart, both paler and less adherent than post mortem clots.

The infarcti of embolism, with their purulent degeneration (metastatic abscesses), are not simulated by any post mortem changes, and therefore will not be discussed.

Changes of the Red Blood Corpuscles.

These changes, like that of coagulation, occur in blood drawn from the living body, as well as in post mortem blood within the dead body. The red corpuscles quickly arrange themselves in rouleaux, and they become raspberry-like, presenting a dentated appearance of their circular margin. They are subsequently dissolved and their coloring matter set free; the blood serum thus becomes discolored, and thereby those tissues which may be infiltrated by such bloody serum.

Cadaveric Hypostasis.

The influence of gravitation on the blood, even when propelled by the vigorous healthy heart, is notable, if a depending hand be elevated above the head, or if the usual upright posture of the body be reversed. When the heart acts feebly in disease, gravitation exercises a still greater control, and in the recumbent position the blood accumulates in the inferior part of the organs, as in the lungs, and as in the tissues of the back, there causing, when conjoined with external pressure, bed sores.

After death this force reigns supreme, and stamps its effects on the depending portion of every organ. Therefore the localities affected will depend on the position of the body since death.

[The words *lower* or *inferior* will be used to express the parts most decumbent when the corpse has remained in the position habitual; that is, flat on the back, neither tilted to one side, nor on an inclined plane, nor suspended.] The amount of the hypostasis is also variable. The condition of the patient, whether anæmic or full blooded—the mode of death, whether by syncope and asthenia, or by coma and apnœa—have a marked effect on the extent of the bloodless, or hyperæmic appearance, not only of the organs generally, but also in some cases of special organs, as of the lungs and brain in death by apnœa.

Post mortem gravitation of blood and fluids may produce the most deceptive changes. On the one hand, hyperæmias (even if inflammatory) and œdemas manifest during life, may, if located in elevated portions of the corpse, disappear, leaving the anatomist no satisfactory evidence of their having existed On the other hand, accumulations or congestions of blood do constantly occur, not only on the lower external surface of the body, but also in the lowest part of the internal organs; and such congestions, associated as they often are with cadaveric œdema and softening, have been repeatedly mistaken for inflammatory or other veritable lesions. As to hypostasis in the external surface of the body, it causes but one change likely to be misinterpreted; its discoloration may be mistaken for a bruise. In the latter case the blood will be found outside of the vessels, extravasated into the ecchymosed tissues; whilst in the former case, blood-colored serum may be in the tissues, but not blood itself; this will only be found where it flows from the opened mouths of incised vessels.

As to the internal organs, it may be taught as a general rule—in order to discriminate between the cadaveric congestion of hypostasis and the hyperæmias of inflammation—that in the former case, only the decumbent part (say the lowest third) of the organ is involved, and that the intensity diminishes from below upwards. This necessity of hypostasis is only a possibility of inflammation. Further, a serious inflammation would leave either evidence of a very extensive congestion, or much stronger proofs of its presence than congestion alone; such as swollen, thickened, unpolished, often wrinkled tissues, and marks of adhesion, fibrinous exudation, suppuration and ulceration. Hence simple accumulations of blood and serum, limited to about the lowest third of an organ, should never be deemed inflammatory lesions—unless such accumulations be intensified in some circumscribed part of this lowest third, or be associated with some other ante mortem lesions. It would be invidious to state how often the lungs and cerebro-spinal axis alone have been made to illustrate the necessity of keeping in mind the above facts.

Cadaveric Effusions and Fluid Infiltrations.

The capillary force of imbibition is purely physical, acting both after death and during life. Pressure so modifies it, that even when slightly favorable, the combined effects are notable; whilst when a very little pressure opposes capillarity, its effects are inconsiderable. Osmosis is also a physical force. After death its conditions are altered, not only as to the osmotic vascular membrane and the fluid on each side of it, but also as to motion and pressure. Coagulation diminishes the albuminoids in the portion of blood left fluid, and thus favors its exosmosis into the tissues. The relaxation of death doubtless renders the membrane of the vascular walls, as other tissues, more permeable and thus favors osmosis. The quantity and quality of the fluids outside of the vessels and in the tissues are affected by the condition of the patient and mode of death, rather than by death itself. The current moving in life through the vessels greatly promotes endosmosis, and arrest of this current favors exosmosis. Pressure greatly influences osmosis. In the decumbent parts of the corpse hypostasis exercises a pressure proportionate to the amount of blood in the vessels; and in such parts, unless already saturated with fluids, there must always be some effusion of serum, which, when the corpuscles have been dissolved, will have the reddish hue of blood. It follows, then, that imbibition, osmosis, and hypostatic pressure combined favor the effusion of fluids, especially into the lowest parts of the body, and tend to remove fluids from the most elevated parts.

Upon these facts depend the explanation, that œdemas, as of the larynx, may disappear after death; that fluids in cavities, as in the cerebral ventricles, may be diminished, being imbibed by a non-saturated organ in contact with the fluid; that some serous effusion may occur into cavities, as into the pleural, from organs hypostatically engorged; that serous infiltrations do occur into the most decumbent textures, varying in amount with the degree of their saturation, and the hypostatic pressure; that some parts, notably the lowest portion of the internal coat of a teries, become discolored, simulating inflammatory redness, when the imbibed serum has been tinted with the coloring matter of the dissolved corpuscles; and that tissues in contact with the gall bladder present after death endosmotic discolorations with bile. Such imbibitions of bile doubtless occur during life, but fail to produce discolorations, because living absorption removes them from the tissues as rapidly as imbibed.

Such facts teach that slight effusions and infiltrations and certain discolorations are not to be assumed as proofs of ante mortem lesions.

Cadaveric Softening.

Gross' Pathological Anatomy teaches: "Next to redness, softening may be regarded as decidedly the most unequivocal sign of the existence of phlegmasial irritation." It is my conviction, that a good deal of false pathology is founded upon a too exclusive reliance on these "most unequivocal signs;" that they can not be depended on without due regard to the parts of the body where found; and that fatal inflammation generally leaves in all parts, additional and often more trustworthy signs of its presence than redness and softening.

Organs anæmic or otherwise dryer than usual, are firmer, whilst organs gorged with blood or saturated with fluids become softer. Variations of consistency, dependent on such causes, are especially manifest in soft, loose textures, as of the spleen, brain, lungs. The blood engorgement, and serous infiltration of hypostatic parts tend to soften such parts. Putrefaction soon makes its appearance, and its initiatory process tends to throw additional doubt upon softening as a sign of disease. It does not attack all organs at the same time, and to the same degree (as will be explained); hence, that softening may be found in one organ, or part thereof, and not in all the organs, is not a proof that putrefaction may not have caused the softening in that organ or part which may be under judgment.

Unless, then, the softening extends beyond the hypostatic parts; unless it be distinctly circumscribed; and unless it be associated with other marked signs of disease, it should not be pronounced an ante mortem lesion. Softening of the gastric mucous membrane, of the brain, and of the spleen, as well as of other parts, has often been misinterpreted.

All which precedes tends to prove, that redness or congestion, softening, and slight œdema, unassociated with any other anatomical evidences of disease, are not, in all circumstances, satisfactory proofs of ante mortem lesions.

Gas in the Blood.

As a result of putrefaction, gases are developed giving a frothy appearance to the surface of blood. This change is sometimes so prompt, that the question arises whether this gas may not have been present during life, rather than have been disengaged after death. This certainly may have been the case, if the patient suffered with gangrene, or with obstruction in some part of the circulation. It is said that gases are developed in the blood during life, especially in parturient women, and in those dying of putrid fevers, as typhus.

PUTREFACTION.

The changes effected by putrefaction are discolorations and softenings of, and the development of gases in, the tissues. It makes its appearance as cadaveric rigidity ceases. Since this rigidity is due to muscular coagulation which is associated with an acid reaction of the muscles; and since the alkaline ammonia is a constant product of putrefaction, it would seem that ammoniacal putrefaction is the cause of the destruction of the muscular coagulation of cadaveric rigidity. This phenomenon is then one of the èarliest evidences of putrefaction; and among other such evidences are, a putrefactive odor, easy separation of the epidermis, a loss of tension within and a softening of the globe of the eye which yields more readily to pressure, and a greenish discoloration of the skin, especially ot the abdomen. This greenish discoloration of other tissues as well as of the skin, passing through successive hues, becomes black. These changes of color depend primarily "on the decomposition and infiltration of the animal fluids, especially of the blood in the skin," and secondarily on the action of the sulphuretted hydrogen of decomposition on the blood. Therefore these discolorations are found most marked along the course of the veins.

The time after death within which putrefaction begins is variable. The variations are subject to laws well known for the most part; but cases do occur where, of two bodies in apparently identical circumstances, the one putrefies earlier and more rapidly than the other, without known cause. The causes known to influence putrefaction are air, humidity, temperature, age, and the disease affecting the blood and tissues before death.

Air.

Oxygen, the universal decomposer, is indispensable to putrefaction. Hermetically sealed cans preserve meats indefinitely. All causes which favor the free exposure of a corpse to the air hasten its putrefaction; hence, mutilated bodies putrefy rapidly. All causes which serve to exclude the air retard putrefaction; hence the clothing or shroud, the kind of coffin, the mode of burial, and the character of the soil decidedly influence the rapidity of putrefaction. A corpse well clothed, enclosed in a tight-fitting metallic coffin, and buried deep in a tenacious soil, would long resist putrefaction. It is said that a corpse will putrefy as much in one week when freely exposed to the air, as in two to three weeks when submerged in water, and as in eight weeks when well buried in the ground.

Humidity.

Not only air, but also moisture is indispensable for putrefaction. If an organic substance be deprived of its liquids, it undergoes desiccation or mummification, not putrefaction. However, the bodies of all animals contain fluids in ample abundance for putrefaction; which is hastened, not only by the free access of moisture externally (not to the extent of submersion), but also by excesses of fluids within the body. Hence obesity (therefore the female sex, since women are generally fatter than men) favors putrefaction, whilst shrivelled old age resists it.

Temperature.

A temperature elevated, but insufficient for combustion, causes rapid evaporation of fluids, and coagulation of albuminoids, and it thereby desiccates or mummifies the body, as is sometimes effected by the hot, dry, moving air of African deserts. A temperature sufficiently depressed also protects the body indefinitely from putrefaction, and enabled the mammoth found, after having been buried "more than six thousand years" in Russian ice, to furnish from his carcass good fresh meat for food. But such conditions of temperature are exceptional, and in all ordinary climates the rule holds good, that the higher the thermometer the more rapid is putrefaction. At 20° F. a corpse can be dissected nearly two weeks, whilst at 70° F. it begins to putrefy within twenty-four hours. Preceding facts prove, then, that the greater the heat, air and moisture, the more prompt the appearance of putrefaction.

Age and Disease.

The new born putrefy very quickly, the aged slowly. Those dead of decomposing blood diseases, such as putrid, puerperal, typhus and yellow fever, putrefy rapidly. Alcoholic drunkards putrefy slowly.

The above laws, as to the putrefaction of the body generally, lead to a better appreciation of that which is of most importance to the pathological anatomist—the phenomena of putrefaction in the internal organs. As to these, the following rules prevail: signs of putrefaction in the internal organs are not apparent until after the manifestation of some evidences of external putrefaction; the deeper internal organs are located, the more protected from air and humidity, the less saturated with fluids, and the denser their structure—the slower their putrefaction.

The organs which putrefy comparatively soon, usually present signs of putrefaction in the following order: the mucous membrane of the larynx and trachea; the brain of the new-born and one year old infant; the stomach, intestines and spleen; the ormenta and mesentery; the liver, and the adult's brain. Those which putrefy more slowly are: the heart and lungs; the kidneys; the bladder and æsophagus; the pancreas; the diaphragm; the vessels, especially the larger arteries; and the uterus.

The general facts which should influence the decision whether the alteration observed in a part is due to an ante mortem lesion, or to a post mortem change, have now for the most part been stated. It remains to apply these facts to those organs which are oftenest misjudged in post mortem examinations.

PORT MORTEM CHANGES IN SPECIAL ORGANS.

Larynx.

The larynx and trachea, freely exposed to air and moisture, are the internal organs first to manifest marks of putrefaction. The healthy whitish pink color observable immediately after death, soon becomes a cherry or dirty brownish red color, and this without injection of the vessels. Delafield teaches that both "œdema and redness may be produced by post mortem changes," whilst it has been previously stated that ante mortem redness and œdema of the larynx may disappear after death, as results of hypostasis. If œdema, and redness with injection of the vessels, are ever produced as post mortem changes, it can only be when the position of the corpse has been unusual, and such as favored gravitation of fluids into the laryngeal mucous membrane. Redness is not to be attributed to inflammation unless associated with unusual injection of the vessels.

Stomach.

Gastric post mortem changes occur early, are well marked, are due to cadaveric digestion as well as to hypostasis and putrefaction, and have repeatedly been misinterpreted as the ante mortem lesions of congestion, softening, hemorrhage, inflammation, ulceration, and even perforation.

Cadaveric digestion is liable to affect the greater splenic end of the stomach (when this is, as usual, the most decumbent portion) and as high as the line of fluid contents. There are few dead bodies in which the stomach is not in some degree digested. Its greatest ravages are found in those suddenly killed after a hearty meal, and especially when the body has been kept warm. In such cases the stomach may be perforated with a ragged, lacerated opening, and its contents be found floating in the abdominal cavity; or even greater ravages may ensue. Cadaveric digestion is indicated by softening and thinning of its coats, by erosions deep enough at times to simulate ulcers, and by the flow of drops of blood from the digested ends of small vessels, when pressure is made on the branches from which they are derived. The color of the mucous membrane will depend largely on the quantity of blood in its vessels. If these be gorged with blood, there will result the condition which has been denominated "black softening."

Putrefaction begins early in the stomach, causing softening and discoloration. The first traces are isolated, irregular, dirty red or yellowish patches, traversed by bluish red furrows, which are the vessels of the stomach, and these are most observable in the splenic or decumbent part, where hypostasis exists. Unless the post mortem examination be made earlier than usual, none could decide how much of the softening found was due to digestion, how much to putrefaction.

From the above facts it is manifest that since engorgement, with discoloration, softening, opening of the vessels, and destruction of tissues do occur in the depending part of the stomach, as results of hypostatic, digestive, or putrefactive post mortem changes, too great caution cannot be exercised in attributing any of such changes to ante mortem lesions, when these changes are limited and confined to its splenic end, and to the line of gastric contents.

Intestines.

Their mucous membrane is early softened and discolored by putrefaction. Hypostasis engorges the vessels of the lowest portion of every curve of the intestines. Hence, when these are removed, and their mucous membrane is exposed there is apt to be found at every few feet patches of redness from hypostatically engorged vessels. Therefore, neither during the prevalence of intestinal diseases nor at other times should every evidence of intestinal redness be considered as proof of inflammation.

Spleen.

Its size is very variable within physiological limits, being always largest after digestion, when absorption has most distended the portal circulation. Its color and consistence, as well as its size, may vary without known cause. Of loose texture, very elastic and distensible, serving partly as a reservoir for the portal blood, it is very liable to blood engorgements, and saturation of an organ with fluids tends to soften it, and to render it more friable. Excesses of blood in the spleen, a deep solid organ well protected from air and external moisture, must be the cause why it putrefies so quickly, by which also it is softened. Therefore softening of the spleen is more likely to be due to post mortem changes than to disease. If it be enlarged and firm, or if it be small and soft, it is much more likely to be diseased than if it be large and soft, or small and firm. As proofs of its inflammation, adhesions of its capsule, infarcti, or abscesses should be sought for.

Liver.

This organ does not putrefy quickly, and its post mortem changes are not likely to be sources of error. Among such changes, its parts contiguous to the gall bladder are discolored by imbibitions of bile, its surface becomes, by putrefaction, greenish, then blackish; and black pigment granules may be found along the course of the blood-vessels, due to the action of the sulphuretted hydrogen gas of putrefaction on the iron of the blood.

Brain.

The adult's brain does not putrefy very rapidly, as is generally supposed. Softening, when observed early, and especially when most marked in the cerebellum and the lowest third of the brain, that is in those parts which are hypostatically engorged and bathed in serum, is due rather to imbibition of fluids than to putrefaction. The brain of the new-born infant is normally both softer and pinker than the adult's, and its greater exposure, through the fontanels to the sources of decomposition, cause it to putrefy much more promptly than the adult's.

Since then, the vessels of the lower third of the brain are usually engorged by hypostasis, and since the lowest parts, as also the walls of the ventricles are liable to be softened by imbibition; congestion and softening in these parts are generally to be regarded as post mortem changes. In this, as in other cases, it is necessary to find these changes, if caused by disease, circumscribed, or extending beyond the above named limits, or associated with other changes, which are due always to disease, and never to post mortem alterations.

The peculiarities of the circulation in the incompressible, air-tight cranial box are often forgotten, and the results misinterpreted. In all ordinary cases the blood and cerebro-spinal fluid must be in inverse ratio to each other; the more of one the less of the other. In two cases only can there, by any possibility, be an excess of both at the same time: namely, when the cranial cavity is enlarged, as in hydrocephalus, and when there is, as rarely is the case, atrophy of the brain. Whenever the size of the cranial cavity and the size of the brain remain unaltered, then the space must be filled with an unvarying sum total of blood and cerebro-spinal fluid. Each of these may and do vary, but a variation of one forces a compensatory variation of the other. Therefore, in all ordinary cases, where an excess of blood is found in the brain, there must be a deficiency of serum; and whenever the brain is anæmic there must be an excess of its serum to compensate for and fill the space which the blood ought physiologically to occupy. For these reasons a conclusion that the brain has been during life the seat of a morbid serous effusion is liable to very grave suspicion. So grave, that, for my own part, I have long doubted, in opposition it is true to the highest authorities, whether the disease recognized by all the text books as "serous apoplexy" was a physical possibility. I am prepared to grant anæmia of the brain, with a compensatory effusion of serum as a necessary consequence of the anæmia, and therefore to recognize anæmic apoplexy. Experimental physiology long since taught that if one would have an animal fall insensible, as if shot, or felled by apoplexy, it is only necessary to interrupt the flow of blood to the brain, and that removal of any such temporary obstacle restored consciousness at once.

If serous effusion be due to inflammation, it will be found turbid, bloody, purulent; and other decisive evidences of disease will probably exist in the cerebral tissue.

Other encephalic alterations, not due, however, to post mortem changes, are liable to misinterpretation, and may be in this place appropriately alluded to.

The dura mater, which normally adheres strongly to the calvarium only at the base of the brain, often becomes more extensively adherent in old age and in alcoholism. To such condition no special importance should be attached.

The so-called glands, granulations, corpuscles of Pacchioni, are small, round, whitish connective tissue tumors which (in some cases) abound along the margin of the longitudinal fissure. Depressions or little pits in the calvarium often correspond to these bodies, which, absent in infancy, augment with time, and (often undergoing chalky degeneration) are most numerous in the aged. They have been mistaken for the granulations of tubercular meningitis.

The so-called "milk spots," or degenerative fibroid thickenings, which are so frequently found on the investing membranes of the various organs, are also sometimes found in the cerebral meninges. To such "milk spots" no special importance attaches.

The little transparent vesicles, or cystoid growths, often found in the choroid plexus, are likewise destitute of pathological significance.

Spinal Cord and Nerve Tissue.

This organ, from its very low position, when the corpse has reposed, as is usual, on the back, is so favorably situated for hypostatic engorgement, that those unaccustomed to its habitual post mortem appearance find little difficulty, when searching for its lesions as in tetanus, in demonstrating congestion. One should hesitate long before admitting ante mortem congestion of the cord, unless such congestion be distinctly circumscribed, greater on the upper than on the lower surface, and associated with other evidences of disease.

The same cause for pathological misinterpretation exists as to deeply seated nerve tissues, such as the sympathetic ganglia. Lesions of these, especially of the semilunar ganglia, were, many years ago, as now, stated to occur in yellow fever; a blood disease characterized during life by hemorrhagic engorgements and extravasations, which are exceptionally prominent after death. Careful examination, during the epidemic of 1867, demonstrated hypostatic engorgement of blood, and effusion of bloody serum into the tissues investing these ganglia, but failed to demonstrate any lesions of the nerve tissue itself.

Heart and Arteries.

Evidences of hypostasis are not seen in the heart, and it putrefies very slowly; hence changes by these causes present little opportunity for erroneous interpretation.

In estimating hypertrophies and dilatations it is well to bear in mind, that the left ventricle is one of the first points affected with cadaveric rigidity, by which its walls become firmer and apparently thicker; and that when death has been caused by an exhausting disease, as typhoid fever, the walls of the heart are apt to be flabby, and its cavities to appear larger.

The endocardium may be, and the inner coat of the vessels, as especially observed in the aorta, is often discolored by the imbibition of bloody serum. This is most often observed when decomposition is most rapid, as in moist hot weather, and after death in blood diseases. This post mortem imbibition of blood has been mistaken for, but can readily be distinguished from, the inflammatory redness of endarteritis. In the former case, the redness is most intense in the lowest part of the arterial tube; it is apt to be found in bands, these corresponding to decumbent curves of the vessel; it affects the inner coat chiefly, leaving this smooth, polished, unthickened; and the redness is uniform, as if painted with a brush. In endarteritis, the redness is not likely to be limited to decumbent parts, nor to be arranged at intervals in bands; it affects the middle, as well as the inner coat, causing thickening of both, and giving to the inner coat an unpolished, wrinkled appearance; and, since the capillaries (vasa vasorum) become enlarged and visible, this gives to the redness an aspect different from the uniform painted redness of imbibition.

Lungs.

The very large proportion of deaths by pulmonary diseases renders extremely important a correct appreciation of their lesions. Misinterpretation of their post mortem changes has been frequent, and has, as the annals of legal medicine prove, even defeated justice.

The hue of the normally pale, pinkish lungs, mottled with slate-color, is considerably affected by the quantity of air in them. If they be distended they appear anæmic, and if not distended, hyperæmic. The slate-colored markings are darker and more extensive in proportion to age and exposure to the inhalation of a smoky atmosphere; for these discolorations are chiefly due to a kind of tattooing of the lungs with microscopic carbonaceous particles, which having been inhaled, penetrate the tissues, and then being in part absorbed, they accumulate largely in the bronchial glands. The glands thus blackened are not to be considered diseased, as has been done.

The most serious and frequent error is to interpret, as due to inflammation, hypostatic congestion and œdema, which are always to be found in the lowest portions of the lungs. This hyperæmia and serous infiltration of gravitation necessarily vary in quantity in different cases, depending chiefly on the amount of blood in the body and the mode of death. As a rule they, mounting upwards, involve one-fourth to one-third of the lungs. The two lungs are equally affected, provided they have been, as is usual, subjected to the same conditions; such as, an equal supply of blood, and that the corpse has rested flat on the back, not on an inclined plane, nor tilted to one side. Delafield correctly teaches, that "congestion and œdema confined to the posterior portions of the lower lobes are usually merely post mortem changes, and are most marked in hot weather." "In persons dying comatose from any cause * * * the congestion and œdema, although often very excessive, are merely the accompaniment of diseases which are of themselves sufficient to destroy life."

Slight serous effusions into the pleural cavity may be due to the agony; the right heart being inefficiently emptied, the venous system becomes thereby distended, and effusion results. It has been observed that, when one lung is bound down by pleural adhesions, and the other lung is free, the former is found œdematous, whilst effusion occurs into the pleural cavity of the latter.

Bronchitis in elevated tubes may leave no appreciable lesions; whilst in the lowest tubes the bronchial mucous membrane may be found red, soft, and turgid from post mortem changes. Thus a true bronchitis may elude demonstration, and a false bronchitis may be simulated by cadaveric alterations.

No importance should be attached to the old pleuritic adhesions, which are so frequent; nor to emphysema, when limited to the anterior borders of the superior lobes of the lungs.

Kidneys.

These firm, deep-seated, and well.protected organs, are very slow to putrefy. Their anæmic or hyperæmic condition is far oftener due to general than to local causes. A whitish purulent-looking fluid sometimes found in the renal pelvis, and to be squeezed from the papillæ of the pyramids, is due to a post mortem desquamation of renal epithelium.

Uterus.

Neither hypostasis nor putrefaction cause any misinterpretation of the lesions of this organ, unless it has recently undergone parturition. In such case the bloody, blackened, rough and shreddy appearance of the mucous membrane—more particularly where the placenta was attached—must not be confounded with the lesions of disease. During menstruation the womb is periodically gorged with blood, and enlarged; such physiological alterations may be misconstrued.

ARTICLE II. *Yellow Fever Epidemic of Memphis, Tenn., in* 1873. By Y. R. LEMONNIER, M. D., Visiting Surgeon, Charity Hospital, New Orleans.

[Continued from the January Number.]

March.—Mr. Dutroulau, on page 415 of his excellent treatise, says, "The march of yellow fever is essentially a continued one, with only one paroxysm, and distinct stages. *Complications with endemic fevers of a paludal origin*, [italics ours,] at the season during which these are most prevalent, could alone have led one to believe that there existed an intermittent yellow fever." Such was the nature of the fever in Memphis. To-day, with the thermometer, we have the means of making a positive diagnosis, and the result of our observations coincides with that of those who have preceded us and studied the disease when that instrument was either unknown or but little used. The works of MM. Dutroulau and St. Vel, who have observed the fever, (from p. 32 to p. 68,) do not mention the use of the thermometer, and they both positively assert that it is a continued fever with but one paroxysm and distinct stages. English observers are of the same opinion. Not only we Americans have observed this, but it is probably here, in New Orleans, that the most has been achieved in proving positively, from authentic observations, taken with the thermometer and watch in hand, that the march of the fever is a continued one.* This question is therefore a settled one, and any case of yellow fever with two or more paroxysms should be looked upon as one *complicated with malarial toxæmia.*

I have said the fever had two stages. The first is one of excitement, the second one of depression. It is not any change in the symptom *fever* that points out one period from the other; the disease we have said to be a continued fever. It is only when the case has lasted long enough, and been a regular one, that the two stages are observed (c. iii.). After the paroxysm, while *both* the temperature and pulse are falling, symptoms of such a nature show themselves, as to be easily distinguished from those that have preceded. The injection of the capillaries of the face and eyes gradually gives way to a sub-icteric hue,

Vide Dr. J. C. Faget's "Type and Specific Character of True Yellow Fever," etc. in N. O. Med. and Surg. Journal, September 1873; Joseph Jones' "Nature of Yellow Fever," in New York Medical Journal, July, 1873.

especially marked about the conjunctivæ. This may be the only coloration seen, or it may increase until the whole body be of a deep ochre yellow. While this change of coloration goes on, the pulse loses its bounding nature and becomes large, soft, compressible, if not weak, with a slowness proportionate to the icteric hue. The stomach, which so far might have been quiet, may become irritable; or if such was already the case, the irritation increases, and the ejections soon assume the nature of black vomit. Leech bites will reopen, bleed anew, and in fatal cases become livid and ecchymotic. In the course of two or three days hemorrhages take place from different parts of the body. The cerebral symptoms are generally the last to appear, except in a few cases, such as alcoholism, where they may be present during the first stage. Such is the second stage, which may end in recovery or death.

But this is not always the march of yellow fever. In some cases we have only one stage, that of excitement, after which the patient enters into convalescence. This may last but three days. Such are the cases which may have led some physicians to believe and say that "*they could cure yellow fever in from four to five days.*" In others of a malignant nature the march was so rapid that the first and second stages ran into each other, the patient dying after the second or third day, having had most of the above named symptoms. Or again, we may have a delusive pause, between the first and second stages, as if all was over. The patient feels well, wishes to leave his bed, walk about, eat, etc. This is the second stage of those who divide yellow fever into three stages. It may last a few hours or two or three days. (Dutroulau).

The French authors have very properly called this transitory comfort "*le mieux de la mort,*" for though death does not always supervene, it is often succeeded by a fatal issue. I remember seeing a patient in 1873, with whom, after the third day, there was such an amelioration in the symptoms that his relatives thought him cured and flattered themselves with that assurance. But, alas! at my evening visit (6 p. m.) the pulse was small and thready, the temperature about 39° C. (102° F.), icteric hue setting in, patient prostrated. When I announced to the family that great changes might take place before morning, and that the patient might die, I was looked at with astonishment. At 2 a. m. the man was taken with violent vomitings, and in the midst of excessive groans and cries died, having thrown up a large quantity of black vomit. Such was the case with the two employés of the Panola Oil Works, who left their beds, one after two or three days' sickness, the other after thirty-six or forty-eight hours, and died in the course of twenty-four and forty-eight hours.

Duration.—The duration has already been mentioned in speaking of the symptoms. I have not seen cases of shorter duration than five days, complete cases lasting six, seven, nine or ten days, whether the patient recovered or died. Very malignant cases, as stated before, killed in twelve, twenty-four or thirty-six hours. Those which went beyond ten or twelve days generally assumed a typhoid nature.

Termination—As in all acute diseases, the termination is recovery or death. In the very mild cases the cure was rapid, without intermission to convalescence. In severe attacks the convalescence was long and tedious, the patient with difficulty overcoming the acute changes which had taken place in the solids and fluids of the body. Some, few in number, terminated in a typhoid state, with cerebral symptoms, and died. Others, after numerous hemorrhages, died, or recovered after a protracted convalescence. It was here that often the malarial fevers, especially in those who had suffered from them previously, would show themselves and be the end of the disease. Parotiditis, urticaria, etc., coming at the end of the attack, or during convalesence, was, properly speaking, not a termination but a complication. Some died asphyxiated, comatose, or in a furious delirium. I have not heard of any dying from syncope. Relapses, most frequent, from what I have heard, at the commencement of the epidemic, when the disease was unknown, were generally fatal.

Diagnosis.

The differential diagnosis of this epidemic has been often mentioned in the preceding pages. The diseases between which I had to diagnose were yellow fever, hemorrhagic, or malignant bilious remittent and pernicious malarial fevers. The march of the temperature and pulse has been of a particular interest, and by themselves these symptoms often proved sufficient to make the diagnosis. There are other symptoms, but none of them are so potent as these. So far, I know of no disease in which the pulse and temperature, after rapidly reaching their acme, will suddenly separate without any known causes during the *paroxysm* of the fever, the pulse steadily descending, taking, sometimes, several days to come back to the point from whence it had ascended, whereas the temperature will continue its ascent, remain stationary, or descend at a much slower rate than the pulse. In scarlatina the temperature and pulse in a very short time will reach their acme, 40°–41° C., 104°–105.8° F., but whether there be a subsequent rise or fall, there is a correlation between them. In yellow fever, once the pulse and temperature have fallen, a sudden rise of both, with a *strong* pulse, indicates a complication; but their rise with a *small, weak and thready* pulse indicates a fatal issue. In this epidemic, most of these complications were due to malaria.

"The study of the habitual toxic effects of and remedies for swamp poison, is the life-long task of the physician practising in the Southern or Western States of the Union. No other morbific cause is so *omnipresent*, so constantly operative, either singly or combining itself with other blood poisons."—Professor Bemiss, *N. O. Med. and Surg. Journal*, July, 1873, p. 27.

In bilious remittents we have marked remissions at the commencement of the disease, which, if not recognized, will soon disappear by the rapid successions of the paroxysms, and then the fever is taken for a continued one, and may be diagnosed yellow fever. But there we have a correlation, and here a disagreement between the pulse and temperature. In bilious remittent fevers the icteric hue is one of the first symptoms to be noticed; it only shows itself in the second stage of yellow fever, and is sometimes absent. Vomiting is always present in the first stage of the former, and is, as also the other excretions, composed of bile: many patients in this epidemic threw up bile. In yellow fever, ejections from the stomach are often absent, or if present, are mostly composed of the injested fluids and solids, and seldom of bile. Besides, these ejections are pathognomonic of yellow fever only when they assume the nature of black vomit. Hemorrhages in bilious hematuric fevers are very seldom seen, except by the urinary organs; whereas in serious yellow fever cases, they may take place from any organ, in the muscles, under the skin, etc. Albuminous urine is found in both. Pain, sensibility and dulness of the left side, indicate a malarial spleen.

The symptoms of the disease having been mentioned in detail, I think it unnecessary to pursue further this differential diagnosis.

From the following result of the necroscopies, the diagnosis is easier.

CASE I.—YELLOW FEVER.	CASE II.—BILIOUS REMITTENT FEVER.
Body—Of a uniform yellow color. Ecchymosis at reclining parts. Conjunctivæ yellow.	*Body.*—Of a pale color. Ecchymosis at reclining parts. Conjunctivæ white.
Muscles—Blood. Incised muscles of a cherry red, brightening upon exposure to the atmosphere. Blood non-coagulable, black when seen en masse, in thin layers, reddish.	*Muscles—Blood.*—Incised muscles of a red color, not brightening to a cherry red on exposure to atmosphere. Blood non-coagulable, black when seen en masse; in thin layers, blackish.
Lungs.—Normal.	*Lungs.*—Normal.
Heart.—Yellowish. Texture does not seem softened down; contains non-coagulable black blood. A few ounces of fluid in pericardium.	*Heart.*—Of a slate color. Texture of a very great consistency. Contains an immense quantity of a black, non-coagulated watery blood in r. heart; a small quantity in l. heart. A few drachms of normal fluid in pericardium.
Bowels.—Of a dark green color. Not examined.	*Bowels.*—Seemed normal. Not examined.
Stomach.—Contains black vomit. Mucous membrane thickened, congested and ecchymotic.	*Stomach.*—Contains injested fluids (tea and beef-tea). Mucous membrane congested, ecchymotic, resting as if on a slate-colored back-ground.
Liver.—Normal size. Characteristic yellow color throughout. Tears to pieces. Softened down a little. Exposed to the air, assumes a bright cherry red, without losing its yellow hue.	*Liver.*—Hypertrophied. Light slate-color. Great consistency. Tears with difficulty.
Gall-Bladder.—Normal size. Contains a black-green viscous bile. In thin layers is of a golden color.	*Gall-Bladder.*—Hypertrophied. Contains an ochre-yellow bile. In thin layers is of a deep green color.
Spleen.—Hypertrophied; four times the size of one's fist. Consistency normal. Cut surfaces show numerous white spots. Color dark brown. (N.B.—This patient had suffered from intermittent fevers all summer.)	*Spleen.*—Hypertrophied; six times the size of one's fist. Consistency normal, but surfaces show few white spots. Color chocolate.
Kidneys.—Slightly hypertrophied. Of a yellow color. Do not seem congested.	*Kidneys.*—Hypertrophied; larger than the fist. Of a slate color. Congested. Surfaces of calyxes congested and ecchymotic.
Bladder.—Full of urine, which contained albumen and bile. All parts in this post mortem were of a yellow coloration more or less marked.	*Bladder.*—Contracted; contained about half an ounce of liquid. All parts in this autopsy were of a slate color, more or less marked.

VII.—PROGNOSIS—MORTALITY.

Prognosis.—From what has already been said, the prognosis is known. The pulse and temperature would almost, by themselves, be sufficient to establish it. It also varies according to the nature of the case. In mild cases it is always favorable; in very bad ones, most often fatal; in intermediate cases it is very serious, since one-third (Dutroulau) die.

Mortality.—Compared to epidemics in general, it has not been very great—1500 deaths, for a population of 20 to 25,000 (supposed number of those who remained in the city during the epidemic) would be from .06 to .07½ per cent. of deaths to the population. If only half of those who remained were taken sick (and it is estimated that three-fourths, if not more, of these were stricken with the disease), the proportion is .12 to 15 per cent., but I think .09 per cent. would be the most correct proportion. Out of twelve epidemics in two different cities, Mr. Dutroulau reports the following proportion of deaths.

Years.	Martinique.			Guadaloupe.		
	Treated.	Died.	Proportion per 100.	Treated.	Died.	Proportion per 100.
1851....	178	24	12.9	....	...	....
1852....	1422	367	25.8	1152	164	14.1
1853....	198	69	34.8	372	108	29.1
1854....	1	69	34.8	568	242	42.2
1855....	558	33	14.7	140	63	45.0
1856....	1210	309	25.5	136	68	50.0
1857....	862	382	31.6	216	78	36.1
Totals	4429	1132	25.5	2584	723	27.9

From the above statistics, the Memphis epidemic of 1873 was not such a murderous one.

Out of 494 deaths from yellow fever, gathered from the daily papers of Memphis, whose ages, sexes and races are known, we have—

Total number of deaths----494.	Whites, 474	Males----302 Females.172	Youngest Ages...	White, 10 days.	Oldest Ages.	W. man----73 W. woman 79 B. woman..75
	Blacks...20	Males..----14 Females...6		Black, 3 months		

White.		Black.	
Males.	Females.	Males.	Females.
Under 1 year.. 3	..	Under 1 year.. 1	–
1 to 9 years–17	20	1 to 9 years. 1	–
10 to 19.......37	39	10 to 19....... 1	1
20 to 29.......70	32	20 to 29....... 4	2
30 to 39.......87	32	30 to 39....... 5	2
40 to 49.......62	25	40 to 49....... 2	-
50 to 59.......17	18	50 to 59....... –	–
60 to 69....... 8	4	60 to 69....... –	–
70 to 79....... 1	2	70 to 79....... –	1
302	172	14	6
Total......................474		Total 20	

The northwestern portion of the town (Happy Hollow) where the disease first broke out, being inhabited chiefly by the poor and filthy, the disease raged with violence and spread with rapidity. When it had reached the southern portion of town, its propagation was slower and its victims fewer in number. Here, many of the inhabitants had left; the number of sick was smaller, as also the number of fatal cases. The proportion of deaths will, I think, be found to be smaller here, where nursing and hygiene were as good, as they were bad among the poor, whose misery, dirt, filth, and agglomeration, rendered them in some cases wretched subjects for the disease. Sick, well, old and young, cats and dogs, were all "pêle mèle" in the same room, and in the same bed.

Having one day noticed in the infected district a dead goat, I was desirous of making the post mortem to ascertain the cause of death. This could not be made. I was anxious to know whether animals died of yellow fever. I have made researches on this subject, and find in Griesinger,* page 104, sec. 105, "Compared Pathology of Yellow Fever." Animals sometimes show well marked symptoms of yellow fever, the dog in particular; even the chickens, and those that had been imported from Europe into British Guiana, died during the epidemic with ejections of blood from the stomach (Blair).

VIII.—Nature of the Epidemic.

As in all mixed epidemics, that disease which kills the greatest

* Griesenger. "Maladies Infecteuses," Traduction Lemattre. Paris, 1868.

number gives its name to the epidemy. Whenever yellow fever is one of the diseases it is very apt to take the lead, as, except the plague and cholera, no known disease is as murderous. That this epidemy was of a mixed nature, has been clearly proven by the results of three autopsies of subjects taken at random, and also by the march and symptoms of the cases.

As regards the etiology, it was infecto-contagious. I say infecto-contagious, for though it is known that yellow fever is positively an infectious disease, it has not been proven to be positively *non*-contagious. Many contend that it is contagious, the majority that it is not: each side defends its thesis on very good grounds and with plausible and seducing theories. But before this important question be solved, it is necessary that we should come to a perfect understanding about the words *contagion* and *infection*. The importance of the question does not allow me to enter into its details, in this paper, as it demands a thorough investigation, which would bring us too far for the practical subject. For the present, I shall say that it is infecto-contagious.

As regards its anatomy, it is a disease *totious substantiæ*, whose pathology is the result of the cause. It cannot be looked upon as being of an inflammatory nature, because traces of this disease are sometimes found in the brain, stomach, kidneys, etc.; nor of a purely anæmic character, on account of the state of the heart, liver and blood. It is the result of a specific blood poisoning, most probably of its albumen, and most unlikely of animalculæ, as none of these to my knowledge, have ever been discovered in this liquid. It is not a poisoning of the corpuscles, as proved by the intense cherry-red hue assumed by them upon exposure to the air. Were these altered, they would not absorb oxygen.

Unlike malarial fever, a severe attack guards against future attacks. I have neither heard, seen, nor read of any one being sick a second time with yellow fever who had previously been very ill with it. Light cases are subject to a second attack, which may again be mild, very severe, or fatal,

IX—TREATMENT.

The treatment was as varied as the theories from which it originated. I have heard a great deal of the expectant treatment. Before going further, I will ask, what is the meaning of expectant treatment? If I am not mistaken, it is one in which nothing is prescribed by the physician, except to meet such symptoms as arise during a case of sickness. He "expects." But if he prescribe a purgative, mustard foot-baths, and probably some alcoholic stimulants, does this not look more like acting than merely expecting? Such was the treatment which most of the physician prescribed and called expectant. Then came the *strictly* symptomatic treatment, the most judicious and certainly the safest, in my opinion, in our present knowledge of the disease. The counter irritant treatment—applications of large blisters with a view to draw the disease out. I do not know of what advantage it has been, or what good it may do, since the disease is a general one (blood poisoning). In one case it seems to have caused a retention of urine. The quinine and anti-quinine partizans—some gave quinine in every case, with a view to its anti-malarial or sedative action, whilst others would not give even a grain, for fear of *killing* their patients.

Dr. Luke P. Blackburn, of Louisville, Ky., believing yellow fever to be a specific disease of the class eruptive fevers, thinks that it should be treated as these fevers are; expectant in the first stage, i.e., put the patient in bed, and keep up a gentle action of the skin, with sufficient coverings, warm foot baths, and warm drinks. No purgatives of any kind to be given during the first stage, as they may have a drastic effect, which is very unfavorable. "I look upon the fecal matter, coated over with bile," continues the doctor, "as being the most soothing coat which the bowels can have at this stage of the disease." When the second stage sets in, when the yellowness of the skin exists, then act: give purgatives, apply leeches, etc., according to judgment. Never give quinine, for this drug is fatal in yellow fever."

This, it will be seen, is the very opposite of the theories generally received, and yet the gentleman reported cases of success, and of death.

The most general treatment during this epidemic was a purgative—castor oil, there being an antipathy for the saline cathartics, and mild sudorifics (generally warm mustard foot-baths) in the first stage, alcoholic stimulants in the second. All reported cases of death and cases of success; the latter the more numerous. Does not such a result, with such a varied treatment, prove the mildness of the epidemy?

The precise nature of the poison being unknown to us, the most rational treatment is the one based upon the nature of the symptoms and the pathological changes.

That it is not an inflammatory disease, is proved by the changes found after death in those that have died after a very short illness, and by the nature of the blood which, though at the outset (first twenty-four hours,) of the disease will form a thick, solid clot, is found after death black, non-coagulable. We do not find those solid, well formed clots, which are often met in those who have died of a true inflammatory disease or of heart disease, when, previous to death, the blood was in a healthy state.

This brings us to speak of the anti-phlogistic treatment, of which blood-letting is the principal measure. The profession generally, in Europe as in America, is opposed to bleeding in all diseases. Without discussing whether or not we have fallen from Scylla into Charybdis, in thus substituting a total abnegation for the former absolute faith in the use of the lancet, I have not heard of any one using this modus curandi, in Memphis. I have no doubt that if it had been employed, the result would have been the same as with the other modes of treatment, provided it should not have been abused. It is this great abuse of the method which has caused its total abandonment. "Blood-letting must be employed only on very robust and plethoric persons, and even then, only once or twice at the utmost, at the beginning of the attack, always with moderation, taking into consideration the strength of the patient and the violence of the fever. Health and life are in the blood: *Anima enim omnis carnis in sanguine est.*"* Mr. Dutroulau from his long experience concludes that, "If we must beware of the systematic abuse of blood-letting, its appropriate and reasonable use is still one of the most potent and efficient therapeutical agents."† He then mentions the manner and time of extracting blood.

I have bled but once, in 1872: the patient died, and in other similar cases where I did not bleed death nevertheless resulted, with no material change in the march of the cases. It certainly has the good effect, in plethoric individuals, of guarding against local congestions and sanguineous stasis.

Dr. Blackburn was, I think, the only one who made use of leeches in Memphis, and it was against local congestions. Here they are certainly preferable to general blood-letting, but they should be placed where compression can be made and secondary

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* Medicaments et Precis de la Method de Masdevall, Docteur, etc., etc.: Louis Duclot, impriment New Orleans, 1796.

† Loc. cit., p. 449.

hemorrhages, from the leech-bites, stopped, should they take place. I have had no opportunity in this epidemy to draw blood.

Some mild cases recovered without any prescription except a purgative and rest in bed for five or six days. Others died in spite of the best treatment.

If I saw the patient at the commencement of the attack, I gave the purgative cinchona draught, in preference to other cathartics (℞—aq. bullientis oj, ext. fl. cinch. ʒj, magn. sulph. ℥j or ℥jss. M. S. To be taken in three doses, at fifteen minutes intervals.) This would act as an emetic if the stomach was full, as a diaphoretic, diuretic and cathartic, whilst the cinchona was a tonic. Two or three hours later, or after the first evacuation from the bowels, five grains (sometimes ten for the first dose,) of quinine were given, to be repeated three times daily. This would be stopped at the fall of the fever, and administered anew if necessary. The recognition, as I thought of a malarial taint in these cases, led me to give quinine, and I am happy that I did, as all my cases except one recovered. My object here was not to abort the disease by the administration of the drug. Yellow fever is a self-limited disease, and experience has proved that quinine cannot abort it. Quinine not only proved beneficial as an antidote to the malarial poison, which most of the patients had in them, previous to their attack of yellow fever, but it no doubt also had a good effect on the contractility of the arterial parietes. I have had, except in one fatal case, no hemorrhages, and in one of the two cases that were treated on the expectant plan, the congestion of the gums was more marked with slight bleeding.

"According to the miasmatic origin of the fever, sulph. of quinine would be the specific treatment *par excellence.* Whenever yellow fever was preceded by one or more paroxysms of malarial fever, or whenever abundant perspirations during the first stage, masked the true character of the disease, I have given sulph. of quinine, but failed to obtain a favorable influence on the march or future gravity of the case. Some physicians at Guadaloupe attribute to this drug the abundant hemorrhages and vomitings of a bad character, which follow its administration. *It is only when true intermittent fevers complicate the symptoms of yellow fever that good effects have been obtained from the use of sulph. of quinine* (italics my own). The epidemic on board the *Herminie*, at Sacrificios, is for me a proof of this."* From one

* Dutroulau, Loc. cit., p. 450-1.

who has the reputation of being a strict observer and a student, and who has for nearly thirty years of his life seen yellow fever every year, has not such an assertion great weight in proving that the epidemy of Memphis in 1873 was of a mixed nature? If quinine is so fatal in yellow fever—if it is only productive of evil, why have not all the patients under the care of Dr. Otey and myself, and a few others who gave quinine, died? They should all have died, or at least have shown *very bad* symptoms. I have not observed that the symptoms were more severe here than with those who gave no quinine. If correct statistics could be had, I doubt not that it would be ascertained that the proportion of deaths by the quinine treatment, in this epidemy, is very low. No doubt some cases of yellow fever have been treated by quinine, and perhaps made worse, but the number is smaller than that of those whose complications were not ameliorated by administration of the drug.

Many opposed the administration of the drug in the first stage, but gave it in the second, as a tonic. I say that its beneficial effects here were not so much as a tonic, but as a specific antidote to the poison of malaria, which complicated most cases. Most of the patients that I have seen had an enlarged malarial spleen.

Besides, if there be no complication, why not give quinine in first stage to control animal heat? "It appears, also, that the administration of an active purgative, either calomel or castor oil, followed immediately by one or two full doses of quinine, in the first twenty-four hours of the fever, produces beneficial effects, in unloading the portal circulation, and controlling, to a certain extent, the production of animal heat"—Prof. Joseph Jones, *Boston Med. and Surg. Journal*, August 28th, 1873.

From all that precedes, I think it proven that the administration of quinine in this epidemy was wise and called for.

A purgation commenced the treatment in almost all the cases. This was accompanied during the febrile stage by warm drinks—orange leaf, or black teas, lemonade made by pouring boiling water over lemons—were generally prescribed, according to the patient's taste. In mild cases, except a purgative, no medicine was given.

Against the headache, high temperature, and dry skin, I used cool applications of water and vinegar to the head, sponging of the whole body, under cover, and large enemas with the same liquid;

hot mustard foot-baths, and spirits of Mindererus. These proved sufficient. Frictioning with quinine and the half of a lemon, whilst it is pleasant and soothing to the patient, relieves internal congestions, excites the capillary circulation, and promotes sudation. When the thirst was great, pieces of ice were allowed. Carbolic acid drinks, champagne, seltzer-water, acted very well in quieting sick stomachs. These would often be the only substances tolerated by that organ.

A slice of lemon I found to be the best agent in removing sordes about the gums and teeth. While it is agreeable and cooling to the patient, it is a very good styptic to the bleeding gums.

Chlorate potash acted well as a gargle in throat affections.

In one case accompanied with frequent and scanty vomitings, first symptoms of black vomit, and insomnia, hydrate of chloral in 10–20 grains doses acted well; the irritability of the stomach was greatly relieved, and some sleep obtained. My experience with this drug, however, is not extended enough to judge of it with satisfaction, as the fatal case was the only one in which I employed it. From its action here, I will try it again. I have seen this drug employed by others. Some had no satisfactory result, which I think was due to the dose not being large enough. I have not heard that its association with bromide potassium was of any advantage.

Some gave opium. I have never used it; the experience of my predecessors being opposed to it, as tending to local congestions.

Musk has seemed to act very well; here again I have not had a fair trial. It was given in one case only, in 3 grain pills. One pill was sufficient to quiet the ataxic symptom. I have not heard of any one else using it.

On no occasion had I to prescribe any special diuretic. None of the patients under my care showed symptoms of suppression of urine.

If the patient's extremities were cold, besides the usual remedies in such cases (coverings and bottles of hot water), sinapisms were here applied. Pains in the epigastrium and other parts of the body were relieved with sinapisms or blisters. I had no occasion to use the latter.

In irritable stomachs, enemas of whiskey and fluid extract of cinchona, with or without beef-tea as a vehicle, supported the patients very well and brought up the pulse.

Perchloride of iron, turpentine emulsions, and arom. sulph. acid, were the inward medicines prescribed for hemorrhages. External treatment pro re nata. To the turpentine emulsion creosote was sometimes added. I have not observed from the addition any advantage, nor any specific effect from the creosote against the poison. I have had no occasion to prescribe astringents; if I had, I would have preferred the preparations of rhatany root and the mineral acids.

Besides the above named sedatives, Dr. Barbat, of New Orleans, employed the cold douches in one case of furious delirium, with very good results (sic).

Such, in brief, were the forms of treatment most generally pursued. In the first stage, as a rule, there was not much to do. It was in the second stage, and especially when complications occurred, that the therapeutical artillery had to be moved forward.

Nor is the diet to be overlooked. In the active stage the patients do not desire to eat; but when this period is on the decline, some will have a voracious appetite Great care should be taken not to allow them any solid food—none but liquids—tea, chicken broth, beef-tea, milk punches, milk and coffee, good wines, brandy, whiskey, beer, porter, ale. The malt liquors I prefer to the alcoholic, but generally conform to the taste of the patient and susceptibility of his stomach. Then comes the solid food, crackers and toasts; soup, chicken, fish, veal, etc; the proper time to give these depending on the manner in which the stomach has supported and digested the fluids.

Convalescence in some cases was rapid, in others long and tedious, as is always the case after a true and typical attack of yellow fever. Here the patient had to be very carefully guarded, that he should not commit any imprudence which might lead to a relapse.

The yellow fever epidemy of 1854, one of the worst that ever visited Guadaloupe, gives the following proportions of deaths, with the following forms of treatment: blood-letting, over 53 per cent.; sulph. quinine, over 40 per cent.; emetics, over 58 per cent.; mixed treatment, over 39 per cent.

Prophylactics.

Therapeutics having proven its incapacity in arresting, and in many cases in curing the disease, we naturally look to hygiene. That good and proper hygiene can do a great deal has been shown, by the malignancy of the disease when it raged amongst the poor, and its milder character among the wealthy class.

So far, we know of but one positive prophylactic means, which is to *flee from the disease if you can.* This is the only means of protecting one's self from yellow fever. No known agent will do this. Far, therefore, from blaming the 20,000 who left Memphis, I say to them, well done. Had they remained in the city things would have been worse and the mortality greater.

They were not physicians, they were not nurses, they were then "hors de combat," and their places were away from the battle field.

Had it been possible, when the first case of yellow fever was recognized, to have removed from the city every person who was well, the disease would have died out immediately.

Refugees from an infected locality should be careful not to return until all traces of the disease have disappeared.

Elevated positions have been recommended as convenient places of retreat. I have not noticed that the epidemy experienced any difficulty in ascending the bluff from "Happy Hollow" to Promenade street. Perhaps if all communications had been cut between the hollow and the bluff, from the start, this would not have happened.

At Guadaloupe is a place called Camp Jacob, situated three miles from the sea, and 550 yards above its level. For six years, whenever an epidemy has occurred, those who were not attacked were sent to this place, communication with the sea shore cut, and never has any case of yellow fever shown itself in the camp.

As regards prisons, there is a belief that they are prophylactics against yellow fever, because, as it is supposed, the poison of this fever is heavy and, as it were, trails near the ground, and is unable to climb over its walls. If such be the case, it would be a blessing for one unprotected to be put in prison during any epidemy. If this poison be of such a specific gravity as to be too heavy to ascend, it must therefore have been conveyed up from Happy Hollow by some party on to the Chickasaw Bluffs.

In Guadaloupe persons were sent to Camp Jacob, but "communication with the sea-shore cut." Now, if the elevation by itself was sufficient to guard against the disease, why cut off communications? Whether the poison has to mount a bluff or climb over the walls of a prison is not practically different; it is always an ascension which is necessary, to reach the top of the bluff on the one hand and the inside of the prison on the other.

Now, if a prison's wall is protection against yellow fever, so should a high bluff be. Were the inhabitants of the city of Memphis protected from the poison of yellow fever which was raging in Happy Hollow? No. Why? Because the intercourse between the hollow and the city was so free, that those who visited the hollow brought the germ of the disease back with them and fell sick. Now in what manner this germ was brought up is not likely to become a settled question.

On the other hand, was the prison of Memphis visited by the disease, as were the bluffs? No. Why? Because, except the employés, no one was allowed to go in and out, and no chance therefore, or but very little at all events, existed, for the germ of the disease to be brought in. Two doubtful cases, by the report of Dr. John H. Erskine, are said to have broken out and were immediately removed from the place. Besides, the prison was in excellent hygienic condition.

It is natural that Promenade street (the first on the bluffs), then First, Second, Third, etc., should have been attacked first, as it was the inhabitants of those streets who were the most in communication with the hollow, and were of the same class of people.

Therefore—1st. We cannot look upon elevation of locality as being preventive of yellow fever (if really it ever is), unless communication be cut off entirely with points of infection.

2d. The epidemy at Memphis commenced at the foot of the bluffs, and soon ascended it.

3d. That in spite of the high walls of the prison there were two doubtful cases in it, which were immediately removed, and if the prison did not suffer in the same ratio as the inhabitants of the bluffs, it is because isolation and good hygienic conditions here existed.

4th. This does not prove whether or not the germs of the disease have a low altitudinal range, but that isolation is necessary to prevent their spread.

As regards disinfectants, of whatever kind, we should be very cautious in conclusions in respect to their power in arresting or preventing the spread of yellow fever. The study of disinfectants, and especially carbolic acid, is in its infancy, and it is only after repeated trials during one epidemy, or different epidemics in different places, that a final conclusion, pro or con, can be established. In 1870, the yellow fever in New Orleans did not show any tendency to spread, beyond the localities of the French Market, Royal and Bourbon streets. The disease was said to be sporadic. Disinfection with carbolic acid was certainly not used so extensively as it was this year. One case, and the only one in that locality, happened within a square of my house. The disease did not spread from here. I know positively that carbolic acid was not used to prevent its spreading. This, as many other sporadic cases, show the want of tendency of the fever to spread that year. Parties were cautioned against going in the infected district. Had carbolic acid been employed, to it would have been attributed this result. Might not this have been the case this year?

In Memphis, after carbolic acid had been sprinkled about the streets for several days, I did not observe any change in the situation, nor have I heard of any taking place later, as a result of carbolic acid disinfection.

I do not insinuate, in the preceding lines, that carbolic acid disinfection should be abandoned. It is to be hoped that it will be allowed to have a fair trial, and will only be abandoned after it has been positively proven to be useless.

During an epidemy, individual prophylaxy demands an avoidance of all occasional causes of diseases. Individuals should be cautioned against the use of spirituous liquors, and advised to keep the bowels regular, and sleep in well ventilated rooms. Medical opinion being divided as to the contagiousness or non-contagiousness of the disease, it becomes an essential point not to expose one's self to contagion.

This epidemy has once more proven that yellow fever can be transported. It proves the necessity of guarding against this transportation. When a ship or steamboat is known to be infected, it is not by detaining it one, or one hundred days, in quarantine, that any good can be obtained. This does not eliminate the poison. The ship should be unloaded, well ventilated, washed, and disinfected from top to bottom, and especially the hold.

The strict cleanliness of houses, streets, alleys, yards, privies, cess-pools, the removal of organic and vegetable matter, etc., only need mentioning as important.

XI.—Epidemic Causes and Etiology.

(*A*) *Origin.*—The fever was imported into Memphis by the steamboat Bee, plying between New Orleans and St. Louis. Since writing my paper on the origin of the epidemic,* I have had other and positive information. The sick men came from New Orleans. The boat was loading its barges in the Fourth District, in the neighborhood of an infected ship. (The Valparaiso at that time was moored in the Fourth District. She brought us the first case that we had in New Orleans this year, 1873. She came from Havana.) Three or four men, including the captain of the Bee, fell sick on her trip up the river. The disease was thought to be bilious malignant fever. Arrived at Memphis, two men were landed, being too sick to continue their voyage. One of them was taken into Riley's cabin in Happy Hollow, the other brought to the station house on Adams street, several squares off in a S. E. direction. Both died; the *man in Happy Hollow a few hours after* having been received in Riley's cabin. This was August 10th. On the 11th the captain died. His body was taken back to Memphis, and lay for several hours uncoffined on the wharfboat.

From here the disease spread in Happy Hollow, then up the bluff, and throughout the city.

(*B*) *Geography.*—Memphis, on the Mississippi River, on the 35th parallel, is not an usual abode of yellow fever. It is situated on the Chickasaw Bluffs, about fifteen or twenty feet above Happy Hollow. It is north of the yellow fever belt. The city has been visited three times by the fever, which was each time imported.

(*C*) *Topography*--The city is in a malarial region. "What in Memphis is styled 'Happy Hollow' is a very low, flat area of about four acres, immediately on the river, near the northern limit of the city. It is under the Chickasaw Bluffs, so sunken that during high water it is largely submerged, and after the tide has fallen is left partially covered with stagnant ponds and slimy ooze, whose exhalations are noisome and offensive. Its soil is alluvial, and upon this garbage has been continuously thrown until it has become extremely filthy. It is the natural drain for the gutters of the overhanging bluffs, through which the sewage steadily trickles. It is, in addition, the home of a low class of

* Vide N. O. Medical and Surgical Journal Nov., 1873.

Irish, and the favorite landing place of flats and rafts, whose occupants are proverbial for their carelessness and uncleanliness. During the hot summer months this accumulated mass of filth has been festering and rotting in the sun, exhaling mephitic gases which, in themselves, are potent enough to induce infection, only needing the germ of yellow fever to be sown, to yield all the fearful fruits of this great epidemic. Such was its origin, and such the focus from which it started." Dr. John H. Erskine, President Board of Health, Memphis.

This place in winter receives the north wind in full, but in summer is deprived of the south wind, which passes over it from the bluffs. It is not well ventilated, directly subject to the fogs of the Mississippi, which renders its atmosphere more or less impure. In this hollow are two or three large manufactories which occasion more or less dirt. It, as also the N.W. portion of the town, on the bluffs, is inhabited by the poor. Here was the quintessence of misery, agglomeration, dirt and filth.

The Adams Street Station-house, on the other hand, situated half a dozen squares to the southeast, in the city, is always kept in a good sanitary condition.

It results from these two situations, that the atmosphere of the former is more or less *impure*, that of the latter comparatively more or less *pure*.

Now, two men were put off from the towboat Bee. One was received in Riley's cabin, in Happy Hollow, the other was brought to the station house. Both died. Riley was a dissipated man, living in an unhealthy locality. He caught the fever and died. From this it spread through Happy Hollow. At the station house the men were more regular in their habits, in a healthy locality, and no new cases occurred after the death of the Bee invalid.

A very important question here rises. Why did two men coming from the same place, New Orleans, dying of yellow fever, one communicate the disease, the other not? I see no other reasonable solution to the question except that above given—salubrity versus insalubrity; regular habits vs. irregular habits.

I here tender my thanks to Capt. J. W. Trask, of the Memphis *Avalanche*, for valuable information on this subject.

(*D*) *Meteorology.*—What exact part it took in this epidemy it is difficult to say. Had the fever not left Happy Hollow, the dampness and pressure of its atmosphere, it being immediately on the river bank, might have been thought to have had an active part in the spread of the fever. But the disease reached the bluffs and other portions of town, and was as bad here, where the atmosphere was dry, pure, rarefied. Here, as in other epidemics in different parts of the world, the temperature was high, with a dry season of long duration, which is rather unusual for Memphis.

That meteorology acts powerfully on the human organism, in determining a morbid aptitude, is proven by the different sensations that one experiences during different seasons of the year and changes in the weather.

Atmospheric electricity is not without powerful action, if we judge of the momentary effects of rain storms, when some patients will become irritated, nervous, will shout, cry, leave their beds to run about the room, whereas others will expire. This is an observation of daily occurrence. Our patient of case iv. died at 7 a. m. during a change in the weather.

These changes in the weather have a great effect on the mortality in yellow fever. Sudden and noted falls of temperature prevent the explosion of new cases and kill the sick; whereas warm weather has no particular tendency to kill, but favors the production of new cases.

All who have observed many epidemics of yellow fever, know that a good frost kills the germ. Such was not the case in Memphis. It was not until after repeated frosts, and ice one inch and more in thickness, that the epidemy finally gave way. To use a common expression, it died hard. Does not this prove a certain tenacity not peculiar to yellow fever? This disposition of the epidemic to "die hard," in spite of frosts and ice, is due, in my opinion, to the influence of malaria which tainted the disease. Fall is the season of the year when malaria reigns with most violence.

(*E*) *Predisposing Causes.*—The disease showed no preference as to age, attacking the young, middle-aged, and old, and except the young, in about the same proportion that they stand to the population. The very tender age would seem to be somewhat less liable to the fever. In this, it is unlike measles, scarlatina and hooping-cough, which are more frequent with children than with adults, and more like typhoid fever, which attacks at all ages, and numbers more deaths between 20 and 45 years. Like this also, it is infecto-contagious, its symptoms are aggravated by misery, dirt, filth, and the crowding of people. It has its places of predilection, but may be transported abroad.

Nor have I observed any preference as to age or profession.

That the black (African) race is less liable to catch yellow fever, is proved by the small number of deaths among the negroes in this epidemic.

Not being acclimated is the principal and perhaps the only predisposing cause to yellow fever. (Dutroulau.)

(*F*) *Occasional Causes.*—Any indisposition, however light, was often a sufficient cause to bring on an attack of yellow fever. Fright, sorrows, insolation, excess in eating, and especially in drinking, were often followed by an outbreak of the fever..

(*G*) *Transmissibility.*—The divergence of opinion which to-day exists, regarding the contagion of yellow fever, is sufficient to prove the difficulty attending the solution of this most important question.

The meaning proper of *contagion* is a contact with, that of *infection* a poisoning, a destroying by the means of mephitic miasms.

Infection differs from *contagion* in this, that the latter, when its germ is once produced, no longer needs for its propagation the intervention of the primitive causes which gave it birth. The germ is a self-reproducing agent, multiplying anew by contact, and to a certain extent, independently of general atmospheric conditions. *Infection*, on the other hand, is due to the effects on the surrounding atmosphere of special morbific substances, and only acts within the limits of that focus which the morbific miasms originate. It is, however, generally admitted in pathology, that *infection* may be propagated from one sick person to a healthy one, as is contagion; but this is not done by contact: it is due to a poisoning of the surrounding atmosphere by the patient, who, in this case acts the part of a focus of infection.

Syphilis is the type of contagious diseases. It is only through a contact, and by no other means, that we can catch it.

Malarial fevers are the type of infectious diseases.

Two modes of transmission are recognized to contagious diseases—the virus and the miasms; two modes of genesis—the germination in situ, and the absorption by the internal and external integuments.

Infection knows but one mode of genesis, that by pulmonary or cutaneous absorption, and but one agent of transmission, that infectious miasm which contaminates the atmosphere of focuses of infection.

Such, according to the best authorities, is the meaning of the words Contagion and Infection.

Were we to take syphilis and malarial fevers as examples, these questions would be most easily solved.

But, miasms are recognized as a common agent through which contagion and infection are propagated. Now arises the question, When is that miasm one of contagion, and when is it one of infection? Most difficult of solution, this problem will probably ever remain unresolved, as physicians will disagree, and this is one of the subjects on which they are most likely to do so.

Such are the theories regarding contagion and infection.

One fact—one positive fact—acquired to science is, that yellow fever is transportable. That it is infectious, has been proven by the fact that the hold of an infected ship, whereas there be no person sick aboard, if it be visited by persons liable to the disease, will communicate the fever. The 3d, 4th, 8th and 9th sections of the report of Dr. Melier, on the epidemy of yellow fever brought to St. Nazaire from Havana, by the ship "Anne Marie," read as follows:

3d. That it was neither by the merchandize nor by the men that the disease was introduced, the former having been delivered to the railroad depots for transportation, without any accident resulting from it, no more than by the men after leaving the ship: important fact in harmony with numerous former observations.

4th. That the cause, unknown in its nature, which has produced these accidents was to be found in the ship, and more especially in its hold and deep portions, and we understand how the disease, which commenced on the high seas, should have shown itself with more violence while the ship was being unloaded.

8th. That they tend (the epidemies), besides, to support the doctrine of the propagation of the disease by the patients.

9th. That from the double consideration of the importability and transmissibility, results, as a third consequence, the necessity of sanitary measures.

From the preceding pages result—

1st. That yellow fever is positively infectious.

2d. That it is contagious?

3d. That, as in former epidemics, it was imported into Memphis, this time by the steamboat Bee, plying between New Orleans and St. Louis, and that it spread through the medium of men, two of them having been landed, the boat continuing its course up the river.

4th. That it requires a certain state of uncleanliness and filth for its propagation, as proved by the fact that two men were landed sick, one being received in Happy Hollow—a dirty, filthy place—the other at the station house on Adams street—a clean and well kept place. They both died, and it was only in the former place that the disease spread.

5th. That it happened during a warm summer, and in the months of August, September, October, and first days of November.

6th. That it required several frosts and heavy ice to check the disease, which is unusual in the United States, and that this shows a certain tenacity in this epidemic which, in my opinion, is due to malaria.

7th. That prisons and high places are exempt from the fever only when constant communication with the focus of infection does not exist.

8th. That for the present we should be cautious *of conclusions regarding the* prophylaxy of carbolic disinfections.

I have heard from Memphis that the two cases which I left convalescent were cured.

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ARTICLE III. *Vesico-Vaginal Fistula, Cases of, Establishing an Innovation in its Treatment.* By M. SCHUPPERT, M.D.

In the ephemeral *N. O. Medical Record*, edited some years ago by Dr. Dowler, of this city, I gave publicity to eighteen cases of vesico-vaginal fistula, treated by me. Subsequently, before the surgical section of the 20th meeting of the American Medical Association, I read a paper of mine containing remarks upon a modification in the treatment of vesico-vaginal fistula. I will now give here a continuation of cases operated upon by me, and which have contributed the main material to the remarks above referred to. From that report, which has never been published except in the "Transactions of the American Medical Association," accessible only to a few of the readers of this Journal, I will extract as much as I think proper to illustrate the reported cases, and to establish my claims of having much simplified the treatment of the disease in question.

Case XVIII.—Sarah McCans, 17 years old, a stout and otherwise healthy negro woman, from Morehouse Parish, La., married, stated that she had been delivered instrumentally of a dead child on Christmas day, 1867, after having remained in labor four days and nights. Two doctors had attended her during the last two days of her confinement. Fifty-six hours before her delivery, and when she felt the fœtus still alive, a midwife, in order, as she said, to speed parturition, had, with another person, lifted her up and dropped her down again on her feet several times, whilst the midwife had made pressure on the abdomen. That procedure the midwife had called "delivery by shaking." The novelty of this method, though more shocking than shaking, deserves probably a place in the history of obstetrical curiosities. After the lapse of two weeks since the birth of a dead fœtus, the woman experienced the escape of urine by the vagina. The fistula occupied the middle of the anterior wall of the vagina, with the largest diameter in the longitudinal direction. The woman was operated upon on the 27th of March, 1868, at the Freedman's Hospital of this city. The fistula, after its borders had been well pared, was closed longitudinally by four silver wire sutures, twisted. No chloroform was administered. The encumbering after treatment was entirely dispensed with. The patient did not stay in bed, but immediately after the operation attended to her work in the institution, where she was employed as a seamstress. She passed her urine several times during the day, but seldom more than once at night. On the 13th of April, 17 days after the operation, the sutures were removed, the fistula had disappeared, and the woman was discharged a few days afterwards from the institution completely cured.

Case XIX.—Victoria Eastman, a negro woman, was also an inmate at the Freedman's Hospital. Her age was unknown to herself. Born in Louisiana; unmarried; had given birth to two children, the last one stillborn. Patient was delivered by an old negress; the time she did not remember, but thought that she had been in labor several days, and had observed the urine running away some time after her last delivery. The woman stood four feet and six inches in her socks, and though very corpulent, was extremely irritable. She could not be examined, but under chloroform. The fistula occupied the upper portion of the vagina, the bladder being partially everted. The opening was large enough to allow two fingers to enter. The uterus was not visible, though a small rent in the vagina led to it. The operation was performed on the 14th of March, 1867. The borders of the fistula being pared, were brought into coaptation and closed by six silver wire sutures, the wires being twisted. The vagina, through the operation, became considerably shortened, forming a perfect cul de sac, with a small opening leading to the uterus. The woman was confined to bed, and ordered to pass her urine frequently. On the next day symptoms of pneumonia set in, and the disease became in time fully developed. Some days later hospital gangrene, then prevalent in the institution, though that circumstance had been unknown to me at the time ot the operation, attacked the parts operated upon. During three weeks the life of the patient hung on a thread, but her system fought both diseases bravely, and she recovered. On the 6th of April a large slough of the vagina came away, containing four of the wire sutures. The slough contained also a great deal of purpuric acid. Though no catheter had been applied, all the urine had been discharged by the natural outlet, until gangrene had done its worst. The woman was again operated upon on the 17th of November. The extensive opening in the vagina, through which nearly the whole of the bladder was everted, was closed by nine interrupted silver wire sutures. On the next day urine was observed to escape by the vagina; still no catheter was applied, feeling assured that another operation would be necessary. On the 26th of November the sutures were removed, and no urine came away—the enormous fistula, to my astonishment, had become closed. The vagina presented a length ot not more than one inch and a half; though the vagina might have been closed up entirely, the woman would not consent to it, being perfectly satisfied with what had been left.

Case XX.—Mathilde Robertson, 23 years old, married, from Canton, Miss., and also an inmate of the Freedman's Hospital, had had three children. Her last confinement happened in April, 1867. After three days of labor pains, she was delivered under the assistance of a colored woman. She observed the urine to drip away on the day of her delivery. An inspection revealed an extremely narrow vagina, presenting three fibrous bands stretched across its anterior wall. The space between the upper two led into the uterus, into which a probe could enter. Between the two lower bands was the aperture leading into the bladder. The patient was operated upon on the 17th of November without chloroform being used. Dividing the bands on both sides, sufficient room was gained to get at the fistula, which, after denuding its edges, was closed with five interrupted silver wire sutures. The vagina was filled with cotton saturated with glycerine and carbolic acid, since there were still some cases of hospital gangrene present in the institution. No after treatment, no catheter applied. Patient preferred to keep her bed. She passed urine frequently, and began to walk about on the fourth day after the operation. On the 26th of November the sutures were removed; a cure was accomplished.

Case XXI.—Bridget O'Connell, from Ireland, 36 years of age, and mother of seven children, contracted a fistula in her last confinement, in March, 1863. After a tedious labor lasting four days, the fœtus had been finally removed by the forceps. The fistula occupied the middle of the vagina, the bladder partially protruding through the opening. The inner side of the woman's thighs were ulcerated. The transverse diameter of the fistula measured five centimetres, hard bands surrounding it on both sides. The operation was performed on the 15th of May, 1867. The bands were cut through to render the edges movable. After proper paring, the fistula was closed by eleven interrupted silver wire sutures, twisted. No catheter was applied, no opium given. The woman was permitted to walk about the house, passing her urine frequently. Fourteen days' later, during which time not a drop of urine had escaped through the vagina, the sutures were removed. After four years of suffering, and having become a nuisance to the inmates of the hospital, she was cured by one operation, and thereby restored to social intercourse.

Case XXII.—Catharine Rausch, of Germany, 19 years old, married, a stout and robust woman, suffered with a contracted pelvis. She had been confined in October, 1865, the first time, labor pains lasting near five days, and was delivered of a dead child by the help of a midwife. Fourteen days later a vesico-vaginal fistula had become established. The fistula was situated $2\frac{1}{2}$ centimetres above the urethral opening, transverse diameter measuring half an inch. The operation was performed on the 18th of August. The fistula was closed by five interrupted twisted silver wire sutures, which were removed two weeks later. The catheter, the bed, and artificial constipation of the bowels, were dispensed with; still a perfect cure was obtained. No chloroform had been given, and the patient did not suffer much pain from the operation.

Case XXIII.—Catharine Glass, aged 20 years, from Germany, a servant girl, unmarried; had concealed her pregnancy, and when her true condition became known to her employer, she had already been in labor three days. She was delivered by a midwife of a dead fœtus, and had contracted a vesico-vaginal fistula, situated near the uterus. The fistula was small, still I had to take the posterior part of the vaginal portion of the uterus, after splitting it, to close the opening, which was accomplished with five silver wire sutures. Ten days after the operation the sutures were removed; the fistula was cured. All kind of after treatment had been dispensed with, the catheter being not once applied. She could hold the urine a considerably long time, and passed often as much as a pint of it. She was not laid up, but attended to the household work after her removal from the operating table.

Case XXIV.—B. McCall, from Ireland, 26 years old, had been married here, bringing to her marriage as a gift an imported vesico-vaginal fistula. Notwithstanding this deficiency, and living with a drunkard of a husband, she had given birth to three children, and their support rested upon her exclusively. During her last confinement, from want of proper attendance, the fistulous opening had become enlarged, so much so, that nearly the whole bladder was everted, hanging out of the vulva. From the excoriation of her thighs, produced by decomposed urine, she had become a perfect invalid, and felt hardly able to follow her occupation as a washerwoman. Poor and destitute, without even a bed, sleeping on a rotten mattrass, on the floor of a miserable hut, and around her the offsprings of debauchery in rags, I had seldom seen such a picture of misery. I invited her to come to my office with a clean shirt, there to be operated upon. The fistula occupied the middle of the vagina, with a transverse diameter measuring five centimetres. After the replacement of the everted bladder, which was confined in situ by sponges, the edges were pared and brought in coaptation. After the removal of the sponges (I mention this, because it once happened to a surgeon that he forgot to remove them, and had to reopen the fistula nearly healed), the fistulous borders were united by eight silver wire sutures, twisted. No chloroform was used. The woman kept the position on knees and elbows. This was the first case I ever operated upon without even the help of an assistant—a feat which can only be accomplished in applying a properly-constructed speculum, one branch of which can be fastened to the back of the patient. G. Wise, in London, has made such a speculum, with the help of which an assistant may be spared—undoubtedly a great improvement in this operation, which, through the enthusiasm of a single American surgeon, has made so great a progress all over the civilized world that, from one of the most difficult operations in surgery, it has now enabled even a tyro in the profession to accomplish it with success. The sutures were removed fourteen days after the operation, the woman all the time attending to her business. The success of the operation was complete.

Remarks.—I have mentioned above that the improvement in this operation dated from the enthusiasm of an American surgeon. It was the publication of a small pamphlet of Dr. Sims, with the high-sounding title, "Silver Sutures in Surgery the Greatest Achievement of the 19th Century." Now we know that the success of this operation is not due, does not depend upon the use of silver wire sutures, to which Sims mainly attributed his success, though I myself, like other American surgeons, am still using them—and I, from the fact that I find them to be handled in this operation far easier than sutures of any other material. Dr. Simon, in Heidelberg, Germany, and others, have proved to the satisfaction of every unprejudiced student, that with the use of silk as sutures the success is not a tittle smaller, but just as great, so that I may say, without fear of contradiction, the great improvement in the management of this disease rests with the means in our possession of gaining a better access to the parts to be operated upon—in other words, with a properly constructed speculum. The material of the sutures, whether of silk or metallic wire, is entirely indifferent (others, like Simpson, have given annealed iron wire even a preference to silver, in being cheaper, more malleable, and equally free from rusting). With a proper speculum, good paring, and coaptation of the borders of the fistula, we may be assured of success in performing this operation. We may dispense with everything else, including the catheter and the whole after treatment, without diminishing the probability of a successful issue. To accomplish the cure of a case of vesico-vaginal fistula, the after treatment has always been considered to be a very important part of it. The patient is kept in bed for many days in a very wearisome position; her bowels are confined with opium to exclude all intestinal movements; a catheter is, during the course of treatment, applied by the urethra, to keep the bladder empty, and to hinder the urine from coming in contact with the newly-united edges of the fistula; and finally, a certain diet is strenuously recommended. Of all the inimical agencies thought to stand in the way of a happy result, that most feared is the urine. To such an extent had the terror of that obnoxious fluid even affected me, that in my former operations I have thought it necessary to wash out the bladder during the first forty-eight hours after the sutures were applied, every half an hour. Was there no justification for this action? Had not even a great surgeon recommended, besides the use of the catheter by the urethra, the pucture of the bladder above the pubes, in order to keep the bladder entirely empty? Did not every surgeon of any experience in the operation speak of the permanent application of the catheter as the most important part of the after treatment? Did not Sims, the great apostle of the silver *wire* sutures, attribute a great deal of his success to his "happy invention" of a properly shaped catheter? Dr. Emmet, in the latest work on vesico-vaginal fistula, still says: "To Sims' catheter we are greatly indebted for the success in this operation, as well as for much additional comfort to the patient. It should not touch the fundus of the bladder, and be nicely balanced in the urethra, and lie close up behind the pubis. A want of attention to this point will cause a failure of the operation; yet death may occur from the perforation of the bladder. The patient must lie the greater part of the time on the back, and, if possible, preserve this position until after the sutures have been removed. The catheter must be removed several times a day for the purpose of cleaning it. It is well to have two catheters, so that one may be introduced immediately upon the removal of the other. A sufficient quantity of opium should be administered daily to keep the bowels constipated until the sutures are removed. The catheter must be continued in use for a few days longer, and from the fourteenth to the twentieth day the patient may sit up."

Dr. N. Bozeman uses the elastic catheter, which he prefers to all others, on account of the comfort of the patient and "the ease," as he says, "with which it can be kept open without reremoval, simply by running a wire through it."

In the face of such authorities and precedents, it will probably be considered a bold innovation when I recommend not only the abolition of the catheter, of whatever material or shape it may be constructed, but also (the removal of the sutures excepted) all other parts of the after treatment.

In 1866, after operating on a case of vesico-vaginal fistula, I was obliged to abandon all after treatment. I will give the case as it was published in the *New Orleans Medical Record.*

"*Case XVI.*—Vesico-vaginal fistula, transverse diameter 20 millimetres, longitudinal 5 millimetres, cured in one operation, dispensing with after treatment.

"A. D., a native of Germany, 38 years old, a primipara, was confined with child on the 17th of March, 1865. Her labor being very tedious, a physician was sent for. Failing to deliver her with the forceps, I was summoned to her assistance. When I arrived I found the patient nearly exhausted, complaining of great thirst, and suffering greatly. Her abdomen was much distended, pulse frequent and feeble. Finding that the woman had an unusually contracted pelvis, and that the fœtus was in all probability dead, I applied the cephalotribe, previously administering chloroform. A profuse hemorrhage ensued after delivery. The uterus did not contract. Ice was therefore applied to the abdomen, and ergot given internally. Patient vomited a good deal during the day; the pulse in the evening 160 and small. The application of ice was continued during the night, being also given by the mouth. The next day patient suffered much from hiccough; pulse in the evening 75 and more full. Great tenderness of the abdomen; uterus more contracted. Ice was continued till next day. Patient recovered gradually, but not without the formation of a vesico-vaginal fistula. I operated upon this fistula three months subsequently. The patient living in very humble circumstances, submitted to the operation only upon the condition that I would not confine her to bed, as she had to attend to the wants of her household. I acceded to her request. The fistula was closed by five interrupted silver wire sutures; no catheter was applied, no water injections made, she attending to her work as usual. I visited her every day. She passed her urine frequently, of which none came away but by the natural outlet. Ten days afterwards, when I removed the sutures, the fistula was obliterated and has remained so."

In an epicrisis of the cases published in the same journal I then said—"I have made a trial of doing away with both catheter and bed, with a successful result, but I am not prepared yet to advance an opinion based upon a single fact, and recommend, as some have done, the abolishment of that part of the after treatment which has been considered as of the greatest importance, though it may prove in the end to be nothing but a great bugbear. The happy result obtained in the case referred to induced me to abandon the after treatment in all subsequent cases which came into my hands.

Deprived during the war in this country of the sources which might have taught me the progress the operation of vesico-vaginal fistula had made in Germany, I was unaware of the operations performed by Prof. Simon, of Heidelberg. Without disputing the priority claims of Simon, I may still assert that I have arrived at my conclusions without being aware of the important researches of that eminent surgeon. When the abandonment of the after treatment does not diminish the favorable results of the operation, who will still advocate it and retain its use when it is the most tormenting part of the treatment to the patient as well as to the surgeon? I therefore repeat it, bring a sufficient raw surface of the edges of the fistula in close coaptation, and whatever method of operation may be used is of minor importance. A surgeon without proper skill will fail, whatever method or material he may employ; otherwise he will be successful, provided that there is not a constitutional impediment in the patient, or some obnoxious cause inimical to healing by the first intention—accidents we meet with so frequently in practice that it would seem rather strange to expect an exemption in this operation. Of 24 cases of vesico-vaginal fistula that I have operated upon, 22 cures were obtained, most unquestionably a splendid record, with which few other operations of such importance may be compared.

ARTICLE IV. *Bin Iodide of Mercury in Secondary Syphilis.* By M. SCHUPPERT, M.D.

The treatment of secondary syphilis which of all others I most highly approve and prefer, consists in injecting subcutaneously a solution of the double salt of bin iodide of mercury and iodide of soda. Amongst the different forms of syphilis in which this remedy has given me the most satisfactory results belong the syphilitic affections of the skin, roseola, papulous syphiloids, affections of the mucous membrane of the pharynx and of the larynx, whilst in the tuberculous forms I found it of less efficacy. The use of it in the initial period of syphilis is fruitless. About the value of subcutaneous injections of mercurial preparations much controversy exists, and no final judgment has been rendered yet. Every contribution affecting this "vexed question" may therefore be welcome, and time with increasing experience will determine it. Whilst some assert that this treatment does not interfere in the least with the development of syphilis consonant with its nature, and therefore would be void of all utility, there are others who will grant it a place in our therapeutics only conditionally, yet others admit it to be a valuable remedy and speak of it in the highest terms. Since Lewin, all of the practitioners who have given these subcutaneous injections a trial have made use of the bichloride of mercury, with the exception of K. R. Pagvalin, Anné Martin, and Gaston, of Brazil, who tried the bin iodide of mercury, the latter recommending its use as an "efficient and safe, an active but neglected remedy." Pagvalin took 0 36 grm. of the bin iodide and 3.75 grms. of iodide of potassium dissolved in 30 grms. water. Half a gramme of this solution was used in one injection. But Pagvalin experienced such high inflammatory symptoms of the skin that he divided that dose; he applied two injections daily during several weeks. Others have given such injections only every second or third day. About the place where to administer the injections a difference of opinion also exists. Of the action of the remedy Pagvalin says: "In the beginning it seems rapid, then comes a standstill, after which the improvement goes on again but slowly." In regard to the pain following the use of these injections, the opinion is prevalent that it increases with the quantity of the injected fluid The less fluid the less pain. The time in which a cure is to be effected is spoken of differently of from six weeks to two months (Taylor). Pagvalin has 46 days on an average, during which time he will have used 0.27 grm. The advantage of this treatment some will find in the shortening of the time in which a cure is established; others in the smaller quantity of mercury used. Pagvalin considers this treatment as not superior to others. As mentioned above, I have made use of the bin iodide of mercury. I weighed 0.2 grm. of it, which were dissolved in 100 minims of water containing a small quantity of iodide of sodium. Ten drops of this solution corresponds to 0.02 grm., or near ⅓ grain of the mercurial salt. This was the dose which I generally injected. The injections were made invariably in the back. If sufficient care is taken to stick the needle of a Pravas syringe deep enough into the muscles, avoiding a too much oblique direction by which the point of the needle might still become imbedded in the skin, an abscess will seldom follow. (The same holds good with subcutaneous injections of other remedies.) Should the pain which often follows the injection be too acute, an additional injection of 0.01 grm., equal to 1.6 grains of sulphate of morphia, will be found beneficial.

I have so treated, since 1858, 22 cases, of which 18 were males and 4 females, from the ages of 20 to 72 years. The injections were made one every second or third day. The smallest number of injections in one individual were 4, the largest number 12, before a cure was effected; that is to say, until the eruptions on the skin and ulceration in the fauces had disappeared, and this has reference to 18 cases. Four left before the end of the treatment. In four cases salivation set in, but was easily checked by the internal use of chlorate of potassium, and washing the gums with diluted muriatic acid, when after a few days the treatment was continued, diminishing the quantity of the solution. Aime Martin, who applied the same salt in the same quantity as I (Gazette de Hepdom., 112, 1869), has had equally good results—6 cases of secondary syphilis of from 3 to 6 months' standing were cured by 6 injections. Two cases in which syphilis did return were cured with 5, and 9 injections. If I compare these results with those obtained by others—Lewin, for instance, who used the bichloride of mercury, dissolving $\frac{1}{8}$ grain of it in 20 minims water, and using often 60–70 injections before a cure was accomplished—it is obvious that ours is much to be preferred. Moreover, never did I meet with the formation of those infiltrations, inflammatory processes, so frequently observed in the use of bichloride of mercury. The great solubility of the salt of the bin iodide renders it also more desirable. Compared finally with the method of inunction, smearing the body with the mercurial ointment, and confining the patient to his room, I think it still much more eligible. I have never restricted my patients to a rigid diet, nor was any attention paid to the intestinal tract, which may be necessitated in giving the mercurial salts by the mouth.

When, therefore, Professor Sigmund, in Vienna, says of our method, "to my knowledge there is no practitioner in possession of facts which entitle him to render a proper judgment of the value of that method," he may improve the stock of his knowledge in reading these pages.

ARTICLE V. *Atresia Vaginæ.* By M. SCHUPPERT, M.D. V

The words *atresia*, *imperforation*, *occlusion*, and *obliteration*, are often promiscuously used to signify one and the same thing. I am using atresia and imperforation as implying a congenital origin, occlusion and obliteration signifying the previous existence of an aperture or canal. Atresia and occlusion having reference to the aperture only, imperforation and obliteration, on the other hand, to the canal as such. The interesting case of atresia I am about to describe was therefore of a congenital origin, comprising the aperture of the vagina.

A. S., from Algiers, the Sixth District of New Orleans, was 16 years of age, and had been married six weeks when she consulted me, in January, 1866. An examination revealed such a blotting out of the hymen that not even the smallest indication of it was visible. About $1\frac{1}{2}$ centimetres below the orifice of the urethra a small cicatrix was found from a former cut. The woman made the following statement, written down at the time of examination: "Two years ago I was living with my parents down Customhouse street. I observed my belly to get larger and larger. My father called in a 'midwife,' and she said that I was pregnant and would soon be confined. My father, believing in my chastity, then took me to a 'doctor,' but he was of the same opinion as the midwife. The rumor soon spread that I was in the family way, all the protestations on my part to the contrary notwithstanding. I had so much annoyance from our neighbors that my parents moved away from the place. My father now went with me to Dr. H., who, after an examination, pushed a knife into me, and a large quantity of dark looking blood came away. The swelling of the belly subsided, and soon after I got my menses. I have discharged blood every month regularly through the opening till lately, when the opening became closed. Meanwhile my parents had removed from the city of Algiers. I had been married about six weeks when, at the request of my husband, I called at 'Doctor' M., and he said that I had ulcers on the womb, and he brought instruments with him for cauterization, but it was delayed till next day, and during the interval I was advised to consult you."

Assisted by Dr. Kattmann, who happened to be at my office, I administered chloroform to the woman, and cut out below and at a sufficient distance from the urethral opening an oval piece of the integuments representing the hymen, of which Shakespeare says "the longer kept the less worth." Though I had not, according to the custom of the people of East Soudan, as the Austrian Consul there tells us, the model to work by, I thought the opening of sufficient size to the performance of its natural functions. The piece cut out measured three millimetres in thickness, and was so blended with the surrounding parts that it hardly could be considered a hypertrophied hymen. In June, 1867, I accidentally met the woman with a baby on her arms, and she told me that she had experienced no difficulties during parturition.

This case bears an analogy in some respects to one related by Smellie, where an imperforated hymen was taken for the bag of membranes, and a speedy delivery announced. It also explains the paradox, that a married woman may become a virgin, by the removal of the palladium virginitatis.

ARTICLE VI. *Case of False Aneurism of the Femoral Artery.* By H. D. SCHMIDT, M.D.

MR. EDITOR:

The following is an account of a remarkable case of false aneurism of the femoral artery, which came under the observation of Dr. H. D. Schmidt, of this city, a number of years ago. Having been engaged for some years back in histological researches, and not being able to devote the time he would wish to the preparation for the press of his numerous pathological investigations, Dr. Schmidt has placed his notes in our hands with a request that we prepare the same for publication in your Journal.—B. S.

Peter Nelson, aged 50 years, born in Copenhagen, Denmark; a tall, strong, and well built man, by profession a sailor; had resided about two years in New Orleans, where he had last been employed as watchman on the steamer Lizzie Davis, entered the hospital in the month of July, 1855, and died September 23d.

About three months previous to his entering the hospital he felt a small tumor on the inner side of the right thigh, in the vicinity of the femoral artery, in the region known as Scarpa's triangle. This tumor gradually enlarged, descending downwards along the thigh and upwards beneath Poupart's ligament into the right iliac fossa. When the tumor had become so large as to interfere with locomotion, he came to the Charity Hospital. At the time of his admission his general health was apparently good. According to his own statement he had been a hard drinker, and being an old sailor, had been much exposed during the course of his life, and, like the majority of this class of men, had not been used to a very regular mode of living.

The tumor at this time had attained a considerable size, descending downwards on the inner side of the thigh, and upwards into the pelvis. The pulsation of the artery, accompanied by the peculiar aneurismal thrill, could be distinctly felt. When the abdominal muscles were relaxed by flexing the thigh as far as the tumor would allow, the latter could be estimated to extend as far upward as the bifurcation of the common iliac artery. Pressure through the abdominal muscles upon the upper part of the tumor, in the direction of the artery, arrested the pulsation in that portion below Poupart's ligament. This arrest of pulsation, however, was found to have been due to pressure upon the external iliac artery, which lay in front and against the tumor. Thus, as the point of communication between the artery and the aneurismal sac was below that upon which the pressure was made, the pulsation had necessarily to cease.

From the time the patient entered the hospital to that of his death the tumor gradually increased in size, and œdema made its appearance, especially in the lower extremities, but first in the limb affected, owing to the femoral veins being tightly compressed between the tumor and Poupart's ligament. Although his organic functions seemed to be in a relatively good condition, his strength gradually failed, and some days before his death the previous œdema of the legs had run into a general anasarca.

Autopsy.—The entire body was found in a high state of anasarca. All the tissues were, so to say, inundated with serum; from the areolar tissues especially, when cut into, it escaped in streams. The abdominal cavity, on the other hand, was free from dropsical effusion, its walls being rather sunken in, except in the right iliac region, where the aneurism within kept them distended. The aneurism was a false one, its walls originally formed by the distended *sheath* of the femoral vessels, also involved, "as the accumulation of blood within the tumor increased," the neighboring muscular fasciæ, with their respective muscles of the thigh, and especially the fascia transversalis of the pelvis. The original cause of the aneurism was atheromatous degeneration of the femoral artery, extending throughout the right external and common iliac arteries, the whole length of the aorta into the left ventricle. All of these parts seemed to be affected by the disease in an equal degree. Throughout the whole tract the bone-like atheromatous deposits were found, completely disorganizing the internal and middle coats of the vessels just mentioned. In the femoral artery, about ½ inch below Poupart's ligament, the disorganization had extended through the outer coat of the vessel, and produced the orifice from which the aneurism took its origin. This orifice was oval in form, ½ inch in breadth, and about ⅞ of an inch long. The aneurismal sac formed an ovoid, about 13 inches long, by 6½ inches in its lateral diameter. There was a constriction near the middle of the sac, where it passed under Poupart's ligament.

The walls were formed, as already mentioned above, by the *sheath* of the femoral vessels, the surrounding fasciæ and muscles, containing coagulated layers of fibrin within, which had been deposited and coagulated in concentric lamellæ of different thicknesses. The walls of the sac in that portion where the tumor rested against the bones of the pelvis were considerably thinner than in the other parts. Bands of coagulated fibrin stretching across the sac in different directions were also observed. The soft contents of the sac consisted of coagulated blood, containing masses of pure fibrin, together with a *flattened mass or plate of atheromatous deposit* about the size of a patella. The femoral artery and vein were closely adherent to the sac, as far as they were in contact with it; they also adhered intimately to each other. The upper portion of the artery had undergone disorganization by the atheromatous deposits, but its lower portion below the sac had, as yet, not been invaded by the disease. The left iliac arteries were not diseased, neither were those arteries which spring from the arch of the aorta. The lining membrane of the left ventricle, with the mitral valves, and the semilunar valves of the aorta, were completely disorganized, being covered with large plates of atheromatous deposits. Traces of the disease were even found in the left auricle. The lesions in these organs were most likely the immediate cause of death. It may be well to add that the atheromatous deposits in the aorta were so abundant that in many places rings were almost completely formed in the vessel, preventing its regular contraction and dilatation, thus interfering with the general circulation.

I believe that at present it is generally admitted, that atheromatous degeneration of the arteries and endocardium may be looked upon as the result of a chronic inflammation of the latter membrane and of the inner coat of the arteries. Among the predisposing causes of this morbid process, advanced age and the free use of alcoholic stimulants may be considered as the most important.

From the above description it will be seen that the aneurism was caused by atheromatous degeneration of the intima, extending from the great centre of circulation to the point of rupture of the middle and outer coats of the femoral artery, the morbid action of the disease being made plainly manifest by the calcareous deposits found at numerous points along the course of the vessels previously mentioned.

The adventitia is said, as a rule, to guarantee the sac against rupture, but in this instance the sac was not formed by this layer of the artery, the aneurism being a false one, i. e., the walls of the vessel formed no part of the sac, although the tumor was enclosed in a well-defined cyst, consisting of the *sheath* of the femoral vessels, together with the surrounding muscles and their fasciæ, as well as of the fascia transversalis of the pelvis.

That the tumor in its early origin was a true aneurism I have but little doubt. Such being the case, the middle as well as the outer coat of the vessel must have been invaded by the disease, especially at this point, where the con-tant pressure of the blood easily caused the diseased structures to assume a sacculated form; but owing to the inroads made by the morbid process upon the adventitia, it had been deprived of its resistive properties, and gradually gave way, until at last a small opening was made, allowing the blood to escape slowly between the artery and the *sheath*. The opening must, at first, necessarily have been small, otherwise the sheath of the vessel would not have been able to withstand the violence ot the shock, but would readily have yielded to the sudden strain of the blood escaping through so large an orifice as the one found on dissection. Such an occurrence would have been followed by a rapid and profuse extravasation of blood, which was not the case. The gradually increasing pressure of the blood upon the connective tissue forming the sheath, as well as that of the neighboring fasciæ, had stimulated it to a chronic inflammatory or reactive over-growth, the aneurism becoming invested on all sides by a close web of tough connective tissue.

To account for the presence of the large plate of atheromatous deposit found in the sack of the aneurism, we may conclude that it was of much smaller dimensions at the time of its passage through the opening in the walls of the artery; being able to proceed no farther it became lodged in the sack, serving as a nucleus around which calcareous ingredients from the blood were deposited.

The drawing represents a dissection of the right thigh, and a portion of the abdominal wall, showing the extent of the aneurism. The skin and superficial fascia are removed from the right side of the abdomen; the tumor occupying the right iliac fossa is seen bulging through the abdominal muscles. Below Poupart's ligament the tumor is laid bare with its neighboring structures, the femoral vessels and some of the muscles of the thigh.

ARTICLE VII. *Reply to the Inquiries of Professor Joseph Jones, of New Orleans, Relating to the Treatment of Yellow Fever.* By THOMAS LAYTON, M.D., New Orleans.

[Notes taken during the Yellow Fever epidemic of 1873.]

SUMMARY OF YELLOW FEVER CASES ATTENDED IN 1873.

Total number of cases	29 *
Deaths	13 *
Recoveries (including two cases of black vomit)	16
Total number of cases in which black vomit occurred	12

During the month of July and the first half of August, I attended a number of cases of fever, all evidently malarial, and yielding readily to quinine, but followed by great debility.

On the 16th of August I was called to see a little boy, James Crawford, aged 8 years, residing on Rousseau street, between Soraparu and First. I had no difficulty in speedily recognizing that in his case the type of fever was entirely different from that with which I had been dealing for several weeks past. On inquiry, I learned that the child had arrived from Ireland only three months before; that a brother physician was attending a case of yellow fever in the other half of the same house, and that there was another case of yellow fever in the immediate neighborhood. Adding to these data the presence of albumen in the urine, I concluded, on reasonable grounds, that James Crawford had yellow fever. Later, the case appeared complicated, for the reasons given in the observation, but considering, that in rapid succession, three other undoubted cases of yellow fever were developed in the Crawford family, I think I may set down the case of James as being the first instance of yellow fever in my practice this season.

My observations are in many respects incomplete, both from the fact of my having been much pressed for time, and from my having mislaid memoranda of the pulse and temperature of several cases, so that I am compelled to fall back upon a few notes I find in my journal.

Admitting that yellow fever is a "self-limited disease," I have

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* The figures indicating the total number of cases and deaths do not include the fœtus in either of the two cases in both or which the mother and child died.

endeavored this year to make use of a rational and expectant plan of treatment.

Usually, when not anticipated by the friends of the patient, I have followed the routine course of freely evacuating the bowels early in the disease, using oil for this purpose when the condition of the stomach would permit its administration. I may say here, that in several cases this summer I have met with great irritability on the part of the stomach from the very beginning of the attack, without noticing later any marked relation between such irritability and the appearance of black vomit.

In former years I had attempted to lessen the amount of fever by the use of heart sedatives, digitalis and veratrum viride. I do not remember to have ever derived any marked benefit from this course, and in view of the great debility of the heart in yellow fever after the early stages, I have become afraid of these agents.

Whilst attempting to promote the free action of the skin and kidneys, I have not used any diuretics, except such beverages as were most acceptable to the patient, and such as did not appear repugnant to the stomach.

With regard to the pulse, I have had renewed occasion to verify the statement made by Dr. Faget, that the pulse is highest at the outset. I have found the rule to be its *decrease*, after the first observation; this decrease not being always free from oscillations of ascension; still, upon the whole, I believe the rule to hold good, the pulse from 120 (average) falling to about 40, as a minimum. I have met with some high pulse rates at the beginning—136 in the adult, and 156 in the child. In the adult I have learned to look with alarm upon a rate of pulsation exceeding 120 at the start. In the child, a very rapid pulse at this stage has not seemed to be as significant.

In several cases black vomit occurred with the pulse at about 90. When the fatal issue drew near the pulse increased, so that it could hardly be counted towards the end. I have been governed by the condition of the pulse in administering stimulants, beginning their use when the pulse would fall below 90, relying upon alcohol, broth, etc., according to the inclination of the patient, using these articles simultaneously when it became necessary to stimulate per rectum. I have used champagne and seltzer water freely, and with benefit, finding that, in numerous instances, champagne agrees better with the stomach than brandy, no doubt on account of the contained carbonic acid. I have avoided general blood-letting, and have used cupping moderately. I have been satisfied with cupping, only in one case, in which a few ounces of blood taken from the mastoid region appeared to give great relief. Upon the whole, however, I have not found the advantages from cupping to be such as to compensate for the alarm and discomfort occasioned.

With regard to quinine, I have used it in a few cases in which the presence of a malarial element might have been supposed. Finding in these cases that it did no good, I ceased giving it, and I have not administered it in cases where the diagnosis of yellow fever was undoubted.

My attention has always been directed, from the very beginning, to the condition of the stomach. As a precautionary measure, in nearly every case I gave a simple alkaline mixture, which I found to be generally well tolerated.

Blistering over the epigastrium was used freely; sometimes with apparent advantage, and again, unsuccessfully. In two instances I regretted the use of the blister, on account of vesical trouble.

I have frequently given morphine in small doses to secure sleep, even after the first stage. Whilst being often successful in its administration, I do not remember having had cause to regret its exhibition, even where rest was not obtained. When given carefully, and in small doses, I cannot say that I noticed any bad effects on the kidney to result from the drug.

From my observations, black vomit and urinary troubles are symptoms of the gravest import. In twenty-nine cases of yellow fever observed this summer, black vomit occurred in twelve. Two patients (both children) who vomited black, recovered, so that, of the thirteen deaths from yellow fever, black vomit was present in eleven of the subjects. Judging, therefore, from my own experience, whilst I cannot say that black vomit is necessarily fatal, still I am compelled to look upon it as a very unfavorable symptom. Upon the whole, however, I think the symptoms dependent upon the altered condition of the kidneys are to be considered as even more unfavorable than black vomit. In all the cases which terminated fatally the urine was, if not entirely suppressed, at least quite notably lessened in quantity, and in those cases in which I had reason for a time to be alarmed at the condition of the patient, the alarm was always coincident with diminution in the quantity of the urine, lessening, however, as soon as the excretion became greater.

I have ceased attaching much importance to the presence or absence of albumen in the urine. In some of my worst cases there could not be detected the slightest trace of albumen, whilst in others which recovered the use of tests determined more or less abundant precipitation. But I did not lose a case in which the urinary excretion appeared unaltered.

In one instance of obstinate hemorrhage from the gums, I used the liquor ferri perchloride, ℳ xxx in a ℥iv mixture in the 24 hours. I was encouraged to pursue this course by the favorable condition of the stomach, and the hemorrhage was readily controlled.

With regard to the duration of the fever, I noticed some difference this summer as compared with other seasons. I found that in nearly every case, the paroxysm of fever lasted more than four and frequently over five complete days.

Concerning the question of disinfection, I must say that from what I saw of the fever this season, and its malignancy in many cases, I am surprised that the extension of the disease was not more rapid and general throughout the city. Whether its limitation be due or not to the use of disinfectants, I should still like to consider as an open question. Whilst certain facts would appear to argue in favor of disinfection, on the other hand where this process may have seemed less successful, it is well to remember that the difficulties in the way of disinfection on a large scale are very great indeed, and that in particular instances circumstances may occur to completely defeat the properties of disinfecting agents.

Before concluding this review of the cases of yellow fever which fell under my observation this summer, I must call attention to the apparent good results of disinfection as employed at the St. Joseph's Asylum (see observation). If the non-success of disinfection in the Redemptorist Convent (see observation) be held up as an offset to any favorable view which may have been deduced from the history given in connection with the St. Joseph's Asylum, it will be well to remember that in the first named establishment, although the unacclimated members of the community had removed their sleeping quarters to another house, still they continued using the refectory and the lower hall of the building, in which the yellow fever cases were under treatment, and that disinfection was used principally in and around the sick room, *after* the issue of each case, and that, although carried out to some extent by the sanitary police, it was neither thorough nor *general* in the infected building, portions of which continued to be used all through the epidemic, by persons liable to contract yellow fever. A fact of this kind cannot therefore, with any fairness, be used as an argument against disinfection.

Before giving the history of the observations on which the foregoing review is based, it may be well to tabulate the cases, so as to ascertain the relative proportion of sex and age to the total number of cases, as well as to the number of recoveries and deaths.

I find:

Number of Cases.				Recoveries.				Deaths.			
Males, Adult.	Males, Children.	Females, Adult.	Females, Children.	Males, Adult.	Males, Children.	Females, Adult.	Females, Children.	Males, Adults.	Males, Children.	Females, Adult.	Females, Children.
12	9	5	3	7	7	1	1	5	4	2	2
29				16				13			

Upon closer investigation, the above table will be found to give the following results:

A—Male Cases.	Deaths,	Percentage.	Recoveries,	Percentage.
21	7	33.33	14	66.66

A still closer analysis shows:

(a) Adult Male Cases.	Deaths,	Percentage.	Recoveries,	Percentage.
12	5	41.66	7	58.31

and

(b) Male Children Cases.	Deaths,	Percentage.	Recoveries,	Percentage.
9	2	22.22	7	77.77

whilst

B—Female Cases.	Deaths,	Percentage.	Recoveries,	Percentage.
8	6	75	2	25

A still closer analysis shows:

(a) Adult Female Cases.	Deaths,	Percentage.	Recoveries,	Percentage.
5	4	80	1	20

(b) Female Children Cases.	Deaths,	Percentage,	Recoveries,	Percentage.
3	2	66 66-100	1	33 33-100

In other words, in my experience this summer, more males than females have been affected with yellow fever, but the percentage of death has been greater for females than for males, and the percentage of recoveries has been greater in children than in adults.

I am of course fully aware that the foregoing analysis may be objected to, on the ground that equal numbers have not been compared in each instance, but in resorting to the above process of decomposing figures, I have been guided by the desire of exposing the relative results of my practice during the past season.

Observations.

Crawford Family.—Saw the *first case* of yellow fever in the Crawford family (and the first case of the season), on the 16th of August. The other cases in this family occurred in rapid succession.

1. *James Crawford*, 8 years, táken ill August 15th; saw him for the first time on the evening of August 16th. (All the Crawford children had arrived from Ireland only three months previously.) The Crawford family resided on Rousseau street, between Soraparu and First.

Date.	Day.	Pulse.		Temperature—Centigrade.	
		M.	E.	M.	E.
Aug't.					
17	3	112	124	....	40.2
18	4	108	104	39.2	38.6
19	5	104	104	38 6	39.0
20	6	108	116	39.2	40.2
21	7	108	100	39.0	39.8
22	8	108	120	39.8	40.2
23	9	108	128	39.4	40.4
24	10	120	136		
25	11	132	128		
26	12	124	128		
27	13	120	116		
28	14	110	112		
29	15	96	88		
30	16	84	76		
31	17	66	56		
Sept'r.					
1	18	48	40		

In this case, as soon as the remission and exacerbation began to be distinctly marked (say from about the 7th day), I began using quinine in xx gr. doses for 24 hours. The remission and exacerbation evidently were not affected for several days by the drug, and these variations continued for some time after the 23d of August, when, owing to an accident, I was compelled to suspend the use of the thermometer. I gave quinine from the morning of the 7th day to the morning of the 12th day. The condition of the stomach remained good nearly all the time, and I gave beef tea and milk several times each day. In this case, although the symptoms and appearance of the patient pointed strongly to yellow fever, and although the urine contained albumen, still the indications afforded by the pulse and thermometer caused hesitation. Quinine, however, although freely used, did not bring about any solution to my doubts, and I finally suspended its use. The fever really seemed to decrease only after the 12th day, and the minimum of pulsation (40) was reached only at the close of the 18th day. For several days, during the height of the disease, I was considerably annoyed by a free discharge of blood from the gums, which was at last checked by the internal use of the perchloride of iron. Convalescence was tedious, owing to the great debility of the child, who suffered from several carbuncles, attended by sloughing.

2d. *John Crawford*, aged 10 years; mild case. Taken ill on 22d of August. That evening pulse 112; pulse regular—it had fallen to 60 on the night of the 7th day. Recovered.

3d. (Girl) *Crawford*, about 6 years old; black vomit; died.

4th. *Mrs. Crawford*, aged about 35. Nearly five months pregnant. The last time I saw her was about 8 p. m., nearly ten hours before her death. There were then neither uterine contractions nor any vaginal discharge, but she had been vomiting black for 30 hours, or thereabouts. The next morning on being informed of her death, which had taken place five hours previously, I was told that the entire contents of the womb had been retained, and that there had been no hemorrhage per vaginam. It is perhaps well to mention, that the circumstances and surroundings of this family were most unfortunate and unsatisfactory.

5th. *Mrs. Leech*, about 25 years. Taken ill August 31st; died September 4th. Five months pregnant; aborted on the 3d September; no unusual amount of hemorrhage from womb. Vomited black 24 hours before death. This was her first summer in the city. Residence on Louisiana Avenue, between Annunciation and Chippewa streets.

Fitzpatrick Family, Robin street, between Camp and Magazine.

6th. *Lawrence Fitzpatrick*, 21 years. Taken ill 10th of September; died September 18th. Urine albuminous. Came to the city from a point opposite Vicksburg; remained in town two days; then went to Grand Isle, where he spent ten days. Returned to New Orleans, and eight days later was taken with yellow fever. He resided in a part of the city at that time totally free from yellow fever (to the best of my knowledge), and the young man had been *once only* to a house on St. Andrew street, near Magazine; i. e., he had paid only one visit to the Fourth District, in portions of which there were at that time cases of the disease.

7th. *Joseph Fitzpatrick*, 6 years; taken ill September 21st; had spent more than one summer in the city. Recovered.

September	21st,	3 p. m.,	pulse	156.
"	"	9 p. m.,	"	148.
"	22d,	10 a. m.,	"	128.
"	"	10 p. m.,	"	120.
"	23d,	7 a. m.,	"	108.
"	"	7 p. m.,	"	104.

8th. *Old man Fitzpatrick*, 78 years. Taken ill October 12th. Had also spent more than one summer in the city. Recovered.

Cases of Yellow Fever in the Redemptorist Convent.

9th. *Father S.* Black vomit; died.

10th. *Brother C.* Recovered.

11th. *Brother C.* Black vomit; died.

12th. Father *L.* Recovered.

13th. Father *C.* Recovered.

Father Schneider was taken ill on September 20th, at about 2 p. m.; died on the 23d of September, at 9 a. m.; black vomit

September	20th,	3 p. m.,	pulse	120;	temperature	———
"	"	night,	"	112;	"	———
"	21st,	morning,	"	108;	"	———
"	"	midday,	"	96;	"	———
"	"	night,	"	92;	"	°104.6
"	21st–22d,	midnight,	"	92;	"	103.6
"	22d,	8 a. m.,	"	96;	"	———
"	"	midday,	"	112;	"	———
"	"	night,	"	120;	"	———
"	23d,	morning; pulse could not be counted.				

Father S. had spent two years in St. Thomas. He came to New Orleans in March, 1873. Immediately after his death, the bed, bedding, and his clothes were burned. The room and house were disinfected a few hours later by the Board of Health. He was buried in the afternoon, on the day of his death. That same evening *Brother C.* was taken with the fever, and 48 hours later *Brother Cupertino* was stricken down; pulse 130 at the beginning, gradually coming down to 72, which figure it reached on the 3d of October. On the morning of October 5th (Sunday), patient doing well; pulse 80. That day he took advantage of being left alone for a few minutes, to get out of bed, dress himself, and go down stairs twice. That evening I was again called to see him—pulse then 130. The pulse remained high, but by Thursday had fallen to 96. During that day, however, he grew worse. Black vomit appeared Friday night, the pulse ascended, and the last time I could count it, on Sunday (October 12th) morning, it beat 148 times; he died that evening. His bedding and clothes were immediately burned. Two or three days after the beginning of Brother Cupertino's attack, on or about the 28th or 29th of September, Father L. was taken with a light attack of the fever. Shortly after the 25th of September, the remaining Fathers and brothers (unacclimated) removed to another house, separated from the main building by a large vacant lot. The cases of yellow fever had all been confined to the third floor of that main building, in which an imperfect attempt at disinfection was constantly kept up.

The Fathers who had removed to the other house continued, however, using the refectory, situated on the ground floor of the main building, and passing through the hall on the same ground floor. Some time after the removal of the Fathers one of their number, Father C., was taken with the fever. He was at once removed to the main building. He recovered, and his was the last case of yellow fever in the convent. I neglected to mention above that the urine in Father S.'s case was not albuminous. Towards the close, in the case of Brother Cupertino, the urine became albuminous. In these two patients the urine was notably lessened in quantity, much more so than was the case with the three members of the community who recovered.

14th. *Laurence Mackie*, 4 years; Algiers. Taken ill Sunday night, 21st September. Nature of disease not suspected, and no physician called until 3 p. m. on September 23d, when the child began to throw up black vomit. Dr. Reilly was then summoned, and later in the evening and the next morning I saw the child in consultation. He died at about 2 p. m., September 24th. Child born and raised in Algiers.

15th. *James Croll*, about 30 years; 514 Fulton street, near Second, native of Scotland. This summer is the second spent in New Orleans. Taken ill September 25th. Patient young and plethoric. The head symptoms were so distressing at the outset that I caused a few ounces of blood to be taken from the mastoid region, by cupping, which was followed by relief. Recovered.

16th. *Mrs. Bennet*, aged 25 years; corner of Chippewa and St. Andrew streets. Paid first visit on September 30th. Stomach very irritable from the start: urine very scant, and heavily loaded with albumen. Black vomit. Symptoms of uræmic poisoning appeared early. Died Oct. 7th.

17th. *Auguste* (family name unknown), 3 years old. Brought into the Saint Joseph Asylum, corner of Laurel and Josephine streets, with his two little brothers, about the beginning of October. The children came from Fulton street, I believe, or at all events, from about the centre of the yellow fever focus. Up to the time of their admission there had been no yellow fever in the asylum, notwithstanding the presence of about 250 inmates, many of whom were unacclimated. Eight days after the entrance of these boys one of them took sick with yellow fever. I immediately had him isolated and placed in an outbuilding, as far removed as possible from the main edifice. The Board of Health was notified and a fresh supply of carbolic acid used. (The acid had already been freely used, in consequence of several cases which had occurred in the immediate neighborhood of the asylum.) After the child had been sick a little over two days, his mother insisted on removing him to her own house, and I afterwards learned that the case terminated fatally. Shortly after the child's removal the Sanitary Police disinfected the outbuilding which had been occupied by the child, and no other cases of yellow fever occurred in the asylum.

18th. *Artemise Cantelli*, 6 years, born in New Orleans: Philip street, between Fulton and Soraparu. Black vomit. Died. The child had had an attack of dengue, from which she had entirely recovered. I was called in again on October 1st to attend her for yellow fever, of which she died on the night of October 4th–5th.

19th. *Allen Conliff*, 5 years; 269 Chippewa street, born in the city. Sick 36 hours before I was summoned on the evening of October 5th. Black vomit set in during the night of the 6th–7th October. Urine never notably lessened in quantity, although on two occasions it precipitated a moderate amount of albumen. The pulse at my first visit was 108. It gradually declined, and I counted 92 beats, about an hour after the child first vomited black. He vomited black three times, and early on the morning of October 8th had a dark passage. The symptoms then disappeared, and under appropriate treatment he rapidly became con valescent. I paid my last visit on October 15th.

20th. *Aloysius Cahiel*, 4 years, born in New Orleans. Taken ill October 5th. Pulse counted about an hour and a half after the invasion of the symptoms, beat 160 times. Descended regularly to 96, at which figure remained stationary for several days. Recovered. Philip street No. 83.

21st. *Mrs. E. M. Birmingham*, about 20 years; 46 Josephine street, native of the city, but had spent the last few years in Georgia. Recovered.

22d. *Louis Born*, about 12 years, 175 Josephine street, born in the city. Taken ill 9th of October. Recovered.

23d. *Pat. Ryan*, about 20 years; Religious street, near Celeste. Paid first visit on October 9th. Had then been sick for 36 hours. Mild attack. Recovered.

24th. (Girl) *Evans*, 4 years; 18 Josephine street; born in the city. Saw her for the first time on October 10th. Had then been sick three days, and had black vomit. Recovered.

25th. ——*Boyd*, boy of 11 years; 427 Carondelet street. Paid first visit October 14th, had then been sick three days. Mild attack. Recovered.

26th. *Charles Cain*, about 23 years; second summer in the city; Livaudais street. Paid first visit October 17th. Urine slightly albuminous. Pulse characteristic. Severe attack. Recovered.

27th. *Margaret Cain*, 20 years, sister of the above; sick in same room. Paid first visit October 17th. Could not obtain specimen of urine. Black vomit. Died October 21st.

28th. *David Cleary*, 37 years; corner of Josephine and Water streets. After being away all summer, he returned to the city on the 9th October. Began drinking soon after return, and continued doing so, with but little intermission, until Nov. 4th, when he was compelled to go to bed. I was not called in until November 7th, when I found him vomiting black. Other symptoms well marked. Urine scant, albuminous. Pulse 92. The pulse gradually ascended. The last time I counted it was on the 9th of October, at noon. It then beat 120 times. Patient delirious. Died that evening.

29th. *Henry Leonard*, (should have been numbered 6th, in regular order of dates,) 21 years; native and constant resident of New Orleans. Taken ill September 10th. Urine not albuminous. Died September 15th. Fulton street, near Adele.

First case of yellow fever seen, this year, on August 16th.

Last visit to yellow fever patient, this year, on October 9th.

To the foregoing list of cases of yellow fever observed during the summer of 1873, it may be interesting to add the following observations made during the epidemic of 1870. I have to repeat the expression of my regret, that my observations this summer are not more complete. The reasons for their brevity I have stated above.

30th. *Luc Maxence*, 292 Chartres street. Taken with fever on September 6th, 1870.

Paid first visit at night on September 7th, 1870. No trace of albumen in urine, which was freely excreted, during the whole attack. Treatment rational and expectant. Recovered.

DATE.	M.			E.		
	P.	R.	T.	P.	R.	T.
September.						
8	104	20	°40.0	96	24	°40.8
9	88	20	40.6	88	20	41.0
10	80	32	40.2	76	24	40.2
11	64	24	39.4	60	20	39.6
12	60	20	38.6	64	20	38.8
13	60	20	30.0	56	20	37.8
14	52	20	37.6	52	20	37.6
15	52	20	37.6	48	20	37.6
16	42	20	37.8	56	20	38.0
17	64	20	38.0	64	24	38.0
18	52	20	37.8	64	20	37.6
19	56	20	37.8	48	24	38.0
20	64	24	38.0	68	20	38.2

31st. *Mr. I. Bergman*, 22 years, 153 Old Levee street, recently arrived from Kentucky. Levee laborer. Taken ill on September 27th, 1870. Paid first visit on the morning of September 28th. Jaundice and suspicious character of vomited matter on September 29th; suppression of urine on the 30th of September. Urine previously examined and found to contain albumen on the 29th. Great quantities of black vomit on the 30th of September and 1st of October. Died in convulsions at 3 p. m., October 1st.

DATE.	M.		E.	
	P.	T.	P.	T.
September.				
28	116	....	116	°41.2
29	96	°40.4	100	41.2
30	92	40.4	92	40.0
October.				
1	100	38.8		

32d. *M. Schonstreak*, 19 years, 299 Chartres street. Second summer in the city. Felt unwell on September 27th, 1870; fever on the 28th. I was, however, not called in until the 29th of September.

No diminution in quantity of urine; no albumen precipitated. Recovered.

DATE.	M.		E.	
	P.	T.	P.	T. (*cent.*)
September.				
29	72	38.6	72	38.6
30	68	38.8	68	40.0
October.				
1	68	38.2	68	38.4
2	72	38.4	68	38.6
3	60	37.6	64	37.8
4	54	37.4	54	38.0
5	50	37.6	54	37.8
6	50	37.0	54	37.4
7	60	37.4	..	....

ARTICLE VIII. *On the Treatment of Procidentia Uteri.* By F. WILHOFT, M.D., New Orleans.

When up to the present day, our gynæcological literature approves of elybrorrhaphy and episiorraphy (as a last resort, of course) for the cure of procidentia uteri, and when during my practice, embracing thirty odd cases, I have not met with a single case of this affliction, whether complicated with cystocele or rectocele or not, in which I have not succeeded in replacing and supporting the prolapsed organs without having had to perform any of these operations, or to make use of any other apparatus than a simple vaginal pessary, I may perhaps take the liberty of placing before the profession my views and practice in these cases, in a condensed form, together with some practical hints and a few interesting cases.

The uterns, in situ naturale, is always in the state of anteversion, the os uteri pointing towards the coccyx. Its axis therefore forms a more or less acute angle with that of the vagina, and the pressure of the abdominal viscera falls upon the posterior wall of the uterus. Before the uterus can descend, so as to rest upon the floor of the pelvis, it is necessary that its axis should correspond to that of the vagina, or in other words, the fundus uteri must go towards the sacrum, while the cervix moves towards the symphysis pubis, and the musculi retractores (Luschka) must have become sufficiently relaxed. Now the uterus, under the pressure of the abdominal viscera, slides down the vagina and through the sphincter vaginæ, dragging down with it the roof of the vagina, and the bladder on account of its very strong uterine attachment, which is made up by very tough connective tissue. We therefore have now uterus, vagina and bladder, anterior to the vulva, and a true case of procidentia uteri.

This is, in my opinion, the manner in which procidentia uteri developes itself, and as I, in this place, do not wish to recapitulate the causes and symptoms of this affliction, I proceed at once to describe my treatment.

The first step in the treatment is of course the replacing of the prolapsed organ or organs within the pelvis. This is generally very easily accomplished by gentle pressure against the uterus in the axis of the vagina. But I have occasionally met with cases in which attempts at replacing the womb within the pelvis failed on account of its increased size, or the great tenderness of the inflamed and ulcerated uterus. In such cases I touch the abraded or ulcerated surfaces freely with the solid argent. nitr., apply cold lotions to the womb, and, two or three days afterwards, I have generally found a renewed attempt at replacement successful. The patient lying in lithotomy position, and the prolapsed organs well oiled, I gently push the uterus, bladder and vagina within the pelvis as high up as possible. Now I carry my fingers in the posterior *cul de sac*, still pushing onward, until the posterior wall of the vagina is well stretched longitudinally, and turning the points of my fingers forward, I now insert one of Hodge's bar pessaries of the required size and shape in such a manner that, while its posterior bar fits snugly behind the cervical portion of the womb, it only presses the *cul de sac* upwards and forwards, without touching the cervix. If the posterior wall of the vagina should have become very short during the number of years of the existing procidentia, it will often be impossible to replace the uterus *perfectly* at the first operation, because we can not throw it sufficiently forward. But *nil desperandum.* From week to week we will make our lever pessary more powerful, by increasing its posterior curve, and finally the uterus will be where we want it—in anteversion; that is, the os uteri will point towards the coccyx. This mode of proceeding will appear very simple, and is indeed very simple, but only to those practitioners who have ample experience in the use of the most valuable Hodge's pessary, which is great for good, but perhaps equally great for evil. In those cases of procidentia uteri complicated with cystocele and rectocele, of which I treated a very extreme case about six years ago, I have modified Hodge's closed lever, as the author calls it, by putting a floor between the two lateral branches, leaving only sufficient room, at the posterior curve, to admit the cervix. The instrument, resting upon the floor of the pelvis, stretched by its posterior curve the posterior wall of the vagina so much upward and forward, that the rectocele was impossible, while the prolapsed bladder rested upon the floor of the pessary. (See cases 4 and 5.)

From the above it will be seen that it is my main object, in the mechanical treatment of prolapsus and procidentia uteri, to produce an anteversion, this being the best safeguard against prolapsus, and that I do this by carefully stretching the posterior wall of the vagina longitudinally by means of a properly shaped bar pessary. The size of this instrument depends naturally upon that of the vagina, and it should never be such as to stretch it laterally. More difficult is it to give the pessary the exact posterior curve required, upon which almost the entire success of treatment depends. As a rule, this curve should be as acute as possible, because it then produces the greatest degree of anteversion, but great care should be taken lest the instrument should become too powerful in stretching the vagina, or even press upon the cervix, which would lead to all sorts of trouble. I would therefore advise to adopt the following rule for ascertaining whether the posterior curve is of the proper degree in each individual case: After introducing the bar pessary into the vagina, and having brought its posterior bar well into the *cul de sac*, let the patient strain downward as if in labor, while you hold your two fingers on the front bar of the instrument. Does the front bar now rise so much as to impinge upon the symphysis pubis, your posterior curve is too acute, and the woman wearing the instrument will suffer from back-ache and difficulty in micturition; does it not rise at all from the floor of the pelvis, you may be certain that the curve is too flat, and the instrument therefore not powerful enough.

Having replaced a procident womb, I am in the habit of examining my patient daily for about a week, or even longer, for the purpose of watching the effect of the pessary, until I am convinced by bi-manual taxis, that the instrument holds the uterus in anteversion, without causing any undue pressure in the cul de sac, against the cervix, symphysis pubis, bladder, or upon the sacral plexus. Finding this all in order, my patient will neither feel the instrument in any position her body may assume *(in coitu nulla obstructio est*, says Professor Hodge), nor will she complain of backache or sense of weight in the lower abdomen. I now order my patient an astringent lotion, to be used in the shape of a fountain syringe, No. 2, which holds about one quart, three times daily, and request her to report from time to time.

CASES.

1st. *Mrs. M. S.*, very fleshy, 48 years old, and still menstruating regularly, says that, according to her opinion, her womb has been out of place since the birth of her youngest child, 18 years ago, but that it never "came out into the world" until about 5 years ago. On examining the case, I found the uterus entirely exterior to the vulva, along with a portion of the bladder. No abraded surface, and uterus not hypertrophied. I proceeded to replace the uterus, and found the posterior wall of the vagina sufficiently long to allow me to produce an anteversion at once. The pessary was bent to suit the case, put in place, and the patient sent home to be re-examined next day. On the following day I found the uterus well anteverted, and the pessary causing no undue pressure anywhere. The patient had for the first time been able to walk the distance to my office, without inconvenience, and had had no trouble in evacuating her bladder. A few days afterwards this lady resumed her household work, which she had not been able to attend to for years, and she has remained comfortable ever since. She has now worn the pessary 4½ years.

2d. An old colored woman, about 60 or 65 years of age, was presented to me by my friends *Drs. Watkins* and *Petit*, of this city. The old woman could hardly raise herself out of the chair, or drag her body across the room. Her uterus had been "outside" 12 or 15 years, and she suffered extremely from backache and dysuria. On examination we found a complete procidentia, and I at once replaced the uterus in the manner above described, which was done inside of 2 minutes. Upon getting out of the operating chair, the old woman found to her utter amazement that she could walk erect and even run up and down stairs. She was only examined once since, which was about two days afterwards, and has remained well ever since, as I am informed by Dr. Petit, who meets her occasionally. She has now worn the pessary about 12 months.

3d. A mulatto woman, *Lucy*, about 35 years old, and of delicate constitution, was presented by *Dr. Joseph Holt*, of this city. She has never had children, and her uterus has been completely "out of her body" for many years. All modes of treatment had been resorted to in vain, and four years ago Dr. Brickell had successfully occluded the vagina by operation. All to no purpose. The uterus is now completely procident and greatly hypertrophied, the uterine probe entering five inches, and the cervix measuring two inches in diameter at its os externum. No abrasion or ulceration. On making an attempt at replacing the uterus, I found the posterior wall of the vagina so short that it was impossible to carry the womb higher, than to just hide it out of sight. I therefore could derive no benefit from Hodge's bar pessary at present, and had to modify my usual plan. After having stretched the posterior wall of the vagina by an inflated pessary for a week or longer, I inserted a flexible, metallic, oval ring, bent in the manner of Hewitt's pessary (see Fig. 143, T. Gaillard Thomas' Diseases of Women, 3d Edit.), with a posterior curve sufficient to put the posterior wall of the vagina on the stretch. From week to week the posterior curve was increased, until, after about two months, the uterus was in situ, and the patient enabled to go to work. It will be seen that by increasing the curve of the Hewitt's I gradually made a Hodge's pessary.

4th. Mrs. Ph. D., very fleshy, 45 years old, and all her life a hard working woman, is the mother of 8 or 9 children, the youngest of whom is 9 years of age. Since her last delivery she has suffered from displacement, and for the last five years, from procidentia uteri. Her symptoms are the usual ones, and she has been treated by different persons on different plans. For a time she has worn one of Roser's modified apparatuses, which she, however, soon discarded. Finding it too troublesome and annoying, she preferred her condition without it. On examination, the uterus, vagina and bladder were found outside of the vulva. Seeing that, in this case, even a large bar pessary could only support the uterus, leaving the bladder to protrude through the instrument and the sphincter vaginæ, I had Mr. Himmel, of this city, to make for its relief a pessary of silver after a model made by myself of horn. The reason for making a model of horn is, that this material is very pliable when immersed in hot water, and therefore admits of being bent into the proper shape without trouble. The instrument thus gotten up was nothing but a Hodge's closed lever, to which there was added a floor, leaving only sufficient room at the posterior curvature to admit the cervix uteri. Having introduced this instrument I found that it filled its office admirably. The posterior curve held the cul de sac upward and forward, producing anteversion, and the prolapsed bladder rested upon the floor of the pessary. I now ordered the patient, while standing to strain downward with all her power, and, as I would have predicted, the instrument, as well as the prolapsed organs, remained in situ.

5th. Mrs. C., about 60 years old, came under treatment six years ago. This lady had suffered from displacement of the womb since the birth of her son, 34 years ago. Now the uterus and the bladder are completely prolapsed, and with it the front wall of the rectum, forming a rectocele of the size of an apple, and she can neither evacuate the bladder or rectum except by inserting a bottle, that she has for the purpose, into the vagina, and holding it there until both organs are relieved. This case was treated by an instrument like the one in case 4, and completely relieved in five visits paid her. She has remained well ever since.

ARTICLE IX. *Race and Nativity in certain Diseases.* By S. S. HERRICK, M.D., New Orleans.

The following tables were prepared chiefly to show the comparative prevalence of pulmonary consumption, trismus nascentium and still-births among our white and colored populations. The other particulars observed are incidental to the main plan, but are believed to throw some light upon the effect of our climate on the origin and development of consumption.

The first table shows (1) the much greater prevalence of this disease among the colored than the white people; (2) that our natives are least subject to it of all; (3) that those of foreign birth are most subject to it; (4) that natives of other Southern States have much more than average liability; (5) that natives of Northern States have slightly more than average liability. These conclusions require some remarks. A diminished liability is observed for natives and for whites, proving that our native white population enjoy the most favorable prospect. The increased liability of natives of other Southern States is probably explained by the large influx of negroes since the war, which must be much in excess of our white accessions from the same States. The greater liability of those of foreign birth is attributable to inherited predisposition rather than any acquired tendency here, for in the great majority of cases there must be an improvement in the circumstances of life. The same may be said of natives of the Northern States. Besides, large numbers of the latter come for the benefit of their health, remaining permanently if they improve, but otherwise, in many instances, returning home to die.

Table V. confirms the greater liability of the colored races to pulmonary consumption, showing that it prevails throughout the country, and at an increased ratio in the Northern cities.

Table II. shows that trismus nascentium has nearly half its victims among our colored population, though they constitute but a little more than one fourth the whole. Table V. shows that their liability in other Southern cities is even greater. It is evident, from a comparison, that this disease is much more prevalent in the Southern cities, owing probably to climatic influences. In some tropical countries, for instance the West Indies and portions of South America, it is still more prevalent. About 85 years ago it became endemic at the Lying-in Hospital, Dublin, and was attributed to defective ventilation, inasmuch as the abatement of this fault was followed by immediate subsidence of the disease.

The idea of Vogel and Niemeyer, that it is essentially a traumatic tetanus, dependent on peripheral irritation from the cord, may be admitted, if we recognize a strong predisposing influence in a warm climate, while the same influence undoubtedly obtains with tetanus.

The increased liability to still-birth is even more marked among our negro population. This is greatly attributable to unskillful attendance in labor; but I am assured by an experienced obstetrician that preternatural labors are markedly more common with colored than with white women.

The calculations in the tables are based on the census of 1870, without allowance for increase of population; consequently they are to be considered only as approximations.

TABLE I.—Mortality from Pulmonary Consumption in New Orleans, 1873, Classified according to Races and Nativity.

Month.	COLOR.			NATIVITY.						Total.
	White.	Colored.	Not stated.	Louisiana.	Other Southern States.	Northern States.	Europe.	Other for'gn Countries.	Not Stated.	
January	64	34	0	35	12	3	43	4	1	98
February	35	18	0	12	10	4	21	1	5	53
March	42	37	0	34	9	6	26	0	4	79
April	40	32	1	33	11	5	23	0	1	73
May	31	32	1	37	10	2	11	1	3	64
June	35	24	0	24	9	5	18	2	1	59
July	43	29	0	31	10	2	26	3	0	72
August	41	24	1	25	10	0	28	2	1	66
September	37	30	0	28	10	3	22	1	3	67
		Chin'n 1								
October	46	35	1	39	12	6	20	6	0	83
November	38	20	0	19	9	6	22	2	0	58
December	41	32	0	31	14	5	22	0	1	73
Total	493	348	4	348	126	47	282	22	20	845
Percentage of population.	73.63	26.37		59.91	8 99	5.30	24.01	1.30		
Percentage of Mortality.	58.34	41.66		41.18	14.91	5.56	33.37	2.60		

TABLE II.—Mortality from Pulmonary Consumption in New Orleans, 1873, *Classified for Ages.*

Month.	10 and under	10 to 20	20 to 30	30 to 40	40 to 50	50 to 60	Above 60.	Not stated	Total.
January ..	2	8	28	27	16	11	6	0	98
February .	2	1	17	11	8	6	6	2	53
March	7	6	24	14	9	10	9	0	79
April-....	5	4	23	17	10	6	7	1	73
May	4	4	20	14	11	7	3	1	64
June......	4	3	18	11	10	7	6	0	59
July	3	1	21	19	10	12	5	1	72
August....	0	2	22	16	11	13	1	1	66
Septemb'r.	6	5	14	23	13	3	3	0	67
October...	9	7	20	17	14	11	4	1	83
November.	1	2	20	13	12	6	4	0	58
December.	3	5	19	16	19	8	3	0	73
Total ...	46	48	246	198	143	100	57	7	845

TABLE III.—Trismus Nascentium for 1873, *Classified according to Races.*

Race.	Jan.	Feb.	Mar	Ap'il.	May	June.	July	Aug't	Sep.	Oct.	Nov	Dec.	Total.
White	14	5	8	7	10	11	9	16	16	12	8	12	128
Colored ----	10	5	5	7	5	6	14	18	10	9	10	5	104
Not Stated.	0	0	0	0	1	0	0	0	0	0	1	0	2
Total ------	24	10	13	14	16	17	23	34	26	21	19	17	234

TABLE IV.—Still-births for 1873, *Classified according to Races.*

Race.	Jan.	Feb.	Mar.	Apr'l.	May	June.	July	Aug't	Sep.	Oct.	Nov.	Dec.	Total.
White	19	19	22	14	11	17	31	22	16	30	22	18	241
Colored.----	15	11	15	11	16	23	24	20	21	24	20	18	218
Not Stated.	0	0	0	0	1	0	0	0	0	1	2	0	4
Total..----	34	30	37	25	28	40	55	42	37	55	44	36	463

TABLE V.—Showing the Comparative Prevalence of Consumption, Trismus Nascentium and Still-births, in several of our Cities, with Classification for Color or Race. Annual Mortality per 1000 *of Population respectively, Census of* 1870.

City.	Pulmonary Consumption.			Trismus Nascentium			Still-Births.		
	Per 1000, white.	Per 1000, Colored.	Per 1000, Aggregate.	Per 1000, White	Per 1000, Colored.	Per 1000, Aggregate.	Per 1000, White.	Per 1000, Colored.	Per 1000, Aggregate.
New Orleans, 1872	----	....	4.09	----	----	1.20	----	----	2.43
Charleston, 1871--------	2 32	5 15	3.84	0.61	3.[illegible]5	1.92	No	ne stat	ed
Mobile, last half of 1872.	2.47	3.59	2.96	0.27	2 22	1.12	1.38	3.09	2.18
Mobile, estimate for the whole of 1872--------	4.94	7.18	5.92	0.54	4.44	2.24	2.76	6.18	4.36
St Louis. year ending May 22d, 1872--------	....	----	1 92	No	ne stat	ed.	----	----	1 16
New York. 1871--------	4 37	9.54	4.44	---	----	0.049	No	ne stat	ed.
Boston, 1871..............	----	....	4.31	No	ne stat	ed.	----	----	2.16
Cincinnati, 1870-------....	----	----	2 69	No	ne stat	ed.	----	----	1.47
Pittsburgh, 1871--------	....	----	2.35	No	ne stat	ed.	....	....	1.75
Providence, 1871--------	----	----	2 81	----	----	1 in 68.904	1.58	3 09	1.64
New Orleans, 1873	3.49	6 89	4.41	0.90	2.06	1.22	1.71	4 32	2 41
Philadelphia, 1872------	3 31	7.74	3.45	No	ne stat	ed.	----	----	1.20
Baltimore, 1869........	....	....	3.39	No	ne stat	ed.	----	....	1.[illegible]8
Louisville. 1869....----	....	----	2.83	No	ne stat	ed.	...	----	1.78
San Francisco, to June 30th, 1870............ ..	2.67	Mongolian. 5.98	2 97	....	----	0.013	----	----	1.71
Richmond, 1871--------	2.84	4.54	3.62	0.18	0.47	0.31	1.42	3.[illegible]7	2.44

NEW ORLEANS MEDICAL AND SURGICAL ASSOCIATION—CONSTITUTION AND PROCEEDINGS.

[During the latter part of the past year some of the physicians of this city determined to found a new medical association. The movement originated among the junior members of the profession, who thus seem to have resolved that the supineness of their seniors should not become a reproach to themselves. We publish here their constitution, rules and signatures, with some of their papers and proceedings. We wish them full success and perpetuity in their enterprise, and hope that their talents and energy will often enrich our pages and gratify and profit our readers—ED.]

CONSTITUTION AND RULES OF THE NEW ORLEANS MEDICAL AND SURGICAL ASSOCIATION.

For the mutual improvement, instruction and interchange of opinions and observations, the discussion of medical subjects, and the cultivation of kindly feelings among the members of the medical profession in New Orleans, the foundation of a Medical Association is deemed advisable.

Therefore we, the undersigned, for the furtherance of these objects, do resolve ourselves into such an association, and subscribe our names to the following constitution and rules.

I. This Association shall be known as the New Orleans Medical and Surgical Association, and shall consist of not more than forty members (unless increased by special act of the Association), and ten members shall constitute a quorum for transaction of business.

II. The officers of this association shall be a President, a Vice President, and a Secretary. The Secretary shall perform the duties of Treasurer. The term of office of President and Vice President shall be three months. The term of office of Secretary shall be one year.

III. Any vacancies occurring in any of the above named offices shall be filled for the remainder of the term at the first regular meeting after vacancy occurs.

IV. All elections for officers shall be by ballot, and a majority of votes shall be necessary for election.

V. The president shall preside at all meetings, and shall have the power of calling extra sessions whenever he may deem proper.

VI. In the absence of the President, his chair shall be filled by the Vice President, if present, and in the absence of both the Association shall elect a president *pro tem.*

VII. It shall be the duty of the Secretary to keep an accurate record of the proceedings of the Association; to take charge of all monies collected for the use of the Association, and he shall give notice to members of all extra meetings. As Treasurer he shall report quarterly the financial condition of the Association.

VIII. All propositions for membership shall originate in the Association.

IX. All applications for membership shall be laid on the table from the first reading until the next regular meeting; when the ballot shall be taken, and *three* negative votes shall constitute rejection.

X. No one shall be considered a member of this Association until he shall have signed the Constitution and paid the initiation fee.

XI. The initiation fee shall be two dollars. The dues, one dollar quarterly.

XII. The qualifications for membership shall be—1st. The applicant shall be a regular graduate. 2d. He shall have a good moral character. 3d. He shall be an earnest worker for the welfare of the profession.

XIII. Any member failing to attend three consecutive meetings, without sufficient excuse, shall forfeit membership.

XIV. All communications addressed to this Association, and all papers read and discussed, shall be confidential, and shall not be made public without the consent of the author.

XV. Any change made in the Constitution shall be presented in writing, and laid on the table until the next regular meeting, to be acted on under Article 2 of the Order of Business. Two-thirds of *members* shall vote for such change.

XVI. The time of meeting shall be every Monday at 7½ P. M., from October 1st to May 1st, and 8 P. M., from May 1st to October 1st.

XVII. The place of meeting shall be designated at first regular meeting, and shall be subject to change at any time by a majority vote.

Order of Business.

1st. Reading of minutes of preceding meeting.
2d. Unfinished business.
3d. Original Papers.
4th. Discussion of papers.
5th. Relation of cases, and observations on prevailing diseases; also medical news.
6th. Irregular business.
7th. Appointment by the President of some member to prepare a paper on any special subject.
8th. Proposals for membership.
9th. Election of members.
10th. Adjournment.

Officers and Members.

Dr. F. Loeber, *President.*
Dr. W. H. Watkins, *Secretary.*

Dr. Warren Stone,	Dr. E. Souchon.	Dr. Y. R. LeMonnier,
" O R. Lannge,	" Joseph Holt,	" Jos. Schmittle,
" W. P. Brewer,	" R. J. Mainegra,	" L. S. McMurtry,
" Oscar Czarnowski,	" A. W. Perry,	" V. Grima,
" John J. Castellanos,	" L. F. Salomon,	" E. T. Shepard,
" C. A. Gaudet,	" L. G. Durr,	" A. Pettit.
" Saml. Logan,	" J. M. Cullen,	" R. R. Hopkins,
" Wm. R. Mandeville,	" S. S. Herrick,	" Frank Hawthorn,

At a regular meeting of the Association, held February 2d, 1874, Articles ix. and xiv. were changed to read as follows:

IX. The names of all applicants for membership shall be posted in a conspicuous place in the room of meeting, there to remain three consecutive meetings to be voted upon, and no application shall be considered as having been voted upon with less than seven-eighths of the members having voted. *Three* negative votes shall constitute rejection.

XIV. The publication of papers read to this Association, discussions on papers, and other proceedings of the Association, shall be confided to a committee of three, who shall be known as the "Publishing Committee." They shall be selected by the President, to serve for one year. Their duties shall be these: They shall have the power to select such papers, discussions on papers and cases, they may adjudge worthy of publication; confer with the authors of such papers and discussions, and after gaining their consent, offer them for publication in any journal the Association may select.

W. H. WATKINS, M.D., *Secretary.*

Cephalic Version. By Joseph Holt, M D.

Gentlemen:—In the order of our exercises, it has fallen to my lot to present to this Association, for discussion this evening, a subject relating to midwifery.

I will invite your attention to ' Cephalic Version;" that manipulation whereby a mal-presentation or position of the child in utero may be corrected; not partially, by substituting a presentation less faulty, yet in itself liable to dangers of its own, but by correcting that which is wrong into that which is right absolutely, into a presentation by the vertex, the one that reason and experience both teach to be most compatible with the well-being of the mother and of the child.

Without stopping to point out severally the risks and difficulties peculiar to them, I shall simply postulate that, footling or breech labors are not natural. The dangers to the child are so great as to make breech labors a principal factor in fœtal mortality during parturition. Churchill, in his statistics, declares that of those born in this way one in every three are lost. Every obstetric practitioner attending such cases apprehends the death of the child, and so warns those about him. The woman, though not in imminent peril, is exposed to greater risks. All teachers of midwifery devote considerable space to the management of breech labors, showing a multitude of troubles likely to arise, and how to meet them. They tell us that such labors are at best of longer duration and more painful than when by the vertex, and that in them the maternal mortality is greater. Dr. Barnes, in his book on Obstetric Operations, says, referring to delivery by the breech: "The simplicity is indeed more apparent than real, more theoretical than practical. The task of delivering a breech case, such as I shall presently describe, vies in fidiculty with that which has to be encountered in the most severe forms of shoulder presentation." Bearing in mind the relative value of head and footling labors, and knowing that in performing version it is, in the majority of instances, optional with the accoucheur by which end he will turn, I have long been impressed with the idea of the necessity of cephalic version as an established operative measure, to be held in readiness to be performed in any case that may reasonably admit of it; and not to be regarded, as I might safely venture to assert all present have been taught, as one of those procedures that may, under certain remarkably favorable circumstances, be attempted, but, indeed, "the less meddled or made with the better." I will further venture to say that, if any gentleman here will look back carefully into his preparatory medical education, he will fail to discover that he has been in any wise especially instructed in relation to this subject. Suppose that even now he should wish to consult our standard authorities, what would he learn? In the first place, the slight notice generally given it shows its estimation in the opinion of the writer. Tyler Smith devotes eleven lines to the subject, and a part of them read thus: "Cephalic version is only practicable or attempted in rare cases; and by turning, the operation of bringing down the breech or feet is understood." He simply ignores it.

Ramsbotham gives it no further attention than to utterly discountenance it in these few words:—after telling us to raise the presenting part, introduce the hand into the uterus, seize hold of the head, bring it to the brim of the pelvis, and convert the case into a natural presentation; all of which is by no means the proper way to set about it, he goes on to say—"The operation of raising the shoulder and bringing down the head would be the safest to the child, because there would then be little chance of pressure on the funis umbilicalis; and it is that pressure which usually destroys the fœtus when extracted by the breech or feet.

"But although safest to the child, it is the most dangerous to the mother, as well as the most difficult to the operator; and the danger, as might be expected, is in proportion to the difficulty.

"The form, size, and slippery nature of the cranium, all combine to produce this difficulty. Even although the shoulders might be raised from the brim, and pushed entirely out of the way, it is no easy task to grasp the head so as to bring the vertex over the superior aperture. And in these attempts, which will most likely require to be repeated, both the uterus and vagina would be seriously endangered. From the danger and difficulty accompanying this operation it is now, I believe, entirely abandoned in England as a means of delivery under transverse cases."

Cazeaux and Churchill both speak fairly of the operation, but so limit its field of application as virtually to nullify it. They make no effort to impress its importance, and utterly neglect to teach how it may be accomplished, surely, speedily, and with ease.

They offer no real encouragement, but seem to speak of it more to fill in and make their books complete, than with any particular desire to give instruction. In speaking of face, or irregular head presentations, the former advises to make an effort to bring down the vertex, but should we meet with any obstacle, to go after the feet. Churchill makes this significant remark, however: "The advantages of cephalic versions are—first, a greater facility in reaching the head, for it is not proposed to be used in cases where the feet are nearer the os uteri; and secondly, a vast saving of infantile life. This operation will be no more fatal to the child than natural labor, if performed early, whereas in footling cases, and in version by the feet, more than one in three are lost." He quotes Velpeau as saying: "Delivery by the breech is far from being a simple and safe operation; as regards the child, it is less so than cephalic version, even if the forceps should afterwards be applied."

Meadows, in his Manual of Midwifery, lately published, devotes one page to it, treating of it in a general way, and limiting it to almost nothing. He says: "Cephalic version, if so fine a name may be given to so trivial a proceeding, consists in removing any obstruction to engagement in the pelvis by the head, seizing the latter, altering its position, and bringing it down. Flamant, who was probably the first to perform this operation, appears at first to have accomplished it chiefly if not entirely by external manipulation; but he subsequently resorted to internal proceedings, and probably may in some cases have combined both methods. Strange to say, though it is not difficult of performance, and may often be attended with the happiest results, it is still very seldom resorted to." And now are we puzzled; for, after telling us to remove any obstructions to engagement by the head, to seize the latter, alter its position, and bring it down, he limits the operation to cases wherein the membranes are entire. Can such teaching be made available? Did he ever perform cephalic version? I have made these quotations, gentlemen, as sufficiently showing the general tenor of our text books on the subject. After such instruction, is it to be wondered at that we, who accept the words of these writers as authority, should make short work of it and discard the operation entirely? Would any practitioner thus taught, and starting out, would he dare to use his own judgment and risk his reputation on it? I think not. He starts out uninformed, and committed to a narrow line of iacton; the chances are that he will only be confirmed in it. And now the question occurs: If the operation is intrinsically of great merit, why has not all this been discovered long ago, and why has it not been established and in general use? The history of the operation, or rather of the obstetric art, furnishes a satisfactory reply. I shall not consume time by an unnecessary detailing of historic events and mention of names, inasmuch as I can attain my object directly by generalizing. Those profound observers whose names are identified with the earlier history of obstetrics fully comprehended and taught that a vertex presentation was the only normal one. They clearly recognized all the difficulties and dangers growing out of a breech or footling labor, and when brought to confront a deviation requiring version, the very first suggestion was restoration. Some of these older writers urged this with far more clearness than those of later times. Although limited in their power of action to almost their bare hands, yet, by a selection of cases, they turned by the head frequently and successfully. The operation fell into disuse simply because these masters lacked the means of making good in completion that which they had so skilfully begun. They lacked chloroform and the long, curved forceps. It is upon our ability to avail ourselves of these, together with a clear knowledge of the bi-polar method of combined internal and external version, that our reliance and success in this operation as a speedy and sure one depend. With these at command, the field of cephalic version is so extended as to comprehend a great number of cases heretofore given over to podalic turning without a question. The time has arrived in the onward march of science when we have to change our line of action to suit improved appliances, and I can assure you, in regard to cephalic version, we are not without masterly leaders.

The bi-polar method of manipulating the child in version generally has been most clearly set forth by Braxton Hicks—he, however, has taught it as an aid in turning by the feet.

To Prof. M. B. Wright, of Cincinnati, is due the especial credit of having taught the application of this method in turning by the head, as well as of thoroughly elucidating the question of cephalic version. "As head presentation," says Dr. Robert Barnes, "is the type of natural labor, it follows that to obtain a head presentation is the great end to be contemplated by art. It seems enough to state this proposition to command immediate assent, but in practice it is all but universally contemned.

No one will dispute that the chance of a child's life is far better if birth takes place by the head than if by the breech or feet. Yet delivery by the feet is almost invariably practiced when turning, or substitution of a favorable for an unfavorable presentation has to be practiced." He quotes Hohl: "Turning by the head is much less esteemed than it ought to be, and it would be more esteemed if more pains were taken to instruct pupils how to perform it on the phantom."

What is the influence of chloroform on the operation? It brings the patient more thoroughly under the control of the operator and lessens uterine action, especially the reflex contraction excited by efforts at manipulation. This reflex irritability is in many cases so great as utterly to thwart any attempt at version without anesthesia.

The bi-polar method is a simple suggestion of common sense. It signifies the consentaneous use of both hands, the one internal, pushing up and away from the brim the presenting part, and favoring the engagement of the head, while the other, laid upon the woman's abdomen, presses upwards and towards her median line the breech of the child. It is by the concerted gentle and repeated urgings of the two hands so applied that the position of the child is gradually changed, rather than by direct force. It is not necessary to pass the hand further into the uterus than is required to obtain a firm purchase on the part we wish to push up out of the way. As this is being effected, and as the breech goes towards the fundus, the head continually approaches the brim. Sometimes, when the operation has nearly been completed, occasion will favor passing up the hand, grasping the head, flexing and placing it in position at once. This is especially indicated in correcting face presentations. External pressure over the child's head, whether by the operator or an assistant, urging it towards the brim and holding it there, helps us marvelously.

It is sometimes astonishing to see how we can control the head between the two hands, almost as completely as if it were outside the person of the mother. Having now effected version, that is, placed the head, flexed as well as we can, over the brim, left or right occip. ant., with the long forceps we effect engagement.

If we are so fortunate as to place the head in such nice position that it will descend of itself into the brim, so much the better; but in many instances it is not possible for us to do this, or the head may have an obstinate tendency towards extension or glancing off, and here it is the forceps make good all that we have done.

In what cases shall we resort to cephalic version? Making a general reply, we say, in all cases wherein our main object is to correct a deviation from the normal vertex position, not actually or almost a breech case. Supposing a cross birth, the child alive, its pelvic end nearer the os; under such circumstances we would be governed by the degree of mobility existing. If the womb had not yet come down upon the child, grasping it firmly we would turn by the head. Again, in a cross birth, the child at full term and dead, I would turn by the head if equally practicable, preferring a vertex presentation, and relying on my forceps if required, than to introduce my hand in search for the feet, and then run the risk of all the harassment and annoyance liable to occur in a breech case.

But cephalic version is essentially conservative, looking to the safety of the child.

Under circumstances of imminent peril to the life of the mother, and demanding delivery by the speediest possible method, we cease to consider the life of the child, and adopt whatever measure will most certainly secure that end. Oftentimes podalic version offers the readiest remedy, as in placenta previa, undue accidental hemorrhage, convulsions, or other like calamity.

The state of the womb as to the presence or escape of the waters: the same rules govern as in podalic version. The question is determined by the degree of fœtal mobility, the woman being under chloroform.

I will beg your attention a little longer, gentlemen, while I briefly state the points of interest in five cases, each of which may serve as the type of a class.

My especial attention was directed to cephalic version by a case which occurred about eight years ago. Prof. Howard Smith being engaged and unable to leave town, requested me to attend for him an obstetrical call in Gretna.

I found the woman in extreme indigence, in coma, indeed in the dying state, from cerebral congestion, the result of malarial fever; had been insensible for three days. No physician had seen her. Was told she had been in labor about thirty hours; the membranes had been ruptured about twenty-four. Examining, I found a loop of funis protruding from the vulva, cold and pulseless; child crosswise; head in left iliac fossa, right shoulder partially impacted in the brim. In pushing up the presenting part, intending to go for the feet, I found a greater degree of mobility than I had anticipated. I found, indeed, that I could as easily bring down the head as the feet. The question then occurred: Why shall I not turn by the head, and so give preference to a natural presentation, particularly as I can control and conclude delivery with my forceps? Seeing it could do no possible harm, I determined to try it, and in a few minutes brought the head into proper position over the brim. I used, as I might say, instinctively the bi-polar method; that is, while I operated with my right hand internally, with the left I pushed up the breech. How easily now could I have slipped on the forceps and have delivered! But no, I was a coward from precept, and lacked a precedent. I thought it best to go the sure old track laid down by authors, and so passed my hand up and turned by the feet. Listen to the sequel. Just as the breech was about to enter the brim, by a sudden and powerful effort of the uterus, the child was doubled up and its breech firmly seated in the right iliac fossa. To undo this, and bring the breech into the brim, was a formidable task. I was compelled to accelerate delivery, and, therefore, to make tractions: the woman was dying, and her friends exceedingly anxious she should be delivered while alive. The breech and body descended with ease, but as the shoulders engaged, the womb by another sudden and tremendous effort, drove the child down and jammed its head, both arms up, in the brim. To disengage the arms was difficult, and required considerable time.

And finally, on account of the large head, and an annular constriction of the cervix about the child's neck, I was obliged to introduce the blunt-hook end of my forceps blade into the child's mouth, and make traction upon its lower jaw, as well as to pull upon its neck, observing all the manœuvres prescribed, before I could complete delivery. I encountered almost every mishap peculiar to a breech case, and consumed about thrice the time and twenty times the trouble I would have met had the forceps been used. Nor were they due to a fault resident in myself, for every one of these contingencies is recognized as standing in the way of every breech case, in the hand of any physician.

I was on the alert for and relieved each as it occurred. My error consisted in putting myself in the way of liability.

Case 2d.—Was called by a midwife to see a woman in labor, at term. The membranes, I was informed, had been broken about three hours; the waters had wholly escaped. The child was alive but suffering dangerously. Its head was lodged in the left iliac fossa, and strongly bent sideways, so as to make the right ear easily accessible. The case was an incipient right shoulder presentation. The womb was contracted upon the child firmly, but not excessively. Since the case first mentioned I had read the papers of Braxton Hicks, and also the valuable instruction of Professor Wright. The woman was put moderately under chloroform, and with greater ease than I could possibly have turned by the feet, I pushed up shoulder and breech. The head came over the brim. Having flexed and placed it as well as I could, and, while an assistant pressed firmly with one hand over the fundus, the other over the child's head, thus holding it steady upon the brim, I applied the forceps and effected engagement. The woman shortly delivered herself of a living child.

Case 3d.—Was requested by Dr. Herrick to see with him a case to which he had just been called.

We found the woman in labor, at term. Membranes ruptured five hours before. The womb acting powerfully. The child alive; head in left iliac fossa; right shoulder jammed into the brim; hand hanging from the vulva, blue and greatly swollen. Now, here was a case almost upon the extreme of the possibility of version. Administered chloroform to complete anæsthesia, and began the bi-polar method. The great difficulty was to move the child. After a few minutes spent in the gentle urging already described, the shoulder began to ease up from its seat of impaction; the breech to be disengaged from the uterine wall wherein it had been sacculated. By directing my internal pressing over the clavicle and sub-clavicular fossa, I caused the whole child, as I pushed up the shoulder, to make a half revolution upon its long axis, backwards; as this was done, the depending arm was drawn up across the chest and entirely out of the way. Indeed, it gave no more trouble than if it had not been down. At last, when the head nearly placed itself over the brim, I grasped and placed it in position, flexed, applied the forceps and delivered of a living child.

We were in this woman's house, from first to last, one hour.

Case 4th.—Was called to see Mrs. M. in hard labor, at term. She was attended by a midwife. Was told the membranes had ruptured about three hours before

The waters had entirely escaped; uterus firmly contracted upon the child. The child, alive, was in an imperfect face presentation; the forehead rested firmly upon the left anterior margin of the brim. The tendency was to a chin and chest presentation. Just as I had concluded the preliminary examination, Dr. Albert Gaudet, who had also been sent for, entered the room. He carefully examined the case, and confirmed what has been stated. Administered chloroform to complete anesthesia. Used the bi-polar method; pushed the chest and breech well up, flexed the head, but not sufficiently to bring the vertex over the brim. There was an obstinate tendency to extension. Overcame this by firm external pressure over the back of the child's head until the forceps were applied. The occiput being lodged upon the edge of the brim, considerable effort was required to effect engagement, which occurred with a jolt, the vertex descending suddenly into the cavity. We were greatly disappointed in the result of this case. The head was delivered with ease; but with its birth there was a total cessation of uterine action; the shoulders were large and tightly packed, and before their delivery could possibly be effected the child expired.

Case 5th.—Was called by a midwife to see Mrs. A. P. in labor; full term, third child. Both of the former had been carried to term, born by the breech, and lost in delivery. She and her husband were exceedingly anxious to raise a family. Was told the waters had escaped three hours before. She was having frequent and powerful second stage pains. The child presented by the chest and chin. The forehead lay above the linea-ileo-pectinea, left anterior. The case was one of extreme extension, the occiput being fairly buried in the back. Because of this extension, the head being out of the line of the expulsive force exerted through the spinal column, the chest descended into the brim, dragging the head down with it.

The diameter presenting at the superior strait may be stated as the long diameter of the head, measuring from the brow plus the thickness of the chest. The woman was in a state of nervous trepidation. So excessive was reflex irritability, the slightest movement of the hand in preliminary examination excited sudden and powerful uterine action.

Having induced complete anæsthesia, I passed my right hand up to the chest and face; these were driven into the brim, and impacted so tightly as to make me fearful of being able to turn at all. By patient effort I succeeded in disengaging the breech from the grasp of the womb, and in pushing it well up to the fundus. As it moved the chest also began to yield. After pressing the entire body of the child away from the brim the case now stood as a face presentation. The greatest difficulty of all was now in flexing the head. This I finally did by passing my hand behind the occiput, at the same time pressing upon it externally.

When flexion was completed, the external pressure being maintained, applied the forceps and delivered of a living child. This woman was the subject of conjugate narrowing to about three and a half inches.

In this case was illustrated with peculiar force the potency of the triunited agents—chloroform, the bi-polar method of version, and the forceps.

Cholera. By A. Pettet, M.D.

Mr. President and gentlemen of the Association—This being our first regular meeting, and having had very little time to prepare, I shall not attempt a review of the extensive literature on the subject of cholera, or to trace its history from its eastern origin down to the present time. I shall first read you a report of several cases of cholera asphyxia treated by my friend Dr. W. H. Watkins and myself, during our late epidemic, and will then make some remarks on the pathology, cause, mode of diffusion, and general treatment of the disease.

About the middle of February or first of March, there commenced in this city an epidemic of cholera, which proved comparatively very mild, most of the cases not passing the stage of diarrhœa or cholerine (using the latter term to imply impending collapse), but we undoubtedly had many cases of asphyxia. During the month of April I had a conversation with an old and highly esteemed physician, doing a large practice. He expressed much doubt as to there being any cholera in the city; said that he had treated many cases of diarrhœa, and had invariably commenced his treatment by the administration of castor oil, calomel, or some other purgative. I esteemed and respected my friend very much, but dared not to adopt his practice, for I was sure that I had seen cases of undoubted cholera, and that it was unsafe practice to give purgatives where there was a predisposition to diarrhœa.

Case First—On the morning of the eleventh day of April, I was called to see a negro man, aged 35 years, residing at the corner of Washington and Carondelet streets. I found him very much prostrated, having large and frequent rice-water discharges, severe cramps in nearly every muscle of his body, lips and nails blue, frequent vomiting, great thirst, labored perspiration, and a feeble and frequent pulse; his skin was quite cool but not cold, and his countenance expressed great anxiety; he had had a moderate diarrhœa for several days, which he attributed to the drinking of river water, and it had rapidly grown worse during the latter part of the preceding night. I immediately administered $\frac{3}{8}$ gr. morphia and 1-32 gr. atropia by hypodermic injection, and ordered a mixture each dose of which contained 15 grs. of sub-nit-bismuth, 20 min. of tinct. of opium, and 40 minims of cherry laurel-water, the vehicle being cinnamon water, the dose to be repeated every two hours or oftener if vomited. Ordered that pounded ice be given ad libitum, a little ice water occasionally, and iced champagne in wine glassful doses every half hour: ordered a hot mustard foot-bath, a sinapism along the spine, and cold compresses over the abdomen. On revisiting him several hours afterwards, found that the cramps were less frequent, milder, and of shorter duration; discharges the same, except that they now contained flocculi, resembling milk coagula; skin was now perspiring, cold and devoid of elasticity; when pinched up would remain so for some time; tongue and breath were cold and the tongue was bluish. Instead of former anxiety there was now an apathetic cast of countenance, and a disposition to sleep constantly; was easily aroused, and when spoken to talked rationally, but seemed perfectly indifferent to everything, even to death; pupils were sensible to light; respiration was suspirious, and only seven or eight per minute, yet on auscultation there seemed a little respiration between the perceptible movements of the chest. The pulse was hardly perceptible.

In his now utter prostration and relaxation I feared to give more morphia, but administered hypodermically a little more than the 1-48th gr. of atro'pia, continued the bismuth mixture without the tinct. opium and cherry-laurel water, and ordered strong enemas of tannin; ordered that the skin be kept wiped dry, and that gentle frictions with warm flannels and dry mustard be kept up constantly; that the sinapism be moved from spine to anterior of the chest and epigastrium, cold compresses to the abdomen to be continued, and that hot irons and bottles be placed to feet and all around the body, champagne and ice to be continued, and that iced milk and lime water, and iced beef-tea be administered in small quantities frequently repeated. Visited him again in four hours; cramps now entirely suspended, vomiting much less frequent; stools less frequent, not so large but still very fluid; pulse and respiration somewhat improved, and skin not quite so much disposed to perspiration; no urine has been passed since I first saw him. Suspended bismuth mixture, and ordered three 6 gr. doses of acetate of lead suspended in cinnamon water, doses to be repeated every two hours; enemas of tannin to be repeated every three hours; other treatment to be continued same as before. Visited him again in four or five hours; found skin a little warmer, and the pulse and respiration a little more improved; gave 1-32 gr. atropia hypodermically, ordered that the sinapism be shifted from place to place over the body, and that when the lead mixture was out the bismuth mixture should be resumed; other treatment same as before. Visited him again in four hours and repeated the atropia, continuing former treatment. Visited him again in seven or eight hours, and found symptoms not farther improved; repeated hypodermic injection of atropia, and continued former treatment. At my next visit I found quite a perceptible improvement, yet there was no secretion of urine. I continued this treatment, repeating the atropia at nearly every visit. He continued to improve slowly, yet on the morning of the fourth day, having inserted the catheter, I only obtained sufficient urine to wet the instrument; ordered a blister over the region of kidneys and in the evening he passed water freely. Patient now improved rapidly, and after four or five days' constipation bowels were moved by a large enema of simple water. I now put him on simple tonics and discharged the case.

The points to which I would call attention in this case are, the long suppression of renal function and the apparent efficacy of atropine in establishing reaction.

For the following cases I am indebted to Dr. W. H. Watkins.

Case Second.—Was called at 6 a. m. to see Miss R., a native of New Orleans, aged 23 years; found her greatly exhausted; she had been suffering for eight hours, vomiting every few minutes, cramps in arms and legs, and purging rice-water like discharges; thirst was intense. Administered hypodermically, morphia sulph. gr. ¼, and atropia sulph. gr. 1-48; ordered dry heat, friction, ice and champagne. At 8 o'clock she was better, had had no more cramps, and had vomited but twice; no more purging. Ordered bismuth sub-nit. in 20 gr. doses, and continued other treatment. Had passed no urine since first visit. At 12 m. repeated hypodermic injection; rested well that night, but on the following day, after drinking some milk and lime water, was seized with violent cramps and purging; hypodermic injection of morphia and atropia quieted symptoms. She made a very slow recovery, having tendency to typhoid symptoms, which were combated with beef-tea, champagne and quinine.

Case Third.—Was called, May 21st, at 8 a. m., to see O'B., a negro, aged 35 years; he had been sick since May 18th, and attributed his sickness to the eating of fresh pork, as diarrhœa commenced a few hours after his dinner. Found him suffering with vomiting, cramps and purging; had only suffered two hours with cramps; administered hypodermic injection of morphia and atropia, and ordered bismuth sub-nit. in 20 gr. doses.

At 12 m. he was relieved of his cramps, but could not keep ice or champagne on his stomach; had passed no water, was cold and sweating profusely; was perfectly conscious of his condition, and talked rationally to his friends; administered hypodermically 1-40 gr. atropia sulph. At 9 p. m. had passed no urine, but retained more ice and champagne; repeated hypodermic of atropia and continued frictions and dry heat. At 6 a. m., May 22d, patient had passed no urine, with symptoms otherwise the same; administered hypodermic of atropia and repeated it every three hours, and continued other treatment. He became warmer at 7 p. m. Introduced catheter in bladder but obtained no urine. At 6 a. m., May 23d, repeated hypodermic of atropia, and introduced catheter without obtaining urine. At 12 m. passed two oz. of urine, and at 6 p. m. drew off about six oz. of urine. From this time he rallied, retained iced champagne and beef-tea on his stomach, but typhoid symptoms supervening, he made a slow recovery; he suffered for six weeks with œdema of feet and legs, but no albumen was found in his urine; small doses of quinine and iron completed his recovery.

Cholera is a zymotic disease: a specific poison is received into the system and there multiplies itself, and is eliminated through the mucous membrane of the alimentary canal. All the effects of cholera are due to two causes—firstly, the direct poisonous action of the cholera germ on the blood utterly unfitting it for all nutritive purposes; or, secondly, the changes indirectly brought about in the blood by an effort of the system to eliminate the poison. Many instances of death from the first cause are reported to have occurred within ten and even five minutes from appearance of first symptom. Similar instances of sudden death are said to have resulted from small-pox, scarlatina and other diseases. These cases can not be accounted for, except by admitting that some most virulent poison has been received into the system, touching the whole blood corruptibly, or that the individual susceptibility to the action of this poison is so great that he is more potently affected by it than most men under similar circumstances.

Should the patient escape death from this first powerful overwhelming action of the poison, a process is soon established for its elimination. As mercury is eliminated principally through the salivary glands, sulphur through the skin, and iodide of potassium through the kidneys, so is the cholera poison principally through the alimentary canal. Why these various foreign substances seek each a different emunctory we know not, but we will presume that the cholera poison acting as a stimulant to the nervous centres controlling the circulation in the walls of the stomach and bowels, there is a determination of the blood to those parts, producing a congestion which is relieved by a diffusion of fluids and salts from the vascular system into the alimentary canal.

Now, in order that the blood corpuscles may circulate, and be the absorbers and carriers of oxygen to the system at large, there must be a certain quantity of intercellular fluid, and the cells themselves must possess their normal constituents. In the little reading on this subject that I have had time to do since our last meeting, I have come across nothing so interesting as the investigations of Parks and Garrod, of London, on the chemistry of the blood of cholera patients. They establish these facts, that as a consequence or effect of the cholera poison, there is a diffusion of the water, inorganic and organic solids, from the vascular system to the alimentary canal, in consequence of which there is an altered relation of the intercellular fluid to the corpuscular fluid, and there now occurs a diffusion of fluids, inorganic and organic solids, from the corpuscle to the intercellular fluid. As a result of these several changes, the corpuscles are so changed or altered that their ability to absorb oxygen is reduced one-half, and respiration fails, not for want of air, since the voluntary muscles of respiration are under control and air is inhaled, but because the blood refuses to perform its part in the function of respiration, oxygen is not absorbed, and the air is returned cold and but little altered as to its constituents. As a consequence of this altered chemistry of the blood there occurs a stagnation of blood, commencing in the pulmonary arteries and reflected back on the right heart, veins and systemic capillaries, the left heart being found, on post-mortem examination, nearly or quite empty, having acted so long as blood was returned to it. The blood of a cholera patient is still farther deteriorated by interruption of the various functions, more especially that of the kidneys, and urea accumulates in the system. In consequence of the loss of fluid from the vascular system, the interstitial fluids, dissolved in which are certain organic solids, sugar, for instance, which easily undergo decomposition, are absorbed and still farther deteriorate the circulating fluid.

Besides all these chemical alterations in the blood, unfitting it for purposes of nutrition, we have superadded an immense gastro-intestinal catarrh. In an incredibly short space of time the mucous membrane of the gastro-intestinal canal is stripped of its epithelium as the skin is stripped of its epidermis by a blister or a burn. The nervous system is thus subjected to a shock similar to that sustained from an extensive burn, and the digestive apparatus is much disqualified for the preparation of nutritive fluids for the reorganization of the blood.

Though it is generally conceded that the cholera germ originated in India, it is now believed to be indigenous to both Europe and America, and undergoes multiplication not only in the system, but, under certain meteorological and telluric conditions, in the air around us. Thus it has been observed that a moderate elevation of temperature, high barometrical pressure, a moderate degree of moisture, stagnation of atmosphere, lowness of sites of houses, absence of ozone and the presence of decomposing organic matter, favor the development and activity of the cholera germ. Heavy and constant rains have, on the contrary, been observed to retard its development. Our late epidemic commenced in February, and continued to increase until the first of June, when it rapidly declined. By referring to the meteorological reports of the Board of Health, it will be observed that during the months of January, February, March and April, we had only occasional and moderate rains, but that in May we had unusually heavy and frequent rains, after which the cholera rapidly subsided. As excessive moisture retards organic decomposition, may it not be that heavy and frequent rains, by washing the air of its ammonia and checking its farther development, thus removes the condition most favorable for the development and activity of the cholera germs. When cholera prevails in large cities, it has been frequently observed to be principally confined to certain districts, certain streets, or even to certain houses, thus proving the existence of local causes favorable to the development of the disease. The poor are most frequently and most severely attacked because they, on account of their poverty, inhabit the least desirable localities, and live in low, ill-ventilated houses, or in large densely-populated tenements, and have around them the foul gutters, foul privies, and a want of cleanliness generally. Amongst predisposing causes may be ranked purgative medicines, impure air, foul water, or water impregnated with certain salts, and unwholesome food. Bad hygienic conditions may increase the susceptibility of a whole people. The negroes are much more liable to the disease than the whites, and this may be owing in a great measure to their irregular habits of life; though they constitute only a fourth of the population of our city, they suffered an equal mortality with the whites in our late epidemic.

The germs of cholera may be disseminated in various ways—through the water used for drinking purposes, through personal intercourse by means of fomites, or through the air in the form of an impalpable powder—but the disease has been known to advance by routes not those most frequently traveled, and in directions contrary to the prevailing winds, even the trade winds.

This disease is generally regarded as both infectious and contagious, though during our late epidemic I saw little or no evidence of contagiousness, having seldom had more than one case in the same house.

In the treatment of this disease we must be governed by the stage of its progress. If we see the patient during the initiatory diarrhœa or cholerine, we give decided doses of opium, and thus so blunt the nervous centres controlling the alimentary canal that the cholera poison is quietly eliminated, without that enormous diffusion of fluids and solids from the vascular system into the gastro-intestinal canal. We thus prevent all those secondary changes in the blood from which death, when it occurs, usually results.

Bromide of potassium has been highly recommended in the treatment of cholera. It undoubtedly owes its virtue, if it has any, to its sedative action on the nervous system, and is applicable, like opium, only to the first stage of the disease. Chloroform has been used with success during this stage, and acts in the same way. I would suggest the hypodermic administration of carbolic acid, on the ground of its anti-fermentative action. Chlorine has been used on the same ground. (I would here remark that it has been fully demonstrated by Drs. Lœber and Shepard, two worthy members of the Association, that carbolic acid, in proper doses sufficiently diluted, may be thus administered with impunity, they having thus used it with the happiest results in the treatment of malarial intermittents which had strenuously resisted the usual treatment by quinine, arsenic, &c.) But none of these remedies should be used to the exclusion of opium, in the first stage of cholera. To continue to give large doses of opium after collapse is established would but add fuel to the flame. We now resort entirely to restorative measures, to external and internal stimulants. We give iced champagne, give atropia hypodermically, use dry frictions and dry heat, give the blandest nourishment, such as iced milk and lime-water, iced beef-tea, &c., and treat the intestinal catarrh with bismuth, small doses of opium, and demulcent drinks. Water may be injected per rectum with some benefit.

Very many remedies have been tried on theoretic grounds and abandoned for want of success. Galvanism has been used—even acupuncture of the heart. Intra-vascular injection of a solution of the salts of soda has been tried, and though reaction has been thus fully established, vomiting and purging usually returned with increased violence, and patients finally succumbed: of 156 patients thus treated at the Drummond Street Hospital, Edinburg, only 25 recovered.

Dr. Edward M. Hodden, of Toronto, Canada, writes to the editor of the *London Practitioner* that he has tried the intra-vascular injection of cow's milk, two out of three patients recovering. The treatment by intra-vascular injections, combined with other measures, surely deserves farther trial.

Sulphuric acid lemonade has been very highly recommended as a prophylactic against this disease; a half drachm of the dilute acid should be thus taken once or twice daily. A correspondent of the *British Medical Journal* writes that he has used it under such circumstances during an epidemic at Belfast, that he can not doubt its prophylactic powers. He also recommends that drinking water should be heated to the boiling point before being used, attributing the immunity of the Chinese from the severe ravages of cholera to the fact that they cook their drinking water and flavor it with tea.

Much might be done by municipal authorities towards preventing, abbreviating, or rendering milder, epidemics of this as well as other zymotic diseases. It should be required that houses should be so constructed as to insure proper ventilation. Cleanliness should be enforced by a board of inspectors; yards and streets should be kept clean of all putrescible matters; gutters and sewers should be washed and disinfected; privies especially should be frequently cleaned and disinfected; and lastly, but not leastly, it should be seen that the poor are provided with sufficient wholesome food, and that their supply of *water* is *abundant* and *pure*.

Dr. Stone inquired as to the method of treating traumatic or idiopathic empyema. His treatment had been by making a free incision into the pleura; generally trephined a rib in order to make sufficient space for the flow of pus. If the rib is not trephined, the side in collapsing allows the ribs to fall so closely together that the blade of a knife can hardly be insinuated between them. Used pure compound tincture of iodine as an injection into the pleural cavity. The lung generally expanded, especially when the operation was performed early.

Related the following case:

A man was stabbed in the left side near the nipple, with a penknife; did not complain for a day or two. Hemorrhage took place into the pleural cavity. Inflammation set up; pleura much distended; heart pressed to the right. Operated on the eighth day. Made an incision; trephined a rib; let out of the cavity at least two quarts of pus and clotted blood. Injected pure compound tincture of iodine. The patient recovered and lung expanded. See him frequently; there is no deformity.

Dr. Watkins related a case of traumatic empyema. A colored man, of fine physique, was shot in the posterior region of the thorax, left side, between the eighth and ninth ribs. Saw him immediately after the accident. Pulse feeble; evidence of approaching collapse; he rallied, however; on percussion, found dulness over lower lobe of left lung. Dulness increased until two-thirds of the space occupied by left lung was flat. Auscultation revealed the fact that the lung was in a compressed state, and the pleural cavity distended with fluid. A little circumscribed pneumonia occurred, and probably at the point where the ball penetrated the lung. Hectic fever set up; the "sweetish" breath was a prominent symptom. At Dr. Hawthorn's suggestion a trocar was introduced at the point where the ball penetrated. Let out about eight ounces of dark fœtid pus; the fluid ceased to run through the canula and it was withdrawn. An incision was then made to the extent of three inches; removed about half a gallon of clotted blood and pus; injected the cavity with a solution of carbolic acid and water (ʒi to Oj). Case progressed favorably. Had difficulty in introducing the nozzle of the syringe after the third day, and felt certain that had the rib been trephined according to Dr. Stone's suggestion, the case would have recovered sooner. There is still a fistula, but the man is regaining his strength rapidly, and is at work. The lung has greatly expanded. Thinks the introduction of air into the pleural cavity in such cases is unavoidable, and is confident it does little or no harm.

Dr. LeMonnier advised free incisions in such cases, but would make two instead of one, and pass a drainage tube. However, where the pus was thin and healthy, would use the aspirator. Saw a case operated on; aspirator used twice; complete recovery. Would use the aspirator in pleuritis whenever the amount of fluid was sufficient to distend the chest wall or interfere with respiration.

Dr. Watkins related a case in which he had used the aspirator with success. A German boy, while coming to this country, accidentally stabbed himself in left side, above the nipple, with the knife used on board the ship for cutting bread. Hemorrhage, both externally and internally, took place—the external wound healed. Saw him about the tenth day after the accident. He was æmemic; had hectic fever and sweetish breath. The whole left side, except at the apex of the lung, was dull on percussion; no respiration over the dull portion. Introduced the needle about an inch below the lower angle of the scapula; drew off about a quart of dark wine-colored serum. The lung commenced expanding immediately, and noticed in twenty-four hours there was respiratory murmur over the whole lung, except in a small portion of lower lobe. The fever is disappearing, and the boy is now looking well and is regaining flesh.

√ *Case of Hair Pin in Bladder with Stone.* By Warren Stone, M.D.

About two years ago I was called by my friend Dr. Jno. Carter, of this city, to assist him in the management of this rather curious case. The doctor had been consulted several days before by the patient, a young girl aged 18 years, with symptoms of stone in the bladder and vesico-vaginal fistula. An examination revealed quite a large stone in the bladder, and on introducing the finger into the vagina, there was found protruding into it from the bladder about half an inch of the prong of a full-sized hair pin, the other resting in the bladder, constituting the nucleus around which the calculus had formed.

The girl and her family accounted for the presence of the hair pin in this singular locality in the following manner.

About ten months before, the patient, while combing her hair, had placed three hair pins in her mouth for convenience sake, and thus engaged was suddenly startled by an alarm of fire. In the fright two of the pins dropped to the floor, and the third one was swallowed. As soon as the excitement produced by the fire had subsided, she immediately informed her mother of the accident which had befallen her, and at once active purgatives were given with a view to rid her of the pin.

No further complaints being made, they rested easy on the subject, and nothing further was done until she presented herself to Dr. Carter, although she began to experience vesical trouble about four months after the accident, but from motives of delicacy kept it secret until urine began to dribble per vaginam.

When I arrived the doctor had her completely under chloroform, and had dilated the urethra to its fullest extent—so far, in fact, that an ordinary anal speculum could be introduced with facility. By means of an appropriate pair of forceps the stone, which was comparatively soft, composed principally of the phosphates, was broken up and taken away by piecemeal. We tried in various ways to push the prong resting on the vagina back into the bladder, so as to be able to extract it by the urethra and avoid any laceration, but without avail. As soon as the vesical prong had been thoroughly denuded of its incrustation, the vaginal end was seized with a pair of strong forceps, and without much difficulty the whole pin was removed. The bladder was thoroughly syringed twice a day with tepid water for a week, when it ceased to be necessary. The urethra and neck of the bladder contracted down with remarkable rapidity, and in a very short while perfect control of the bladder was reëstablished. The vesico-vaginal fistula healed without any trouble under one application of lunar caustic, the patient being kept, as far as practicable, in such a position as to prevent urine from falling into it. No catheter was used at all. In two weeks from the day we operated the girl was at the wash tub perfectly well, and has so continued to this day.

History of a case of Sewing Needle Lodged in Urethra—Removal. By Warren Stone, M.D.

About eighteen months ago a young man, aged about twenty-seven years, applied to me for relief, giving the following brief history.

When he was, as far as he could remember, about 7 or 8 years of age, he one day inserted into his urethra a large-sized sewing needle, which he had filched from his mother's work basket for the purpose of trying the experiment. Considerable pain and some little hemorrhage ensued—the one he bore with silent fortitude, the other concealed for fear of being severely punished by his parents.

The next day he felt no inconvenience save a slight scalding sensation in passing urine, which soon disappeared, and with it all thought of his boyish imprudence. Having reached manhood various symptoms of urethral trouble returned, and he applied for surgical aid in different places. He stated that at no time had anything been done towards relieving him, as his story was either totally disbelieved or he was dismissed with the assurance that the needle had or would make an appearance itself. He seemed so positive as to his distinct recollection of the circumstance of introducing the needle, and so eager to have his affected organ in a perfect state, that I undertook to investigate thoroughly. The inconvenience he was suffering from at the time I saw him was not excessive. He would urinate not quite as freely as natural, suffered somewhat when the organ became violently erect, and was unable to endure rough riding on horseback or for any length of time. These were the only symptoms given. I passed in very carefully as large a sized metallic bougie as the meatus would accommodate, and on reaching the bulb very distinctly felt the point of my instrument strike against what felt and sounded like a calculus. The bougie was immediately withdrawn, and the next day I operated for the removal of the foreign body. It was situated so far back, and had rested there such a length of time, that I was doubtful as to succeeding with the forceps alone, and at once determined to seek for it through the perineum. A large metallic bougie was passed in until it touched the anterior extremity of the needle, and there firmly held, an incision through the median line was made exposing the urethra, through which could be felt the point of the offending body resting against the bougie. A slight stab was made in the urethra so as to accommodate the size of the needle, which had been somewhat increased by urinary deposits, thus avoiding laceration, and in a few seconds the needle entire was extracted.

The patient suffered no after consequences, and returned to his home in Texas in a few days.

Dr. Watkins reported a case of hydrophobia, prefacing it with a few remarks; as follows:

In the *New Orleans Medical Journal* for November I noticed an article, taken from the *Medical Record*, entitled "A New Remedy for the Prevention of Hydrophobia after inoculation." The writer, Dr. Marmon, argues that the timely application of carbolic acid to the wound prevented infection and the future appearance of this dreadful disease. We are perfectly aware that all persons bitten by rabid animals do not take hydrophobia; the reason being that the virus of the animal is exhausted by having bitten several men or animals, or the infectious saliva has been wiped from the teeth by the clothing of the subject. Sometimes the hemorrhage is so profuse that there is great probability that the virus is washed from the wound by the blood. Vaccination is frequently unsuccessful from the same cause. Again, we know that an hour is more than sufficient time for the virus to be absorbed, consequently the application of carbolic acid to the wound may have proved a positive injury by retarding the healing process.

My reasons for making these remarks are based upon my experience in the treatment of two subjects bitten by a rabid dog.

On the 12th of July, 1870, two negro children were bitten by a rabid dog. I will, for convenience, designate the children as A. and B. A. was aged nine years; B. was eleven years old. They were playing on the sidewalk when the dog came up and bit A. on the calf of the leg. B. was bitten on the leg a moment after. The wound caused on her leg was large and bled freely.

The mother was greatly alarmed on account of the hemorrhage and sent for me immediately. But 15 minutes had elapsed before I saw the child. I stopped the hemorrhage, and having procured some tincture of iodine from the nearest drug store, made a complete circle around the wound by injecting two minims of the tincture every quarter of an inch, the operation being performed with my hypodermic syringe. The result was a slough of the whole tissue within the circle. The wound granulated and healed, leaving a comparatively small cicatrix. The child has never experienced any unpleasant sensations in the scar since it healed, and is, at present writing, well.

The wound on the leg of A. was so trivial that the mother did not think it worth while calling me to see her, and literally treated the wound with "the hair of the dog."

The following is the report I made of the case: Was called to see "A.," a negro girl, aged nine years, on Sunday morning, August 28th, 1870. Found her exceedingly nervous, with a great desire to cover up her head. She seemed to shun all excitement, and wished to be kept from the light. The mother of the child stated that she had been moping about the house for two or three days, but she did not think she was seriously ill until Sunday morning, when, giving her a cup of coffee, she noticed that she made grimaces and was unable to drink it. Knowing that she had been bitten by a mad dog about six weeks before, she became alarmed and sent for me.

On removing the sheet from the head of the little sufferer she became greatly excited; and her face bore the aspect of terror. Viscid saliva was hanging from her mouth, and occasionally she would endeavor to remove the tough mucous from her throat, making a hoarse noise which the neighbors at once decided was like the bark of a dog.

She held out her hands when I bade her good morning. I asked her if she wished some water. She replied yes. I poured some in a cup, and she held out her hand with great eagerness for it; but, with all the force of will she could command, was unable to drink it. The instant the cup touched her lips she became convulsed. The convulsion lasted some minutes. The respiration during the convulsion was of a sighing character, being interrupted by contractions of the diaphragm.

On questioning her about pain, she would point to her throat and say she was choking. She was not at all delirious, and would answer questions satisfactorily. She was not afraid of water, and would try faithfully to drink it, but on every occasion when the cup touched her lips she became convulsed. A breath of air blown upon her would cause a convulsion, and pouring water from one vessel to another would cause her to crouch to the extreme corner of the bed.

I called Dr. S. S. Herrick in consultation, and we administered by enema twenty grains of chloral hydrate and ten minims of laudanum every hour; also injections of beef-tea and brandy. We left her at 12 m. I saw her again at 4 p. m. She had rested some, and had retained the enemas. She was not as much frightened as she had been in the morning, and was able to allow the water to touch her lips without convulsion, but was unable to swallow a drop.

At 6 p. m. I visited her again; she was more quiet, but her temperature was considerably elevated, the thermometer in axilla showing an elevation to °103 5′. Her skin was moist. She swallowed a teaspoonful of water. Continued treatment. She became rapidly exhausted during the night; had several convulsions, and died at 2 a. m. August 29th. Decomposition set up very rapidly after death.

Two facts I would draw your attention to: 1st, the complete encircling of the wound by the hypodermic injection of tincture of iodine, thereby cutting off all chance of absorption of the virus into the general system, in one case; and, 2d, to the soothing effects of chloral in hydrophobia.

CLINICAL REPORTS.

Traumatic Tetanus Successfully Treated by Chloral Hydrate. By J. Dell'Orto, M.D., New Orleans.

MR. EDITOR:—

Will you have the kindness to allow me a small space in your instructive Journal for this relation of a case of traumatic tetanus which has lately occurred in my practice, and has been successfully treated by the chloral hydrate, and for some remarks which I make free to offer upon the subject?

I have no pretension to originality as to the treatment, in contributing this additional item to the list of many cases of successful recovery already published, but hope it will prove useful as well as encouraging to other physicians.

There is perhaps no disease upon which more has been written, and for which more remedies have been recommended and tried, than tetanus. A single case of recovery, a single case of success, is often deemed sufficient matter for a pamphlet, and from it practitioners are led to use the remedy thus extolled, only to meet with failure and disappointment, which results are generally never recorded. So it was with worara, calabar bean, opium, tobacco, belladonna, ammonia, atropia, Indian hemp, chloroform, tartar emetic, bromide of potassium, and with thousands of other preparations either recommended by men of science or vaunted by empirics. In the course of my professional career in different countries and in different climates, it has been my misfortune to have seen and treated many cases of tetanus, and to have heretofore met with uniformly discouraging results. In every new case which came under my observation a new method of treatment was adopted, and in every one the final result was the same—death!

A want was long felt in medicine for some therapeutical agent which could diminish the severity of the seizures of this dreadful disease, and, by rendering them less frequent, afford the patient rest and sleep without causing the injurious, stupefying and nauseating effects of opium. Such a remedy seems to be hydrate of chloral. According to the experiments made during the latter part of 1869 by Liebreich in Berlin, Richardson in London, Dumas, Dieulafoy, Krishober, Demarquay, Bouchut, M. Léon Labbé, Giraldès, Personne, in France, and Peyraud in Italy, it was admitted that hydrate of chloral, as a sedative of general nervous irritability, was in every respect superior to opium, and that its action on the system was antagonistic to strychnine. It was consequently anticipated that it would prove an invaluable auxiliary in cases of nervous symptoms of a traumatic source.

It was in January, 1870, that the application of this remedy to the treatment of traumatic tetanus was commenced in Europe, and Drs. Leibreich and Verneuil were the first who used it successfully, Dr. Verneuil's case occurring in the Lariboisière Hospital of Paris, where the patient recovered in less than four weeks, having taken daily from one and a half to three drachms of chloral. This case was the subject of a notice presented to the French Academy of Sciences in February, 1870. M. Nélaton, who happened to be present at that meeting, seemed to be incredulous, and not well satisfied, and intimated that a single case had hardly any weight, and that the author should have waited farther confirmation. A few weeks had not elapsed before a new case was admitted in the same hospital, and had a quick recovery by the administration of chloral, while farther experiments were being continued in other countries, and its satisfactory results made public in the medical annals, from which I quote the most remarkable and interesting.

In the months of January and March, 1870, in the Royal Berkshire Hospital, Reading, England, two cases were recorded, in which physicians, uncertain as yet of the remedy, had administered it together with calabar bean. Though the first case died in consequence of accidental hemorrhage from a vein near the wound, which had been laid open by sloughing, the second recovered, and in both great relief was afforded by the use of chloral.

Alexander Ballantyne, M.D., at Edinburgh, in April of the same year, administered this remedy in a very severe case of traumatic tetanus, which recovered after four weeks' treatment, the patient having taken an average of two to two and a half drachms per diem.

At the Northern Hospital of London, in June, 1870, another case of tetanus rapidly recovered under the treatment of chloral, by Mr. Spencer Watson.

In September, 1870, a patient of George Thompson, London, recovered in five weeks, having taken from 60 to 120 grains a day of chloral.

In January, 1871, a shepherd was treated with chloral at the Huntington Hospital, in Mr. Foster's practice, and recovered after forty-eight days of treatment.

Dr. Dorigo publishes in the *Gazetta Medica di Padova*, of December, 1870, a case of a boy of thirteen, in which tetanus supervened a few days after having been wounded in the foot. He was treated with chloral, of which he took about 90 grains a day. The recovery was complete on the 54th day of treatment. Dr. Grandisso Silvestri relates in the same paper a case of a girl who had tetanus in consequence of a lacerated wound of the middle finger of her left hand. She rapidly recovered, after having taken half an ounce of chloral in five days.

Dr. Bensasson, from Tunis, reported to the *Imparziale*, of Florence, another result in a case of a boy of thirteen, in whose instance tetanus occurred a few days after having stepped on a nail. The treatment lasted 35 days. The quantity of chloral administered was about five ounces.

Dr. C. Macnamara, one of the most distinguished physicians in India, Surgeon to the Native and Eye Hospitals of Calcutta, writes to the *London Practitioner*, that the entire number of cases of tetanus coming into his wards from June, 1871, to June, 1872, were twenty, of which no less than *seventeen* recovered, under the sole treatment of chloral. In all these cases the treatment lasted from twenty-five to forty days.

In December, 1871, two cases of tetanus were admitted in St. Thomas' Hospital, London, under the care of Mr. Croft. One, a boy of fourteen, had, thirteen days previous to the symptoms of tetanus, the outer border of his left forearm cut across the wrist; the other, a girl of nine, had scalded herself with warm water, and injured both thighs and knees—tetanus supervened fourteen days after. Both cases recovered with the regular use of chloral; the first after the 26th day, the second after the 38th.

Encouraged by so many reliable facts, which I had been following with great interest and anxiety during the last four years, and satisfied with such happy results—really unprecedented in the annals of tetanus—I made up my mind to give the hydrate of chloral a trial in my next case, and it was not long before such a one came under my personal observation, with the following history.

Margaret D., a native of Italy, newly arrived in this city, of a strong and sanguine constitution, on the 29th of June last was pricked in her right foot by a thorn, which she took off, giving it no farther attention. She was well for several days, and as the atmospheric temperature of that time was very hot, she habitually took cold baths two or three times a day, when in profuse perspiration. On the morning of the 15th of July, she awoke with a feeling of rigidity of the whole body, but especially of the neck. Considering this was only the effect of a cold she had contracted, she went to her work of cook. On the night of the 17th, (nineteen days after the accident,) I saw her for the first time, presenting the following symptoms: all the muscles of her face in a state of tension; *risus sardonicus* very remarkable; pulse 100; perspiration free; temperature of the skin very hot; tongue coated; thirst. I prescribed that same night one grain of tartar emetic with twelve of ipecac, which caused emesis of a bilious character and afforded ease of the general symptoms.

18th. It was about midday when I made my second visit. I immediately commenced the treatment with the hydrate of chloral given in the following mixture, chloral ʒj, aq. ℥j, syrup tolu ℥ss: to take one teaspoonful every two hours—about ten grains at a time.

In the evening seeing no improvement I doubled the dose—two teaspoonfuls every two or three hours.

19th. She has been taking the remedy regularly all day and night without any improvement.

20th. Continued the medicine. Spasms are not so painful as day before. She had a good three hours' sleep during the night.

21st. A little better. Pulse and temperature of the body the same; perspiration free. Her bowels have been costive for several days. Prescribed podophyllin grs. ii, calomel gr. vi—to be taken in two doses. Stopped the chloral until next day.

22d—8 a. m. The purgative effect of the powders was satisfactory. Though all muscles of the face are still contracted, the woman feels easier; she can swallow better. The draught was repeated at the same dose of 20 grains at a time every four hours.

12 m. The weather is changeable; the temperature of the atmosphere, which was excessively warm in the morning, turned disagreeably cold and damp at midday; a great storm threatening.

2 p. m. Rain pours down by buckets.

3 p. m. While she was observing herself in a looking-glass which her husband had put before her, and was trying to open her mouth, she was suddenly seized by a very severe attack. during which I happened to be present. The muscles of the whole body are contracted, and she has bitten her tongue; head drawn back on the pillow; arms extended; inferior extremities drawn toward the trunk; *risus sardonicus* more marked than ever; face flushed; skin moist and very warm; pulse 100; general anxiety and distressful pains. Seeing that it was impossible to make her swallow a single drop of water, I injected by the rectum 30 grains of chloral. The injection was kept, and the relief was immediate.

During the night the enema was repeated with the same dose of chloral.

23d—8 a. m. She does not suffer so much though the spasms still continue. Seeing the patient still unable to swallow I had the enemata repeated.

12 m. The day being fine and warm, I ordered a general warm bath (96° F.).

3 p. m. She had a good sleep after the bath. Trismus and *risus sardonicus* have disappeared, but the muscles of the neck and back are still in a spasmodic state; it seems that the disease is *moving* down to the thorax and limbs. Menstruation has appeared in abundance. She can open her mouth and swallow the medicine, from which she acknowledges that she experiences good effects. Since this day I ordered the following diet, which was continued during the whole treatment: iced milk, iced broth, and iced water mixed with a little good wine, to be taken according to her will and taste. I let the room be well ventilated and her body lightly covered, only recommending the nurse to notice the slightest change in the weather, and to cover her a little more, and to shut the windows if needs be.

24th, 25th, 26th. Chloral taken all these days in the same doses at the intervals of four hours. The rest produced by the remedy is charming; the patient asks for it every time she feels the approach of the symptoms.

27th. She has passed a very good night, and has slept several hours. Menstruation continues freely and plentifully. Chloral taken every six hours.

28th. Her face is always flushed and the conjunctiva injected. She feels very thirsty. Pulse 100. Bowels costive. Ordered tamarind and cream of tartar drink—no chloral.

29th. She was purged well all night, during which she ordered herself three doses of chloral on account of feeling the spasms coming back.

A general warm bath at midday. Only 20 grains of chloral in the 24 hours.

30th. Spasms are few and daily decreasing. Repeated chloral, but every six hours.

31st. She passed a good night; she feels hungry, and can swallow a great deal better. No spasm in 24 hours. Ordered to take the draught only every eight hours, but the patient begs me to let her feel free to take it any time she feels a spasm coming.

Thus did the case progress until the 4th of August, on which day I noticed a rash all over her body, that soon disappeared after a full warm which bath she took in the afternoon.

6th. The night of the 5th was very bad and restless, on account of the sudden change of the weather; the muscles of the abdomen and back are stiff and extended, the legs contracted and very painful. Ordered chloral to be taken every four hours, with the following liniment: ol. camph. ʒvi, tinct. cajeput ℥ii, tinct. op. et ammon. liquid aa ℥i.

8th, 9th, 10th. From this time she steadily improved, the spasmodic seizures diminished in force and frequency; pulse came down to 90; chloral every six or eight hours.

11th. Another general warm bath; chloral only once in 24 hours.

From the 12th to the 19th no spasms were noticed; she could move her legs and arms, but the back and neck were still extended. Chloral taken once or twice in the 24 hours.

20th—the 35th day of the disease—4 p. m. While I was making my evening visit she was seized with muscular spasms of the right leg, so severe as to make her scream and cry. I administered 20 grains of chloral, and ordered to have the same dose repeated every three hours. She had 60 grains in nine hours, after which doses the spasms disappeared.

24th. She could get up and eat small pieces of meat.

On the 27th the chloral was abandoned, and I left my patient convalescent and free from all traces of tetanus.

The quantity of chloral taken from the 18th of July to the 26th of August amounted to four ounces and a half.

A few days after, menstruation appeared better than at any time during her life.

One month later she had a tetanic spasm affecting the muscles of the plantar surface of the right foot, which passed away with out any medicine.

She is now working and doing perfectly well.

In conclusion, let us draw our attention to the following facts, which are worthy of notice in this case.

1st. General warm baths have contributed a great deal to the success, and I firmly believe that physicians ought never to neglect them in the treatment of tetanus, and should have them repeated as often as possible.

2d. The diet, which consisted of only liquid *iced* nourishment, continued over thirty days, seemed to agree better than the common practice I have seen in this city of filling the stomachs of the patients (even in yellow fever) with large quantities of warm drinks, and keeping them oppressed and almost suffocated under blankets in order to maintain free perspiration. In this case the skin has been moist and warm all the time, in spite of light covering and cold drinks, the use of which, taken in small draughts, proved once more the truth of the old saying, that by them *motus vitales extra vergunt.*

3d. The administration of large doses of chloral by rectum, while deglutition is impossible, is an invaluable and sure way of exhibition.

4th. The remedy must be continued until the spasms have completely disappeared, and must be repeated more or less frequently, according to the severity and frequency of the tetanic seizures.

5th. During the whole period of exhibition of the chloral, the conjunctiva was injected and the face flushed, and a remarkable eruption broke out in several parts of the body. These facts were observed by other practitioners, especially by Dr. Saunders, who has made a great use of chloral in the Lunatic Asylum of Devon County, England, and compares this rash to scarlet fever.

Were these facts, together with the abundance of menstruation, produced by chloral? How does it act on the blood? Is it a blood poison? How far and under what circumstances does it become so? Will chloral prove as beneficial and useful in idiopathic and acute traumatic tetanus as it has in the cases I have related, which were all of chronic nature?

These are problems which only time, and farther observations and experiments can solve.

Apologizing for this lengthy and detailed account of my case, which I thought necessary to present under this form, I hope, Mr. Editor, you will have no cause for regretting the kind hospitality you have granted to this communication.

J. DELL'ORTO, M.D.

New Orleans, December 16th, 1873.

Possibility of Predicting the Sex of the Fœtus in Utero by the Number of its Cardiac Pulsations. By Thomas Layton, M.D., New Orleans.

In *Joulin's "Traité Complet d'Accouchements,"* pages 412–413, mention is made of the possibility of such prediction in pretty much the following terms: "*Frankenhauser* believes that, on an average, the contractions of the male heart are less frequent than those of the female. He says that in 50 cases he was able to predict the sex of the child three months before birth. In these 52 cases there were 22 boys and 28 girls. The number of pulsations was, on an average, 124 for males and 144 for females. Auscultation should be practiced, *in each case*, several times before labor sets in, the contractions interfering so much with fœtal circulation as to render the number of pulsations unreliable, for the purposes of diagnosis, when counted during contractions.

"*Devilliers*, repeating Frankenhauser's experiments, also examined 50 cases. He found an average of 132 pulsations for the male, and 138 for the female. The difference is much less marked than that furnished by Frankenhauser's statement, and it is evident that on this account there must be a much greater liability to error, which Devilliers admits to have been the case several times. He believes that the difference in the number of beats depends upon the volume of the fœtus, independently of its sex. Strong and large children would offer a smaller number of pulsations than feeble and small ones, and as, in general, the female fœtus is smaller than the male, so the female heart will be found to pulsate more rapidly than the male."

In the June (1873) number of the *Richmond and Louisville Medical Journal*, there appeared, at page 673, an analysis of an article by T. J. Hutton, M.D., which appeared in the *New York Medical Journal*. I have been unable to see the original publication, but the analysis states that from the history of seven cases observed, Dr. Hutton believes in the possibility of predicting the sex of the fœtus. He says: "When the fœtal pulsations number 144 per minute, it is a female; 124 per minute, male."

For some time past I have been occupied in the investigation of this subject, and during the present winter I have been kindly assisted in my researches by Mr. George K. Pratt, Resident Student at the Charity Hospital, in this city.

My personal experience in this matter is based upon the observation of 59 cases, up to this date (January 31st, 1874). Making allowance for certain causes of error, and attaching great importance to counting each heart several times, and striking an average before coming to an opinion, I believe I may safely say, the difference in the number of male and female pulsations affords us a means of predicting the sex of the child.

I have found the average number of pulsations of the male heart to be 129, and the average for the female to be 142. My observations, in this respect, somewhat approach the results mentioned by Frankenhauser, as to the difference between the male and female heart.

In the 59 cases observed by me the results have been as follows:

Total Number of Cases.	Number of Cases successfully diagnosed.	Unsuccessful results admitted.	Cases in which the want of success was due to some *evident* cause, and which, therefore, are not considered as affecting the rule.
59	41	8	10

These figures are sufficiently striking to attract attention. They derive additional value from the analysis of the ten cases in which the want of success is stated to be attributed to *evident causes.* These ten cases are therefore ruled out, as proving nothing against the law sought to be established.

The *evident causes* were as follows:

1 case, counted during puerperal convulsions.

3 cases; child found, at birth, to have one or more coils of the cord around the neck or other part of the body.

2 cases; counted during labor.

2 cases; counted during evident illness of fœtus, resulting in its death before expulsion, or causing its birth in a state of marasmus, from which it speedily died.

1 case; in which a loud and PERSISTENT fœtal souffle was heard, although here the cord was not coiled around any fœtal part at the moment of birth.

1 case; in which the placenta had undergone extensive fatty degeneration.

—

10 cases.

At present every heart, which, upon taking the average of a certain number of observations, I find to beat *not over* 130 *times*, I set down as being that of a *male.* In the same manner, every heart which I find to beat 136 *times and upwards*, I consider as being that of a female; and when perfectly satisfied that I have been attentive to the observance of all necessary precautions, I have but little hesitation in openly predicting the sex of the child. Experience has, however, taught me that there appears to be a certain zone of pulsations, so to say, in which the making of a diagnosis is not unattended with risk. I allude to the cases in which the heart is found to beat from 130 to about 136 times. I have several times been deceived in such cases, and I deem it prudent to abstain, under these circumstances, from making a public diagnosis, especially in families where the sex of an expected child appears not to be a matter of indifference.

That there are *certain causes* capable of influencing fœtal pulsations, to a degree sufficient to render these pulsations useless to us as a means of diagnosis of sex, no one will deny; and inspection of the causes which induced me to eliminate the results in the ten cases mentioned above will give an idea of their varied nature. Basing my faith upon the foregoing remarks and observations, I confess to being a believer in the possibility of making a *scientific prediction* of the sex of the child.

It may be interesting to add, that in one of the cases in which the prediction was successful, the woman was pregnant of twins; and this fact was not only ascertained beforehand, but it was diagnosed, and correctly, that the children were not of the same sex.

Malarial Hæmaturia..

Dr. O. L. Williams, of Nelsonville, Austin County, Texas, sends us a very interesting paper on Malarial Hæmaturia, of which we regret we have room in this number for only an abstract. Both the persons whose cases Dr. Williams reports recovered from an extreme condition, and the doctor states that he has never lost a single patient from this disease in his practice. His conceptions of the nature of the affection and of the prime indications in treatement are clear, intelligent and simple, and his treatment, deduced therefrom, philosophical and to the point. He regards the attack (with concomitant symptoms—hæmaturia, jaundice, &c.) as the result of antecedent injury to the blood by malaria, and comprehends the importance of relieving the overburdened kidneys as much as possible of the discharge of their function, while he fortifies against another paroxysm by the free administration of quinine. In carrying out these requirements, he says: "As we have in the disease in question the kidneys violently congested, all diuretics should be excluded from the treatment." And further: "I religiously eschew mercury for the reasons given above." That the quality of the blood being already much lowered, all measures calculated to impair it should be abstained from. And then: "I believe the sheet-anchor, in the treatment of this disease, consists in the persistent relaxation of the entire capillary system by means of hot mustard baths, repeated every hour or two, using at the same time steam around the body, by wrapping corn boiled in the shuck in cloths and applying it under the bed-clothes from head to foot. After moisture on the surface is once induced, I have experienced very little trouble in rendering it permanent by means of *heated corn* as used above."

"Equally important, however, do I regard the application of a large mustard plaster over the kidneys, and retaining it there until the skin is thoroughly reddened; this followed by a 'mush' poultice applied as hot as can be borne, and continued for twenty-four hours after the urine shows no trace of blood. I likewise use large, hot poultices over the bowels, continued throughout the disease."

"The medicines on which I most rely are sulphate of magnesia, tinct. chlorid. ferri, and tinct. gelseminum in solution, and quinine and Dover's powder—prescriptions as follow:

℞—Magnesia sulph., one tumblerful,
Tr. chlorid. ferri,
Tr. Gelsiminii, aa ℥i.
Ϻ S. Tablespoonful every two hours.

℞—Quin. sulph, gr. v.
Pulv. Doveri, gr. iii.
Ϻ. S. Take every two hours until thorough cinchonism is induced.

Treatment of Delirium Tremens. By J. Chandler, M.D., Memphis, Tenn.

Having used the following prescription several times with results so remarkable, as compared with the ordinary treatment, I am induced to publish it, confident that others will derive great satisfaction from its employment.

℞—Potassii bromidi, ℥ss,
Tinct. capsici, ℥iv,
Tinct. digitalis, ℥ss,
Aqua ad., - ℥viii.

M. S. One to two tablespoonsful in half a glass of water, pro re natâ.

This will relieve vomiting, compose the nerves, and dispose to sleep.

If the bowels are not already free, give liq. magnesiæ citratis to produce free purgation, continuing the mixture as circumstances require.

NOTICES OF NEW BOOKS.

A Handbook of the Theory and Practice of Medicine. By Frederick T. Roberts, M.D., B. Sc., M.R.C.P., Assistant Physician and Assistant Teacher of Clinical Medicine at University College Hospital, &c. 8vo., pp. 1052. Philadelphia: Lindsay & Blakiston; 1874.

In his preface the author states: "This work is intended mainly for the use of students, and its object is to present in one volume such information with regard to the principles and practice of medicine, as shall be sufficient not only to enable them to prepare for the various examinations which they may have to undergo, but also to guide them in acquiring that clinical knowledge which can alone properly fit them for assuming the active duties of their profession. It is hoped, however, that its contents may be found of some service to those who are already busily engaged in general practice, and who have but few opportunities for the perusal of the larger treatises or of the various special monographs."

The work is divided into three sections, and subdivided into ninety-five chapters altogether. The first section contains an introductory chapter, another on Causation of Disease, and a third on Symptomatology. The second section contains seven chapters, devoted respectively to Hyperæmia, or Congestion; Dropsy; Hæmorrhage; Inflammation; Hypertrophy; Atrophy; Degenerations; Fever, or Pyrexia. Section third treats of special maladies, in two parts. Part I. includes General Diseases; Part II., Local Diseases.

The first chapter is introductory to the work, and contains some brief remarks on the proper mode of pursuing the study of practical medicine, with directions for the clinical examination of cases in actual practice. These are both clear and pertinent.

The second chapter is occupied with general remarks on Ætiology, which are condensed within the compass of nine pages. These we consider generally well chosen, but were not aware that the following congenital defects were "usually considered hereditary," viz: "physical deformities, as well as deficiencies in connection with the special senses, such as blindness or deafness." Speaking of sewage, he remarks: "This is a very common source of disease, on account of the deleterious gases given off from it, as well as the decomposing organic matter," &c. This strikes us as tautology, for we do not comprehend how the organic matter would become noxious otherwise than through the gases generated by chemical decomposition. In speaking of certain special causes of disease; he says: "Decomposing vegetable matter often does much harm. It is especially injurious by producing malarial or miasmatic poisons, so prevalent in marshy districts. These give rise particularly to certain peculiar fevers—ague, yellow fever, &c." This, standing by itself, would seem to ignore the cryptogamic theory of the origin of periodic fevers; but in Chapter XI., on Malarial or Paludal Fevers, he remarks, on the nature of Malaria, "the most favored view is that it is organic, consisting either of microscopic plants or their spores, or animalcules." To harmonize these two statements, we must suppose the microscopic plants to be in a state of decomposition, which the author fails to suggest. No allusion is made to the researches of Prof. Salisbury, of Cleveland, Ohio, which were published in 1866, and in which he claims actually to have discovered and classified the ague plant.

Passing over the intervening chapters, as containing nothing which requires special notice here, we observe, in regard to the nature and origin of Inflammation, that he inclines to the view held by some of the latest pathologists—that it results from reflex nervous action through the sympathetic system, excited by peripheral irritation in the affected part. This seems to us to reach nearer to the root of the matter than any other theory with which the profession have been favored.

The author's views on Degeneration deserve some notice. He recognizes two forms of fatty degeneration: (1) "*fatty metamor-*

phosis," or "the direct conversion of the albuminous constituents of tissues into fat," of which he considers the change of animal bodies after death to adipocere to be an example; (2) "*fatty infiltration*," which is "merely an excessive deposit of fat from the blood within the cells of the part affected." * * * "Ultimately the tissues may degenerate from mere pressure." This double-headed conception of the subject resembles Bob Acres' choice of both pistols, as the easiest solution of the difficulty in which he found himself involved when about to fight a duel; for they are the opposite theories (viz., that of chemical transformation, and that of elimination by substitution), of which the English Quain and the French Robin are the respective exponents.

Adipocere is truly a complex soap, formed by the union of several fatty acids derived from the adipose tissues with the small portion of the fixed alkaline bases, potassa and soda, found in the body, with the occasional addition of lime from the soil, but mostly with the ammonia formed by decomposition of the nitrogenous tissues. This substance never is formed from the living body; in fact, the vital movements of the fluids forbid mere chemical operations, such as this view of degeneration would imply, and these changes before death occur only in gangrenous parts, where vital movements have entirely ceased.

The substitution theory of Robin appears to us reasonable in itself, but fails to reach the bottom of the subject. The questions are—why should fat be deposited, instead of fibrous contractile tissue? Why should carbon, hydrogen and oxygen alone be assimilated, instead of the same with the addition of nitrogen and the metallic salts? Is there not a defective assimilative power in the faulty structure? May not this be due to impaired innervation, as lesions of nerves and nervous centres always derange the functions over which they preside? May we not trace the nervous lesions to faults in alimentation, and especially to abuse of alcoholic stimulants? Between the last and fatty degeneration observation has proved an intimate connection, and functional derangement of the digestive organs from whatever cause is equally reasonable as a disturbing agent through the whole circle of vital functions. Continued excess and deficiency of aliment would also result in deranged nervous action, through vices of nutrition. But upon what principle of selection nutrition should fail to one portion of the nervous system in preference to another, we forbear to speculate.

It may be added that the author's causation of fatty infiltration is to us unsatisfactory. He alleges excess of fatty aliments and deficient consumption of fat in the respiratory process from pulmonary disease or indolent habits; but experience does not prove any such relation to be constant. He also assigns local inactivity of a part as a cause of infiltration, and this is doubtless the remote cause; but disuse certainly results in speedy impairment of innervation, both sensory and ganglionic.

On the pathology of fever, the author inclines to the opinion "that the nervous system is first implicated," though "others think that the blood and tissues are immediately affected." It is generally admitted that the febrile state is produced by the action of some deleterious agent admitted into the system, and we are at a loss to understand how this agent could reach the nervous system except through the circulating fluid. That subsequent inflammatory processes are brought about by disordered innervation is quite reasonable, and markedly in periodic fevers treatment is directed to the restoration of the nervous equilibrium, leaving the elimination of the fever poison mainly to the natural vital processes.

The individual diseases treated in Section III. follow mainly the arrangement adopted by the College of Physicians, but, as will be seen, deviations from this plan exist, for which we do not discover sufficient grounds. We have—I. General Diseases, subdivided into (A) the idiopathic fevers and some other affections due to the introduction of a specific poison, (B) Constitutional Diseases; II. Local Diseases.

In Chapter I., on Contagion, we observe that he uses this word in its broadest sense. A contagious disease is one "which is capable of being transmitted from one animal to another, either of the same or some other species." "The agent by which it is so transmitted is the contagion." Infection, or transmission of the poison through the atmosphere, is therefore one mode of contagion. The principal theories of the nature of contagion are very briefly stated, but no choice is indicated.

To avoid ambiguity in regard to the use of the terms *zymotic* and *miasmatic*, it is enunciated: "*Miasmatic* is a term applied to the *specific fevers*. The word *zymotic* implies no theory as to diseases producing fermentation, but now includes all epidemic, endemic, and contagious maladies, which are capable of being prevented by attention to hygienic and other conditions." The term "other conditions" might easily be expanded so as to include in this class many more maladies than even the author would be willing to admit.

Speaking of hygienic measures in contagious and epidemic fevers, he recommends—"The air of the room should also be somewhat impregnated with some volatile material of this nature, such as chlorine (from chloride of lime), carbolic acid, or sulphurous acid. It is also recommended to place across the doorway a sheet moistened with dilute carbolic acid, Burnett's fluid, Condy's fluid, or chloralum." We venture the opinion that any such disinfection, if tolerable to the patient and his attendants, would operate only on the imagination of those who put faith in it. Gaseous disinfectants, to be effectual, must saturate the atmosphere thoroughly enough to render it quite irrespirable, and liquid disinfectants are useless by simple evaporation. The other directions given under this head are appropriate.

In the clinical study of fevers great value is set on the thermometer, as affording important indications in diagnosis, prognosis and treatment. Its habitual and frequent use in such cases is enjoined, and comprehensive rules and directions are given for its application.

The chapter on continued fevers occupies nearly forty pages. The large space given to this class of diseases indicates their importance for English readers. In regard to the *materies morbi* of enteric fever, it is stated that it is never conveyed by fomites, but is contained in the stools. The atmosphere is liable to be contaminated with the poison, but it usually operates through pollution of the water supply. Hence the utmost care should be taken to disinfect the dejections. The most noticeable feature in treatment is the neglect of oil of turpentine as a remedy. It is recommended by enema for excessive tympanitis, but its internal use for the same symptoms, and especially for that condition marked by a dry tongue and an abdominal condition indicating intestinal ulceration, is not mentioned.

In scarlet fever he considers renal congestion, albuminuria and dropsy rather as complications than sequelæ. Though they belong to the stage of desquamation, he regards them as essential to the disease, and generally independent of exposure to cold. This view of scarlatinal albuminuria and dropsy is now generally accepted, and Niemeyer deems them as no more complications than the eruption and throat inflammation.

The treatment of small-pox by the internal use of antiseptics is mentioned as having obtained wide approval, but the author gives us no opinion of his own. Admitting the existence of living germs in the blood as the *materies morbi* of small-pox, we strongly doubt the possible toleration of disinfectants within the organism in sufficient concentration and quantity to destroy these germs. No doubt favorable results have followed their use, as might follow any other medication not destructive.

In the local treatment of erysipelas he prefers such dry applications as flour, starch or oxide of zinc, covered with cotton, to liquids. We have heard high praise of a lotion of solution of sulphate of iron, but have been so much pleased with the effect of dilute Goulard's Extract, in cases of ordinary severity, as to seek for no better application.

In diphtheria "*local treatment* is of essential importance," he says. He approves the plan of Sir William Jenner, "of making one thorough and efficient application, around as well as over the patches," using a caustic solution 160 grains to the ounce. He fails to mention the inhalation of vaporized lime-water and diluted lactic acid, which have been found to possess eminent solvent power over the false membrane.

Even dengue, plague and yellow fever receive a share, though very brief, of the author's attention. It is evident that he has not enjoyed a personal acquaintance with any one of the three, and improbable that many of his English readers will ever attain this privilege; but some mention is expected in a systematic treatise, for the candidate at examination may possibly be asked what he has learned of them. Yellow fever and dengue are certainly important subjects to the readers of this Journal, and we might occupy some space in criticising the author's article thereon, but it is hardly worth while. No systematic treatise on Practical Medicine with which we are acquainted, with the exception of that of Prof. Dickson, formerly of Charleston, S. C., contains articles at all satisfactory on these subjects. With regard to yellow fever in particular, there is no impropriety for one to read as much as he pleases, provided he never has to treat a case; but we are clearly of the opinion, that a physician who has acquired his knowledge of this disease from books is more dangerous to his patients than the disease itself.

The malarial or paludal fevers are disposed of in a chapter of nine pages. Such brevity might suffice for those British readers who are fortunate enough to practice in regions free of malaria, but throughout the greater part of this country periodic fevers are a subject of immense importance. "Very rarely do malarial diseases occur under a temperature of 60° F., and the heat must be of some duration," says the author. Unfortunately we find them prevalent throughout the year, though with diminished severity during winter and spring. The hypodermic administration of quinine is not mentioned. Speaking of substitutes for quinine, he remarks: "Of these the only useful ones are cinchona bark, cinchonine and arsenic." Salicine has afforded us very satisfactory results in cases unsuited to quinine, and dogwood and willow barks have given useful service in the absence of quinine.

The author's explanation of the pathology of rheumatic fever is not very clear. "The immediate pathological cause of rheumatic fever is the presence in the blood of a poisonous material, produced within the system by some disturbance of the nutritive and eliminative processes. This is generally presumed to be an ingredient of one of the ordinary excretions, only existing in excess, the common belief being that it is lactic acid." A few additional words would explain that the starch and sugar in the food are converted into lactic acid previous to combustion in the lungs, and that interference with the respiratory process leads to an accumulation of lactic acid in the blood; also that the perspiration contains a notable proportion of lactic acid, derived from the waste of the tissues, particularly the muscular, and that checking perspiration by cold after active muscular exercise causes an injurious amount of this excrementitious material to be retained.

So-called gonorrheal rheumatism is treated in the same chapter, and no hint is given that the *materies morbi* is different from that of ordinary acute rheumatism. The idea of purulent infection from the gonorrhœa is not mentioned.

In regard to the pathology of cancer, the two rival doctrines are stated: "(1) That it is primarily a *constitutional* or *blood* disease, or cachexia, of which the formation of cancer is but a local manifestation. (2) That it is in the first place a *local disorder*, produced by some irritation, and that the blood is only charged secondarily, as the result of absorption of matter from the local formation." He supposes that "both these theories are correct, in different cases." This is the safest conclusion in the present state of our knowledge.

Stomatitis is divided into no less than seven varieties, viz: (1) Simple Catarrhal or Diffuse; (2) Follicular or Papillary; (3) Aphthous or Croupous; (4) Ulcerative—Diphtheritic—Gengivitis Ulcerosa; (5) Parasitic—Fungous—Thrush—White Mouth; (6) Gangrenous—Cancrum Oris—Noma—White Canker; (7) Mercurial. The classification of stomatitis affords a fine opportunity for doctors to disagree, and we must allow the author the usual privilege, for scarcely two writers have the same arrangement in these local inflammations.

It is remarkable that the chlorate of potassa is not mentioned as a remedy for pytalism, even when due to mercury. In ulcerations of the throat his observation teaches him that the internal use of this remedy has no advantage over its free local application; but we apprehend that most practitioners will dissent from this opinion.

Diseases of the chest fill a very extensive portion of this work, occupying 247 pages, or nearly one-fourth the entire book. Physical examination of the chest is thoroughly discussed in 41 pages of smaller type. In this chapter a very lucid arrangement is made of the method to be used, and the results are clearly stated, with the proper deductions. Here we find unusual positiveness and scarcely a reference to other authorities.

Hooping-cough and influenza are included in this class of local diseases, although the author plainly recognizes the infectious nature of the former complaint and the epidemic character of the latter, with its cause in a specific poison. In the catalogue of the College of Physicians these are classified as general diseases, though afterwards placed among "diseases of the respiratory system not strictly local." True croup is placed only under the last head in the catalogue, and Dr. Roberts puts it among local diseases. As it is a matter of dispute whether true croup is a constitutional and communicable disease, or simply local, the right of the author to the latter view is not to be disputed; yet he recognizes epidemic influence as a predisposing cause. When diphtheria extends to the larynx, he agrees with Niemeyer that the laryngeal exudation is croupous rather than diphtheritic—that is, it is entirely on the surface of the mucous membrane.

In croupous pneumonia malarial complications are hardly alluded to, and probably they are rare in his experience. It is important for American students of medicine to be informed on this point, so as to be on the look-out for such an event and meet it promptly. As regards the local treatment, he speaks of Niemeyer's cold applications, but thinks they ought to be used with caution. He uses hot fomentations or poultices, turpentine stupes and sinapisms, to relieve pain, and says blisters are needed only in the advanced stages. All the *authorities* agree on this point, but an experience of ten years with early blistering has convinced us of their inestimable value for relieving pain and promoting speedy resolution.

That pulmonary disease which, commencing as a bronchial catarrh and extending to the air-vesicles, is commonly reckoned a form of pneumonia, is briefly considered under the head of *catarrhal pneumonia—disseminated* or *lobular pneumonia—broncho-pneumonia.* His view of its pathology is essentially the same as Niemeyer's—that it usually follows measles or hooping-cough, sometimes by direct extension of the catarrhal inflammation, but more commonly set up in lobules already collapsed in the course of these complaints by the plugging up of bronchioles.

Another kindred disease is styled *chronic* or *interstitial pneumonia—cirrhosis of the lung—fibroid phthisis, fibroid degeneration—induration with dilated bronchi.* He attributes it to irritation from some previous pulmonary affection, as—(1) rarely acute croupous pneumonia; (2) catarrhal pneumonia frequently; (3) dilatation of bronchi; (4) collapse of the lung; (5) pleurisy; (6) bronchial irritation from mechanical causes; (7) tubercular or cancerous deposits, phthisical cavities, pulmonary hemorrhage or abscess, or some injury. In regard to its pathology he is not decided. Niemeyer styles it *chronic interstitial pneumonia*, and supposes that the air-vesicles are obliterated by pressure from the thickened interstitial substance. Flint, on the contrary, attributes it to non-expectoration or non-absorption of effused products, and styles it *chronic pneumonitis.* Rokistansky supposes an exudation into the interlobular and intervesicular areolar tissue; Gross, that it is deposited into the areolar tissue and the air-vesicles both. The author has no new view of his own, and merely indicates that the general belief is that it is an interstitial affection.

In the treatment of pleurisy in the primary stage he uses the same application which is made for fractured ribs, and for the same purpose—to restrict expansion of the affected side of the chest. This is effected by a shingling with strips of adhesive plaster. The result is great relief to the pain, by restraining the friction movements of the pleural surfaces. This state of rest also favors early subsidence of the inflammation. The same treatment is also found useful in pleurodynia. For the relief of distension in pleuritic effusion he regards paracentesis as an important part of treatment, which should not long be deferred. The practice of pneumatic aspiration is not mentioned, though undoubtedly of great advantage while the effusion is still serous.

Great importance is given to the sphygmograph in the diagnosis and prognosis of diseases of the circulatory system. Rules for its use are given, and its indications are carefully stated. We do not doubt the value of the instrument, but are not sanguine enough to expect that it will come into general use in this country, until the period of medical instruction is considerably extended beyond two courses of lectures of four or five months' duration.

Palpitation is attributed, among other causes, to the abuse of alcohol, tobacco and *tea*. In this country it is *coffee* rather than *tea*, as the habit in England and in the Southern and Western States is the almost exclusive use of tea and coffee respectively. It is probable, however, that greater excess obtains in the use of coffee here.

In pericarditis with effusion, the author has "never met with any case even remotely suggesting paracentesis." The aspirator is not mentioned. Manifestly it is far preferable to any other means of mechanical relief.

In the chapter on diseases of the blood-vessels, the author remarks that "*chronic arteritis* is an important morbid process, and is now generally looked upon as being the origin of the condition known as atheroma, this being preceded by a *parenchymatous inflammation*, affecting the inner coat." This is also the opinion of Niemeyer. Prof. Gross attributes calcareous and cartilaginous deposits also to the same cause.

In abdominal dropsy from cirrhosis of the liver, the author practices early and repeated tapping as a *curative* measure, and has great faith in its efficacy. Being a safe procedure, it is certainly worth trial. The mode of action is not explained.

For the relief of vomiting various remedies are recommended, but the salts of cerium are overlooked. The granulated effervescing nitrate is pleasant to take, and having been found very successful, especially in the vomiting of pregnancy, deserves mention.

For the relief of habitual constipation he thinks the best time to take the laxative is just before or during a meal. We prefer to give the dose at bed-time, for several reasons. The action of the medicine ought to be slow; it need not interfere with sleep; it operates in the morning, and thus tends to restore the natural habit.

In Chapter XXIX. a brief general view is taken of *diseases of the stomach and intestines.* The three following chapters are devoted to maladies characterized by organic lesions of the stomach, and Chapter XXXIII. to the general diagnosis, prognosis and treatment of chronic gastric affections. Several succeeding chapters are given to intestinal affections. This plan of grouping a class of kindred diseases together for general consideration, of reconsidering them in detail, and finally of bringing them together again for comparison, is a characteristic feature of this work. Though it rather impedes occasional reference to a particular question or point, for purposes of instruction to the student it has evident advantages. But the plan is not adhered to throughout the work, as there are many maladies not susceptible of such arrangement.

Epidemic cholera and trichinosis are placed among intestinal—that is local—diseases. It has been observed before that general diseases are, in some instances, put by the author among local affections of the organs with which their symptoms are most strikingly associated. In our opinion such an arrangement has the disadvantage of leading the student to overlook the true pathology of the disease in question, while there can be no danger of neglecting the local symptoms.

Allusion is made to the principal theories in regard to the origin and spread of cholera, but neither one is adopted. It is directed, however, that the stools be immediately disinfected, and attention be paid to sewers, drains, &c. As to treatment during the evacuation stage, he disapproves of the eliminative plan of Dr. George Johnson, and directs the free use of opium and astringents. In collapse, opium is to be discontinued and recourse had to stimulants. Allusion is made to the transfusion of warm solutions of salines, but nothing is said of the transfusion of milk, which has recently been tried by Dr. Hodder, of Toronto, with success in two out of three collapsed cases.

The most prominent theories of the ætiology of dysentery are presented, viz., (1) that it is due to a local malarial poison; (2) that, though primarily originating in this way, it is propagated by a specific poison in the stools; (3) that it is independent of any specific poison, but due to climatic and dietetic causes. Its association with other diseases, especially ague, is observed. The directions for treatment alone indicate that the two first views above stated are not accepted. In the early stage the ipecac treatment is regarded almost as a specific, but its mode of action is not explained. For chronic dysentery reliance is chiefly placed in regulation of diet and attention to sanitary measures, especially change of climate. It is properly observed that the malarial and scorbutic complications require special modes of medication.

As regards the ipecac treatment of dysentery, our experience is quite limited, though on the whole satisfactory in results; but in recent cases a combination of laxatives with opium has been so successful as not to call for resort to the nauseant plan. In chronic cases we put trust in antiseptic enemata, in addition to the measures recommended above.

In the chapter on intestinal worms, the *tricocephalus dispar* is said to inhabit "usually the cœcum, rarely the colon, very rarely the ileum." Other authors make the same statement, but we have certainly seen several times one or two of these little torments taken from the verge of the anus, within the sphincter, to the great relief of the patient.

The author avers, with Niemeyer, that trichinosis in the human subject is derived solely from eating infected *swine's* flesh. Other authorities state that many other animals are subject to the same parasite, and it is reasonably possible that the eating of their flesh insufficiently cooked might result disastrously.

Cases of jaundice are divided in this work, as is usual, into those due to obstruction of the ducts and those which are not so. The author, however, does not accept suppression of the hepatic function as a cause of jaundice, stating that the weight of authority favors the view that bile-pigments are produced in the liver. Jaundice without obstruction is recognized as being associated with a number of morbid conditions, such as certain fevers, poisons in the blood, atrophy or congestion of the liver, disturbed innervation, &c.; yet even in some of these conditions he thinks there may be obstruction within the organ itself. Among the causes mentioned for this form of jaundice we should regard as especially important "conversion of the hæmatin of the blood into bile-pigments;" for Niemeyer states, on the authority of Virchow and others, that bile-coloring matter may be formed from the blood outside the liver by certain substances which dissolve the corpuscles. Chloroform and ether in poisonous doses have this effect, and it is probable that snake-poison and that of certain fevers produce jaundice by destruction of blood-corpuscles.

Chapter XLIX. gives a brief rehearsal of diseases of the urinary organs, including directions for the clinical examination of the urine, which are given with unusual clearness and accuracy. Diabetes mellitus is included in the category, though, according to the author's belief of its real nature, it should be reckoned among diseases of the liver, while in the nomenclature of the College of Physicians it is placed among general diseases. On the pathology of this disease, it is confidently stated that the glycosuria is due "to some derangement in connection with the so-called glycogenic function of the liver, though what the exact deviation is, is by no means a settled point." From the known fact that the liver produces a kind of sugar, or a substance readily converted into sugar in the blood, and that diabetes mellitus occurs independently of the ingestion of saccharine and amylaceous food, it appears highly probable that the malady is connected with hyper-secretion of this substance. It is also not improbable that the subsequent vital metamorphoses of this product are more or less interrupted, namely, its conversion to lactic acid in the circulation between the liver and lungs and its oxidation or combustion in those organs. Suppose the arrest to take place before the transformation to lactic acid, the result would be glycosuria; if the interruption occurs one step later, the lactic acid retained in the blood would induce acute rheumatism. But the whole subject is involved in great obscurity, inasmuch as no sure indication has been obtained by the researches of pathological anatomists.

Acute Bright's disease is regarded chiefly as a sequela of scarlet fever or a consequence of taking cold, in accordance with the views of most writers. Niemeyer, however, considers it an essential symptom of scarlatina; and this is likely, from the fact that all precautions fail to afford exemption, and careless exposure after the eruption has disappeared is not certainly followed by albuminuria and dropsy. That it is not a constant symptom proves nothing, for in other maladies it is usual to find some symptoms wanting.

The various chronic inflammatory diseases of the kidney are regarded by the German pathologists, together with Drs. Bright, Martin Solon and Rayer, as successive stages of the same malady, while the author agrees with most of the other English pathologists in considering them as distinct from the beginning. Two of these diseases are recognized, viz., (1) *large, white, smooth kidney—chronic desquamation or tubal nephritis*, which is generally a sequel of acute desquamative nephritis; (2) *granular contracted, or cirrhotic kidney—chronic interstitial nephritis*, usually associated with gout, chronic lead poisoning, chronic alcoholism, &c.

Diseases of the nervous system, on the whole, occupy as much space as the scope of the work fairly admits, but some are very hastily dismissed. A brief general view of the whole ground is first taken, including their pathology and treatment; then some special maladies are considered and followed out singly to the conclusion, thus varying from the disposition of other groups. Hysteria receives prominent notice, except treatment during the hysterical fit. After speaking of affusion of cold water, ammonia to the nostrils, interrupting respiration by closing the mouth and nostrils, and galvanic shocks, he remarks: "If any medicine is needed, spirits of ammonia with valerian or assafœtida may be given." Such simple remedies may answer for ordinary attacks, but they are quite useless in severe outbreaks. In such cases, chloroform internally has been resorted to by us, and on one occasion a delicate lady swallowed no less than a fluid ounce of chloroform, mixed with milk, in about an hour. No treatment less heroic was of any avail.

In hydrophobia, when once established, we are told, "there is no remedy, that I know of, of any real service." We have found chloral hydrate of decided service, given by enema; not as a curative agent, but to relieve the most distressing symptoms. Under its full effect the patient will sleep, and on waking will often be able to take food and sometimes drinks.

Idiopathic tetanus receives brief attention. Among the remedies recommended we miss chloral, cannabis indica, calabar bean and gelseminum.

The subject of insanity is very properly omitted altogether from a work of this scope.

Poisoning by lead and mercury, and sunstroke, do not receive the share of attention which they demand, considering their frequency and serious nature.

A chapter is given to "*Apoplectic Diseases.*" The term apoplexy is usually restricted to the state produced by sanguineous effusion, but some recognize a congestive form. The author gives it a wider significance than we have elsewhere observed. The causes assigned are—(1) cerebral congestion; (2) cerebral or arachnoid hæmorrhage; (3) sudden anæmia from thrombosis or embolism, or cardiac failure; (4) uræmia and other forms of blood-poisoning; (5) sunstroke; (6) organic affection of the brain or its membranes, as meningitis, abscess, chronic softening, tumors; (7) sudden serous effusion into the ventricles [though he believes the more probable condition to be uræmia]; (8) some unknown condition in the absence of any organic lesion. The word apoplexy implies an affection produced by a sudden or violent cause, and in this view the fourth, sixth and seventh of the above causes should not be included.

The subjects of *wasting palsy*, *scriveners' palsy*, *shaking palsy*, *infantile paralysis*, *epidemic cerebro-spinal meningitis*, and *glosso-laryngeal paralysis* are all dispatched in a single chapter of eight pages of the smaller print (the book is printed with types of two sizes). An outline view merely is therefore afforded of these maladies.

Diseases of the Skin are all compassed in the closing chapter, within 26 pages. The classification of Tilbury Fox is adopted—the clearest and most rational one that we have observed. Perhaps all is told that might be asked at a medical examination, but a practitioner would certainly require something more to study up a case.

Having thus noticed in detail the contents of Dr. Roberts's work, it remains to speak of it as a whole. In its preparation the author obviously aimed to answer the requirements of medical students, whose time is too much occupied for reading a voluminous treatise, even if they are prepared to master it. Instead of making his chapters distinct articles on the several subjects, he has, wherever it was practicable, arranged them together, for comparison and study, aiming rather to produce a text-book than a book of reference. Such a work, covering most of the subjects properly belonging to the practice of physic within the compass of a handbook, affording something more than an outline and much less than a complete system of the Science and Practice of Medicine, has been a desideratum. With all its imperfections, which we have endeavored freely and fairly to point out, we must pronounce it the best work of its kind in our language. A well-prepared index affords ready reference to any subject contained; while the articles are so subdivided, with headings in large capitals, as quickly to strike the eye.

The plan so much in vogue with American publishers, of bringing out medical works by foreign authors under the supervision of American editors, with such additional matter as they may deem appropriate, has its advantages, especially with those of a practical nature. We are clearly of opinion that this work might have been rendered much more valuable to the American student by this arrangement. Such diseases as yellow fever, dengue, the malarial fevers, and sunstroke, have much more importance here than in England, and need fuller discussion than this book affords. Considerable additions might be made without increasing the number of pages, for the surface of the page is somewhat smaller than that of ordinary octavo volumes, while an unusually wide marginal space is left all around the printed portion.

One erratum is noted, but we have observed several other typographical errors, which must have escaped the proof-reader and perhaps the author. Some of the chapters have the heading "Diagnosis," when they include also Prognosis and Treatment.

It is unreasonable to expect that a systematic treatise will spring perfect from the brain of its author, like Minerva from the brain of Jove. If the author is not discouraged at home, let him revise his work; then let the American publishers put it in the hands of a suitable American physician for adaptation to our wants, and they may bring out a book which will earn them the gratitude of a multitude of medical students and young practitioners in this hemisphere. H.

A Dictionary of Medical Science; containing a concise Explanation of the various Subjects and Terms of Anatomy, Physiology, Pathology, Hygiene, Therapeutics, Medical Chemistry, Pharmacology, Pharmacy, Surgery, Obstetrics, Medical Jurisprudence and Dentistry; Notices of Climate and of Mineral Waters; Formulæ for Officinal, Empirical, and Dietetic Preparations; with the Accentuation and Etimology of the Terms, and the French and other Synonyms. By Robley Dunglison, M.D., L.L.D., late Professor of Institutes of Medicine and Medical Jurisprudence in the Jefferson Medical College of Philadelphia, &c. A new edition, enlarged and thoroughly revised by Richard J. Dunglison, M.D. 8vo., pp. 1131. Philadelphia: Henry C. Lea; 1874.

During the forty years that this work has been before the public numerous editions have appeared, and revisions of the matter have been made from time to time as called for by the rapid advance of the medical sciences. The high reputation which the book long ago acquired has thus been maintained, so that it has held its place without a successful competitor in our language, and it remains a monument of the learning and industry of its late illustrious author. In comparing it with any other medical dictionary in the English language, we must still award it its pristine preëminence, and give the editor credit for the great labor involved in the addition of "more than 6000 subjects and terms not embraced in the last" edition. But, while recognizing these important additions and the revision of former subjects and terms, it would be a failure in our task were we to overlook some striking omissions of new and retention of old matter, in disregard of the actual position of medicine to-day. To illustrate this faultiness, we shall now instance several points discovered by an examination of the book.

The articles on *Disinfectant* and *Disinfection* have undergone no change since 1857 certainly, though much has been discovered on these subjects during the interval. After naming chlorine, sulphurous acid, carbolic acid, and some other agents, it is stated: "It is more than questionable whether any chemical action occurs between these agents and the miasmata, whence results a compound which is harmless, or in other words, whether there is any agent that is capable of destroying morbific miasms." It is known that sulphuretted hydrogen and sulphide of ammonium are decomposed by chlorine, which combines with their hydrogen to form a compound far less noxious. Zinc and iron perchlorides act in the same manner. Permanganate of potassa readily decomposes in the presence of organic matter, and furnishes nascent oxygen freely to decompose and form innocuous compounds with the same deleterious gases.

The Dictionary fails markedly in keeping pace with recent chemical discoveries. The old notation and nomenclature are retained, but, as the new cannot yet be considered settled, no fault is to be found for not giving them up; still, the proposed changes should at least be mentioned. Such words as *atom*, *atomic*, *equivalent* and *notation*, are not even defined.

It is well known that confusion is apt to arise in the term *Indian Hemp*, which is the *Apocynum Cannabinum*, but might easily be supposed to be the *Cannabis Indica*. In this book, under the head of *Hemp*, we find *Bangue* given as a synonym of *Apocynum Cannabinum*, which is incorrect; it is elsewhere stated as a synonym of *Cannabis Indica*, which is correct. This mistake is copied from the earlier editions.

It is to be regretted that in pathology and therapeutics the ideas of a past generation are reproduced, in disregard of those accepted by the present. Under the head of Diabetes Mellitus it is stated that sugar "replaces the urea, which is not found in the urine of those laboring under diabetes." Niemeyer maintains that urea is not on the whole diminished in this disease, and Dr. Parkes, that the quantity is greatly increased.

The antiphlogistic spoliative treatment of acute diseases here maintains its old ground. It is recommended in true croup, acute rheumatism and gout, yellow fever and tetanus. Lactic acid as a morbid element in the blood in rheumatism, and uric acid in gout, are not mentioned, nor alkaline remedies alluded to.

Under the head of *Syphilis* it is said—"It is generally sufficient to keep the mouth sore for a fortnight for the cure of chancre; for venereal sore throat and other recent constitutional symptoms, eight or ten weeks may be required; and, of course, a longer time if these symptoms have persisted longer." Here we find the obsolete notion that a sore mouth is indispensable to the remedial action of mercurials.

The treatment recommended in gonorrhœa is equally antiquated—first antiphlogistic, then cubebs and copaiva; "injections are rarely required," it is said.

No extensive examination is needed to see that this part of the work, as well as that relating to chemistry, has not undergone thorough revision, but we are ready to believe that the other departments have received more attention.

It is undoubtedly an important guide to the pronunciation of words to indicate accented syllables, and in the present edition this is fully carried out. We notice the words *respiratory* and *inspiratory* accented on the first syllable, for which there is scarcely any good authority, and certainly not the best. In this connection we would express a regret that the sounds of the vowels are not indicated, at least where there is room for mistake. Occasionally it would be well to show precisely the proper pronunciation of a word by a phonetic spelling: for example, the pronunciation of *phthisis*—whether *teezis*, as often heard, or *thisis*, according to Worcester and most good authorities, but not according to common usage. H.

An Introduction to Practical Chemistry, including Analysis. By John E. Bowman, F.C.S., &c. Edited by Charles L. Bloxam, F.C.S., &c. Sixth American from the Sixth and Revised English Edition. 12mo., pp. 339. Philadelphia: Henry C. Lea; 1873.

The value and popularity of this little book are indicated by the repeated demands for its publication since its first appearance in 1848, and the fact that it has held its ground in the face of competition for a quarter of a century.

The present edition has been revised particularly in that portion of qualitative analysis relating to the precipitate produced by hydrosulphate of ammonia. Additions have been made to the examples for practice in quantitative analysis, and volumetric analysis has here obtained increased prominence and been brought into more practical service in the determination of chemical elements.

We deem it unnecessary to review the contents of a work so long and so well known, and simply accord the opinion that it still merits its old distinction of being the best guide to beginners in Practical Chemistry. H.

The German Pharmacopœia. Translated by C. L. Lochman. With an Appendix explanatory of the French Metrical System, and Tables of Weights and Measures, etc. 12mo., pp, xii; 382. Philadelphia: David D. Elder & Co.; 1873.

This work was intended to supersede the Prussian Pharmacopœia and the Pharmacpœia Germaniæ, and was prepared on the basis of these two during the year 1871, in accordance with a decree of the Federal Council. The remedies are classified alphabetically according to their Latin names, but in the translation the English and German synonyms are also given. The French metrical system is adopted, as well as the new atomic weights of the elements. When liquids are estimated by parts, it is always understood that weights and not measures are intended.

The list of remedies is much less copious than that comprised in the American Pharmacopœia. This is due to the omission of some agents contained in the latter, such as *podophyllum*, *gelseminum*, *veratrum viride*, *phytolacca decandra*, &c., but chiefly to fewer preparations of numerous agents. Several whole classes of preparations are wanting, viz., *fluid extracts*, *oleo-resins* and *confections*. Some preparations are to be found which are unknown in our collection, notably the *spiritus formicarum*—spirit of ants. As therapeutics is foreign to the scope of the work, we are left in ignorance of the properties and mode of exhibition of this important remedy.

This translation is offered to the American public, to supply a want which was supposed to be felt by the large German element in our population, including many physicians and pharmaceutists; and we have no doubt it will be gratefully received by them. H.

Fœtal Physical Diagnosis—Analysis of the Physical Examination of One Hundred and Twenty-Six Cases. By Frank C. Wilson, M.D., Visiting Physician to the Louisville City Hospital. Reprinted from the American Practitioner for December, 1873.

Although with the exception of proving the possibility of predicting the sex of the fœtus, Dr. Wilson's article contains nothing new with regard to the utility of physical examinations applied to pregnancy, yet it clearly sets forth a number of points to which the attention of the profession is not perhaps as generally called as the importance of the subject deserves.

Inspection, percussion, palpation, and auscultation are successively examined, the last named being properly considered the most important of the elements of physical diagnosis of pregnancy. Without going as far as Mr. Depaul, who says that auscultation is as useful as vaginal exploration, (and that, were he certain of the normal condition of the pelvis, he would select auscultation in preference to the use of the finger, were he compelled to make a choice between the two methods of exploration,) Dr. Wilson shows the practical advantages of auscultation, indicating as it does the healthy or opposite condition of the fœtus, the place of placental attachment, and impediments to the fœtal circulation.

The value of the funic souffle is illustrated by the history of several cases in which the twisting of the cord around the neck or other part of the child was diagnosed. It is of course mentioned that the value of the sign, in these instances, depends entirely *upon the fact that the souffle is persistent.*

Possibly the author attaches too much importance to auscultation, as a means of detecting "the crackling sounds caused by the evolution of gases from the decomposing fœtus * *." Joulin, whilst admitting the authority of Stoltz, who describes a peculiar sound, comparable to that produced "during the fermentation of a liquid," which he ascribes to the decomposition of the amniotic fluid, remarks, however, that although the "fœtus is constituted by elements, whose decomposition is much more rapid " than that of the amniotic liquid, still putrid emphysema of the fœtus, before rupture of the membranes, is so rare that only one case had come under his observation. He also states, that he has never known the gases situated within the fœtus to diffuse themselves in the amniotic sack, and he does not believe in the production of any such sound, even if fermentation of the amniotic fluid itself be taken for granted. For fermentation to produce a sound, the evolution of very considerable volumes of gas is necessary; and if the "decomposition of the amniotic fluid were sufficiently active to be perceived by auscultation, after a few hours, a day at the farthest, the bulk of free gases would either cause an explosion of the abdominal and uterine walls, * * * or the woman would die of asphyxia" * * * from the ascent of the diaphragm and consequent condensation of the lungs.

Dr. Wilson's memoir is exceedingly interesting in the passages which treat of the possibility of predicting the sex of the fœtus. Recalling the observations of Dr. James Camming and Dr. T. J. Hutton, he states that he has diagnosed the sex of the fœtus successfully one hundred times out of one hundred and nine cases. The making of the diagnosis depends upon the difference in the number of pulsations of the male heart as compared with those of the female. For Dr. Wilson, the fœtal heart varies between 110 and 170, "the average pulse of the males being 125, that of the females 143. Taking the average of all the cases, it would give 134 as the dividing line between the two sexes. A range of four beats above and four below this point would embrace a doubtful zone, in which it would be impossible to predict the sex with any degree of certainty."* Dr. Wilson is very careful to say that the count "should be made at several different intervals * * * and if the woman be in labor, then during the intervals between the pains."

From the large number of cases examined, and the remarkably few errors made, it is evident that all idea of fortuity must be abandoned, and the success which has attended Dr. Wilson's investigations cannot fail to attract the attention of physicians to a method of observation so successful in its results and so singularly interesting in its relations.

Certainly there are but few professional men who, after perusing the memoir under review, would continue neglecting "to avail themselves of that assistance which physical diagnosis affords." L.

A System of Midwifery, including the Diseases of Pregnancy and the Puerperal State. By William Leischman, M.D., Regius Professor of Midwifery in the University of Glasgow, &c.

A Manual of Midwifery, including the Pathology of Pregnancy and the Puerperal State. By Dr. Karl Schrœder, Professor of Midwifery and Director of the Lying-In Institution in the University of Erlangen.

A new book on Obstetrics, which should embrace the advances made in the last thirty years, had become a real necessity, and we are happily favored now with the appearance of two, almost simultaneously. Medical writers are apt to grow exceedingly well satisfied with themselves and with their knowledge of the subjects on which they are wont to descant, and so they come at last to announce things in a way which seems to be entirely beyond contradiction. A certain degree of dogmatism is essential in a good teacher, and there is no branch of medicine in which

*In the "Clinical Reports" published in the present number of the JOURNAL, will be found an article on the Prediction of the Sex of the Fœtus in Utero, which was sent to press before its author enjoyed the opportunity of reading Dr. Wilson's very instructive paper.—[ED.]

the cardinal points are more justly settled than in obstetrics. Still, "positive" as it is, there are many things in this department which have rested serenely on authority, while only renewed observation was necessary to overthrow them completely. The two books before us have created no little confusion among our household gods, and we believe that many of them are fairly proven to be in the wrong world altogether. Both books give evidence of labor, but they bear further testimony, too, to the fact that one-half of the world doesn't know how the other half lives. In their contradictions their authors exhibit mutual ignorance of each other and of the literature of their opposite countries. Much of value which we have long known in America, and known, too, through British and German researches, one or the other of these writers does not mention at all, touches only incidentally, or puts forth in such a formal way that evidently his acquaintance does not amount to familiarity with the subject. The peculiarities of American civilization come, in great part, of its being a compound of all other existing civilizations, from which we have been expert in selecting the available, and what is notably, therefore, the simple. So the American medical mind disembarasses itself of much of the heavy armor of the European schools, and while it has scarcely done its part perhaps towards the advancement of *science*, has nevertheless applied with distinguishing success what is practical in the discoveries of others. Matters often creep into our knowledge and into our practice, without our being able to say whence they came; hence, if we are not always surprised at what we see in print, there is no great wonder. To the physician, then, neither Leischman nor Schrœder may be a novelty altogether, or in chief; but books, we opine, are of much less service to, and are made less for practicing-*reading* medical men, than for those new in the profession. To students especially, then, and to others who are under the necessity of consulting epitomized knowledge, we take pleasure in recommending these two publications as the latest and the best. There are some things in one which are not in the other; other things more fully treated in one than in the other, and other things still in regard to which more advanced notions are promulgated in one than in the other; but balancing all as best we can, we confess ourselves unable to decide between their respective merits. They both deserve, singly or combined, to be given the preference over all others as text books in our medical colleges.

Report of the Committee on the Yellow Fever Epidemic of 1873, *at Shreveport, La.* Published by the Howard Association.

Every startling event is fruitful of historians, and the scourge which visited some of our sister cities last summer has brought forth the usual crop of chroniclers. In the shape of "*reports*" which purport to be *histories*, much writing has been done, and chiefly, we regret to say, by those skillful at handling a subject without touching it.

Is yellow fever indigenous to this section, or is it always of foreign origin?

Is the disease communicable from one individual to another? Dropping the quibble over "*contagion*" and "*infection*," is it "catching?"

These questions have the greatest possible public as well as scientific importance, and it is the duty of those who enjoy the privilege of observing the disease when it prevails, to at least make some effort at giving satisfactory answers to them. There lie before us now two reports on the Shreveport epidemic, which for the purpose especially of arresting error, we feel called upon to notice. The first, because in some respects the better of the two, is by Henry Smith, M.D., (who was dispatched to that city in the interest of the Louisiana Equitable Life Insurance Company, and is an account to the officers of his doings.) Dr. Smith makes an elaborate beginning, hints at his own heroism in accomplishing the journey to the devoted city, paints in bad English the state of affairs on his arrival, tells how quickly he put things to rights, exhibits his knowledge of sanitary engineering, and then looks about him for an explanation of why all this is thus.

He says—"Shreveport, as you" (Mr. Todd and others) "are doubtless aware, is on the right bank of Red River, in the Parish of Caddo," * * * and "the *declivity* between the front and the rear portion of the city * * became a cesspool for the reception of dead animals of all kinds and a wallowing place for others."(!) "In addition, a number of cattle drowned at the wreck of a steamboat two miles below the city, were hauled on shore, skinned, and their carcasses permitted to rot in the open air. The consequence of a sanitary condition so alarming was not difficult to foretell"—and yet no one seems to have foretold it. "Diseases, such as small-pox, cholera, and spinal meningitis, soon marked the progress of events. When the terrible blow did fall, it struck the luckless community almost simultaneously in three places—on Texas street, in the centre of the city, near where the Trans-Atlantic Circus was quartered, in a levee street boarding-house, and at a point near the river bank two miles below the city, where the cattle were skinned. The three points are nearly in a direct line, running north and south."

And this is all we gather from Dr. Smith towards the elucidation of the very important question of the source of the yellow fever at Shreveport. His apparent conception of the nature and capabilities of morbid causes leads us to expect no more, indeed, than this vague intimation that the dead cows, the circus company and the cesspool—all had a hand in its production. But the very important statement that the first three cases were nearly in a direct line running north and south, perhaps explains the whole matter to the satisfaction of Messrs. Todd & Co., and Dr. Smith hastens to tell them of the peculiarities presented by the epidemic, and then details to these gentlemen his own treatment, for which he apparently claims a success much greater than that enjoyed by other physicians. Twelve and three-eighths per cent. of his patients died, while "at my arrival," he adds, "the number of deaths among those attacked was estimated as high as eighty per cent."

And next comes the "Report" of a committee of physicians appointed by the Shreveport Medical Society, "To inquire into, and report upon the Origin, Nature and Progress of the Epidemic of Yellow Fever, as it existed in Shreveport in the fall of 1873." These gentlemen, after making fair promise to confine themselves to the "collection and collation of facts," and to refrain from offering opinions, proceed in a systematic way to discuss the different theories proposed of the origin of the outbreak. Having disposed of the "Circus" theory, and of the "Removal-of the Red-River-Raft" theory, they say:

"We shall now undertake to prove that our epidemic was imported to us from abroad, directly from Havana by the way of New Orleans. It is a *fact* well authenticated that the bark Valparaiso left Havana on June 16th, and arrived at the quarantine station on June 24th, was detained two days, and arrived at the wharf in New Orleans in the 4th district on June 26th. On the 4th of July the mate of the bark Valparaiso took sick of yellow fever and died July 8th. Fever broke out on the steamers Belle Lee and W. S. Pike, which were lying in the neighborhood, and on July 16th, Edward Hymes took sick on board the Belle Lee; on July 29th Thomas Meade, carpenter on W. S. Pike for twenty days previous to his being taken sick, was taken down with the fever while that boat was lying within thirty yards of the Belle Lee; and again, J. Douglass, who had been employed in loading bark Valparaiso, was taken sick with the fever on July 29th. This statement has been furnished us through the Board of Health in New Orleans, and is perfectly satisfactory as explaining its introduction into that city. Now upon the breaking out of the fever on the steamers Belle Lee and W. S. Pike, there occurred a general stampede of the waiters, who fled and scattered themselves among the other boats lying in port at the time, and chiefly among the Red River packets, which at that time were regularly plying between New Orleans and this city.

"If your committee were called upon to single out and identify the first case of yellow fever that occurred in Shreveport, we would be compelled to say that it was the case of Newton Walker. And what do we find concerning the history of this case? He was engaged at his store on the levee, corner of Crocket street, every day settling up his business affairs, which were in liquidation, taking his meals at an eating-house next door to his store, which eating-house is patronized almost exclusively by steamboatmen. On the 12th of August he took sick and went to his brother's house, near Bayou Pierre, three miles below the city. Mr. Walker recovered, but the family of his brother, who had no communication with steamboats except that which was furnished through the indirect channel of Newton Walker, as a vehicle, took sick and five of them died. We will state, in passing, that Newton Walker, not suspecting the nature of the disease, did not send for a physician until the febrile stage had passed off in his own case, and the sickness of the other members of the family began to attract attention from the gravity of the cases, and even at that time he requested the physician to prescribe for him for '*yellow jaundice*,' as he called it, but which proved to be one of the sequelæ of yellow fever. This carries us to about the 25th of August, when all of our physicians suddenly found themselves overwhelmed with calls, and they soon saw that this was no ordinary sickness. The sufferers were yet mostly in public boarding-houses where river men mostly congregated. Several suspicious cases were admitted into the Market Street Infirmary, one in particular, Nancy, the colored chambermaid of the steamer 'Durfee,' though moribund when admitted (which rendered diagnosis uncertain), is believed from attending circumstances to have died of the fever. This was on the 27th. From this date cases began rapidly to multiply, and all doubts as to the nature of the disease in the minds of most of the faculty were removed."

In the above extract is presented all they advance in proof of the New Orleans theory of the origin of the fever, and we submit, that the charge that yellow fever was carried from this city to Shreveport is, with no better evidence than that to sustain it, a totally unjustifiable assumption. This same notion was promulgated by a "report" in the daily papers here last autumn; but then we were told that the disease was probably carried in goods. We have never heard that anything resembling a fact was ever alleged in support of this belief, and yet it was accepted everywhere because it was the *opinion* of well known physicians in New Orleans. If the publication of such opinion involved nothing more important than one's right to do so, all very well; and if such opinion was based on demonstrable truth, it is right and proper that it should be published; but the matter is too serious a one in its consequences to commerce, and in its influence on the actions of people, to be disposed of by mere *opinion.*

Such proof as we are presented with above would be considered of no sort of value in settling the most trivial every-day question. Let us sum it up. There are some cases of yellow fever in New Orleans; steamboats go from New Orleans to Shreveport; a citizen of Shreveport is attacked by yellow fever; he gets his meals at a boarding-house known to be frequented by steamboatmen; none of them have, or have had the fever, and yet he is supposed to acquire it from them. So much for the *facts* of the report, and now the counter-facts:

1. The steamboats Belle Lee and W. S. Pike had been tied up a month before the first case of fever occurred (nine weeks before the first case in Shreveport), and had no cabin crews to be panic-stricken and to go on board Red River boats.

2. These two boats were in the infected district, two miles above Canal street, and consequently two miles from the part of the levee where the active Red River boats were lying.

3. Those persons belonging to the steamboats and who had the fever at Shreveport, took it after getting there and after citizens of Shreveport had had it, while persons who were exposed to the disease in Shreveport had it almost certainly after leaving, and communicated it to others wherever they went.

4. Walker (the first person attacked) was liquidating his business, and was not therefore probably having anything to do with goods recently arrived from this city.

5. Is it not rather far-fetched to say that he acquired the disease from persons who had come from New Orleans, who had not had it themselves; and in regard to whom there is scarcely ground for suspicion even that any one of them had been exposed here?

6. The steamboat Durfee was lying at the levee no great distance from where Walker was attacked, and Nancy may fairly be supposed to have been exposed to the same local cause as he.

We do not wish to be understood as contending that the fever was not carried from New Orleans to Shreveport. We only condemn the haste with which the conclusion has been arrived at as unscientific and fruitful of evil. If it be so, let the truth be established; but the *facts* put forth by the Shreveport committee are as unsatisfactory as the loose opinion enunciated by the physicians who went from this city to attend the sick. H.

Lectures on Clinical Medicine. By A. Trousseau, (late Professor of Clinical Medicine in the Faculty of Medicine, Paris, &c.) Translated from the Third revised and enlarged edition, by Sir John Rose Cormack, M.D., F.R.S.E., &c., and P. Victor Bazire, M.D. Complete in two volumes. Philadelphia: Lindsay & Blakiston; 1873.

Every American physician can now congratulate himself that an opportunity is afforded to enrich his library by the addition of the clinical lectures of this great master in medicine. Every page of these volumes glows with eloquence and enthusiasm. The "rugged paths that lead up to the hill of science" are overhung with flowers and pleasant fruits. It may be surely affirmed that few more excellent teachers than the "admirable Trousseau" have ever graced the medical profession. We shall not deny that the charge of over-much refinement in respect to little points, may not hold true in regard to one or two subjects, but these are minor faults. The earnest, truth seeking practitioner, will find in Trousseau's lectures a practical value more attractive than their acknowledged eloquence and beauty of diction.

The Student's Guide to Medical Diagnosis. By Samuel Fenwick, M.D., F.R.C.P., &c. From the Third revised and enlarged English edition, with eighty-four illustrations on wood. Philadelphia: Henry C. Lea; 1873.

This is a duodecimo volume of some three hundred pages. A subject as comprehensive, and one affording such extraordinary temptations to amplification, as Medical diagnosis, can only be reduced to the limits of a compend by the exercise of both knowledge and tact. Dr. Fenwick has, without doubt, successfully attained this purpose. A handbook on medical diagnosis should be continually within reach of the medical student who desires to utilize in the best possible manner his clinical advantages while in attendance upon hospitals. "Fenwick's Guide" is so far superior to any offered students, that the colleges of this country should recommend it to their respective classes.

A Treatise on the Diseases of the Eye. By J. Soelberg Wells, F.R.C.S., &c. Second American from the the Third English edition, with additions. Illustrated with two hundred and forty-eight engravings on wood and six colored plates, togetheher with selections from the test types of Professor E. Jaeger and Dr. N. Snellen. Philadelphia: Henry C. Lea; 1873.

Treatise on the Diseases of the Eye, including the Anatomy of the Organ. By Dr. Carl Stellwag, etc. Fourth revised and enlarged edition. Illustrated by wood engravings and chromo-lithographs. New York: William Wood & Co., 27 Great Jones street; 1873.

We believe that all ophthalmologists concede to these great works the very highest position as exhaustive treatises upon this specialty. The general practitioner who may be interested in investigations in this branch of medicine will be well repaid by their perusal.

A Handbook of Hygiene and Sanitary Science. By George Wilson, M.A., M.D., &c. Second edition, carefully revised. Philadelphia: Lindsay & Blakiston; 1873.

This is, beyond doubt, the best handbook which has ever been written on its important subjects. Of the many questions discussed by its author, those relating to "Food, Air and its Impurities, Water and Disinfection," are of the greatest interest to the general practitioner.

Physician's Office Case Record and Prescription Blank Book: Physician's Pocket Case Record and Prescription Blank Book. Cincinnati: Robert Clark & Co.; 1873.

These books are admirably adapted to meet the wants of the busy practitioner. The plan upon which they are arranged is similar to that of a merchant's book of blanks for checks. The right and the left half of each page contains similar blank forms for prescriptions, while a line of punctures from top to bottom enables the prescriber to tear off the prescription and leave the copy in the book. The reverse of each copy is ruled with lines for recording date, name, address, diagnosis, age, build, pulse, beat, respirations, tongue, urine, stools, remarks. Mr. James Gresham is the agent for these books, and will furnish them through the mail or by express, as may be desired.

CORRESPONDENCE.

MOBILE, ALA., Jan. 18, 1874.

Professor S. M. Bemiss:

Dear Doctor—Enclosed I send you a copy of a letter written by Dr. Harper, relative to the late yellow fever epidemic at Pensacola. The letter was written to me for the American Health Association, and one of my students, Mr. W. G. England, kindly copied it for me. I think it of sufficient interest for publication, and forward it to you, hoping that you will give it a place in your Journal.

Yours truly, G. T. GILMORE.

[COPY.]

PENSACOLA, Nov. 9th, 1873.

Dear Doctor—I regret very much that circumstances, over which I could exercise no control, prevented a prompt answer to your favor under date of October 16th.

The yellow fever that lately prevailed in Pensacola was imported from Havana, by the ship *Golden Dream*. This vessel arrived in harbor of Pensacola on the 11th of June last. Having lost three of her crew at Havana and eight on her passage, she was ordered immediately to the quarantine station, and there cleaned, fumigated and whitewashed. After twenty-four days' detention, she was admitted to pratique and anchored about 500 yards from the central wharf.

On the 2d of August one of a "new crew," shipped eight days previously, was taken sick, and died on the 5th of August with black vomit. On the 6th of August three cases occurred in the city; they lived in the same house, about two squares distant from the water; the tenant of this house held the office of deputy harbor master, had constant communication with the shipping, and visited the Golden Dream frequently and remained on board several hours at a time; but I doubt the introduction of the infection into this house by his clothes, although several instances in which the disease was communicated to inmates cf houses by similar means came under my observation. My reasons for doubting in this instance will appear presently. On the 7th of August five more cases, three in a house contiguous to the harbor master's residence, and the other two in separate houses distant about a square from one another, and constituting, with others which appeared in an opposite direction, points as though "staked out," as a boundary east and west for the infected district, but the epidemic extended for at least a mile from the water in a northeasterly direction. After the 7th of August one or two cases only occurred daily until about the 15th of August, when the disease was declared epidemic, but in no instance did a case appear beyond the limits of the boundary just indicated, until new foci or centres of infection were created by persons who contracted the disease on board the Golden Dream or in the houses of the sick within the infected locality.

How the disease got into this district, and why this locality was selected as the theatre of its fearful operations we shall determine presently. The atmosphere was, for nearly a month previously to the breaking out of the fever, in a favorable condition to be leavened by any foreign zuma or morbific principle that might be introduced; it was very humid even in the absence of fogs and clouds; the mean temperature of June was 78° Fah., for July 80°, and for August 81°; atmospheric electricity negative, and the presence of ozone remarkably deficient—indeed absolutely absent, at least so far as the ozonometer indicated. The test-papers, which consisted of iodide of starch and sulphate of manganese respectively, weie carefully prepared and kept in a dark place.

The city was not in a good sanitary condition. The winds came from the southwest with very slight retrograde movements daily, from July 28th until about the 20th of August. The wind was very regular in its motions during the whole summer, assuming north as a point of departure at midnight, changing its direction eastwards came out from the east at 6 o'clock a. m., then veering to the south, continued in that quarter till 5 p. m., then veered to the southwest and remained there till 10 p. m., and afterwards proceeded rapidly reaching the north at 12 o'clock again—thus, in sailor's phrase, boxing the compass every twenty-four hours. Having no rain-gauge, I could not of course determine the amount of rain, but only three fair days obtained in June, ten in July, and twelve in August. The rains were very abundant, and often "fell in torrents." Now a moment's reflection with regard to the relative position between the ship and infected locality, and the meteorological phenomena described, will instantly suggest the answer to the inquiry, How did the morbific principle of the yellow fever get into the locality where the malady first appeared? By no means of course but the aerial current from the southwest, that swept rapidly over the infected ships from 5 o'clock, p. m., till 10 p. m., daily, from the 28th of July till some time after the disease became epidemic. Nothing was done to prevent the disease from spreading but cleaning out the privies and a general "cleaning up" of the premises of the citizens; this was ordered by the Board of Health in accordance with the city ordinance. The Board of Health had no medical adviser. Your correspondent suggested isolation and the use of disinfectants, and recommended ozone, iodine, iodoform, chlorine, sulphurous acid gas by burning sulphur. He used ozone in the City Hospital with excellent result; not one of the inmates laboring under other diseases contracted yellow fever, and every yellow fever case did well. It was obtained by simply putting a small piece of phosphorus on a bit of cork floating on water in a wide mouth bottle, which was then closed by a cork through which a tube was inserted that permitted the ozone to escape in sufficient quantity. Of course excess was avoided, to prevent irritation of the air passages of patients and attendants in the wards. With respect to type, if it means a form of the disease manifested by characteristics in which it may differ pathologically from another form, leaving out of consideration degrees of violence or grades, then there was no such thing manifested in the disease as it appeared in Pensacola last summer. All cases were characterized by phenomena which differed only in degrees of violence or grades and symptoms and signs, not pathognomonic, and these phenomena were manifested by two stages, the pyrexical and non-pyrexical stage, or the stage of pain and febrile excitement; thermometer indicates 103° to 105° Fah., and the calm stage in which the temperature never exceeded 99° Fah.

It was pathologically the same disease preceded by the same zuma or morbific principle. But there were some hybrids among the last sporadic cases, when malaria began to resume its empire, as it reigned just before the innovation of its ruthless engineer, yellow fever. Every endemic zymotic disease of a pyrexical nature is modified to some extent or converted by an epidemic of yellow fever into the nature of itself. I believe that the yellow fever poison is wholly destructive of malarial—this very late season has shown this clearly.

Just before the breaking out of the yellow fever last summer, remitting fever and other malarial affections were rife. Not a case was to be seen afterwards; every disease either assumed the livery of the epidemic malady or was converted into it, as above stated, and got well perfectly at the regular period of convalescence from yellow fever. No quinine or any other anti-periodics were used, showing that yellow fever had entirely destroyed the malarial poison. Remittent fever, uncomplicated, if not aborted by quinine or cured by it in a week, will continue for an indefinite period, and may "run into" a *typhoid* form or become intermittent. Yellow fever, then, is just as distinct from any of our endemical febrile affections as *small-pox* is from *urticaria*. Many of the cases that fell under my observation last summer had a miliary eruption which occurred most frequently in the mild grades; but, as a proof of this being identical in nature with the malignant form, the latter also presented the same miliary eruption in a number of cases. It had always, however, rendered our prognosis favorable, and yet one of my patients that died with black vomit, and had a deeply-bronzed skin and hemorrhages, was covered with it. Yellow fever is certainly exotic, and capable of propagation and spread anywhere within its geographical range under favorable conditions of the air, and not otherwise. Such favorable conditions of the atmosphere are as I described when referring to that which existed last summer, and exactly similar was the atmosphere before and during the epidemics of yellow fever in Pensacola in 1853 and 1867. In 1854, '58, '71 and '72, yellow fever, direct from its source aboard ships in the harbor of Pensacola, scattered its intended victims in houses on the water side, from thence they were transported through the streets in open conveyances to the United States Marine Hospital, then under my charge; and in not a single instance was the disease communicated to others in the city; a few of my convalescents in the hospital, however, contracted it. The yellow fever cases could not be separated from the others, and the wards being infected, of course, those liable necessarily became subjects of it. There are so very many important facts scattered through the pages of our medical literature that, were they all collected, there would be sufficient perhaps to lead us to ultimate conclusions in regard to meteorological phenomena as connected with disease. If medical men could be induced to keep meteorological tables in connection with the history, etc., of the diseases that fall under their observation, and publish them, many new and important facts might be elicited that, together with those already known, would make a large addition to our knowledge of the laws which control the existence of the organic world, so as to enable us to prevent disease, and consequently avert many of the ills to which humanity is daily subjected, and it is to be hoped that under the influence of such a noble organization as the "American Public Health Association," such a system of sanitary measures may be devised and established as will not only lead to the promotion of the health and longevity of our people, but to what is closely connected with them, namely, social order and the prosperity of the nation.

It is easy to discern, doctor, that I have written this communication hurriedly. It had to be so necessarily, or it never would have been written. I wish I had time to revise or copy it. But the facts are there, and though mixed up perhaps with too many words, they are none the less TRUE FACTS.

I am, very truly, yours, &c.,

ROBT. B. S. HARGIS.

EDITORIAL.

Spare Copies.

The issue of No. 1 of this JOURNAL having been entirely exhausted, the Editor and Proprietor respectfully request, that all spare copies may be forwarded to them, addressed to James A. Gresham, No 92 Camp street. The Proprietor will not only feel obliged by compliance with this request, but will promptly meet all incident expenses.

Wishing to Buy a Diploma.

The following letter was handed to us by the Dean of the Medical Department of the University of Louisiana, and is published for the benefit of those concerned in such matters. We think by the way, that it would be better if all such propositions made to institutions authorized by their charters to grant diplomas, were promptly and fully ventilated. It cannot otherwise be known how many schools may not have been honored with similar propositions from this same person, who seems so ambitious to become an M.D. that he is willing to attain his purpose in a surreptitious manner.

Medical Department, University of Louisiana :

Having studied Medicine and Surgery for the past two years, and being compelled to give it up on account of sickness, should like to *buy* a *diploma* from your college, merely for the degree, as I do not intend to practice medicine.

Yours, &c.,

C. HASSE,

102 West 34th street, New York City.

New Books.

Whenever book publishers send new books of which they desire a critical review, it is requested that two copies be furnished. One of these is always sent to some competent reviewer who has made its subjects a special study, while the second is retained in the Editor's library for his own reference.

The Journal.

The 6th number of the Journal will complete the first volume. It will be issued promptly on the 1st of May, and will be provided with a carefully prepared Index and Title Page, ready for binding. We hope that our labors to produce a periodical worthy of a permanent place in the libraries of our professional public have been successful.

METEOROLOGICAL REPORT FOR NEW ORLEANS.

Table I---January.

Day of Month.	Temperature. Maximum.	Minimum.	Range.	Mean Barometer Daily.	Relative Humidity—Mean.	Rain fall—inches
1	69	54	15	30.27	74	
2	73.5	56	17.5	30.24	71	
3	73.5	55	18.5	30.11	80	
4	77	64	13	30.08	78	
5	49	45.5	3.5	30.13	87	.84
6	40 5	36.5	4	30.10	83	
7	52	32	20	30.24	70	
8	60	36.5	23.5	30.14	67	
9	70	52	18	30.01	72	
10	70	48	22	30.07	76	
11	73	55	18	30.12	75	0.4
12	73	57	16	30.13	76	
13	73.5	60	13.5	30.11	78	
14	50.5	45.5	5	30.19	75	
15	44	38	6	30-23	61	
16	39	34.5	4.5	30.16	88	.10
17	55	36.5	18.5	30.15	81	
18	63.5	49.5	14	30.16	86	
19	70	51	19	30.15	79	.10
20	73.5	59	14.5	30.14	85	
21	75	59.5	15.5	30.06	79	
22	75	64.5	10.5	30.01	88	.53
23	66	57	9	30.29	71	
24	61	59	2	30.58	50	.26
25	58.5	39.5	19	30,62	53	
26	62	43	19	30.46	75	
27	70.5	54.5	16	30.15	86	.26
28	64	55	9	30.31	72	
29	61.	46.5	14.5	30.39	70	
30	65	44	21	30.24	71	
31	69	52	17	30.13	79	
Mean	63.76	49.68	14.08	30.199	75.35	Total. 1.87

NOTE.—The mean temperature for January, 56.718° F., was 6.84° F. in excess of the mean for the corresponding month of 1873.

Table II---February.

Day of Month.	Temperature. Maximum,	Minimum.	Range.	Mean Barometer Daily.	Relative Humidity—Mean.	Rain fall—inches.
1	68.5	59.5	9	30.11	88	.27
2	62	53	9	30.03	94	.90
3	58.5	48	10.5	30.17	91	
4	58.5	45	13.5	30.30	70	
5	64	46	18	30.16	83	.80
6	60	57	3	30.06	87	.01
7	52	47	5	30.12	72	
8	58	43.5	14.5	30.15	73	
9	60	45	15	30.29	68	
10	56	41 5	14.5	30.29	62	
11	67.5	45	12.5	30.08	69	
12	71.5	54	17.5	29.93	74	
13	74	63.5	10.5	29.92	85	.10
14	70.5	62	8.5	30.00	85	
15	71.5	60	11.5	29.96	90	
16	72.5	60	12.5	29.91	80	
17	76.5	64.5	12	29.90	81	
18	64	57.5	12.5	29.99	79	
19	75.5	53	22.5	30.00	83	
20	77	68	9	29.95	82	
21	77.5	69.5	8	29.96	80	
22	77	69	8	29.99	85	.57
23	57	47.5	9.5	30.27	62	
24	53.5	45	8.5	30.18	78	.10
25	..	....	....	......	..	
26	..	....	....	......	..	
27	..	....	....	......	..	
28	..	....	....	......	..	
Mean..	00.00	00.00	00.00	00.00	00.00	Total. 2.75

V

Mortality in New Orleans from December 28th, 1873, to February 22d, 1874, inclusive.

Week Ending	Total Mortality.	Whites.	Colored.	Small-pox.	Malarial Fevers.
Jan. 4......	137	87	48	12	5
Jan. 11.....	126	75	48	12	8
Jan. 18.....	125	67	55	17	16
Jan. 25......	126	64	59	26	9
Feb. 1......	140	79	59	24	13
Feb. 8......	107	64	43	16	9
Feb. 15.....	131	72	55	23	6
Feb. 22.....	137	89	48	27	10
Total.......	1029	597	415	157	76

OBITUARY.

Death of Professor Henry Miller, of Louisville, Ky.—Resolutions passed at a meeting of the Physicians of Louisville.

At the meeting of the physicians of Louisville held in the school building corner Center and Walnut streets, Dr. R. C. Hewett was called to the chair.

Dr. J. J. Speed moved the appointment of a committee to draft resolutions upon the death of Prof. Miller, which motion was unanimously adopted, when the following gentlemen were appointed:

Dr. E. S. Gaillard,	Dr. U. E. Ewing,	Dr. Sam'l Brandeis,
" D. Cummings,	" John Crowe,	" H. Bullitt,
" E. D. Foree,	" Lewis Rogers,	" R. C. Holland,
" B. M. Wible,	" J. Speed.	

The chairman reported the following resolutions, which were unanimously adopted:

When, in the Providence of God, distinguished men are removed by death from the scenes of their earthly labors, it is the privilege of their associates and the duty of their friends to offer public testimony in their honor, and pay just tribute to their memory. Professor Henry Miller, of this city, having, after a few brief months of illness, been relieved of his sufferings by death, we, the physicians of Louisville, on this sad occasion do unanimously

Resolved, That we have heard of the death of our distinguished brother with sincere sorrow.

Resolved, That it is our pleasure to testify to his spotless character as a citizen, his great and deserved reputation as a practitioner, his uniformly honorable career as a teacher, his eminent success as an author, his unblemished record in his relations with his brethren; to the entire confidence inspired by him among the sick entrusted to his care; to the valuable services rendered by him to the many medical societies which he fostered and instructed; to his admirable observance of all professional rules and requirements, as the result of which he signally secured dignity and respect for that profession which he so eminently adorned.

Resolved, That we tender to his family our sincere sympathy; that a copy of these resolutions be sent to them, to the daily press of this city, to the medical journals of the State, and to all of the medical associations, domestic and foreign, of which he was either a regular or honorary member.

Resolved, That we will attend his funeral in a body, and unite with his very many bereaved friends in performing the last sad obsequies in behalf of one whose memory his city, his State, his country, and his profession will ever cherish with pride and admiration.

The meeting then adjourned.

DR. J. A. LARRABEE, *Secretary.*

THE

NEW ORLEANS

MEDICAL AND SURGICAL JOURNAL.

MAY, 1874.

ORIGINAL COMMUNICATIONS.

ARTICLE I. *Observations on the Yellow Fever Epidemic of* 1873, *at Memphis, Tenn.* By D. D. SAUNDERS, M.D.*

Memphis has been visited on three different occasions by yellow fever. The first epidemic was in 1855, and prevailed almost exclusively in the southern part of the city, commencing late and continuing until the latter part of November, killing some 800 of our citizens. The second was in 1867, and prevailed in the northeastern part of the city, confining itself pretty closely to the infected district. It was first announced about the 12th of September, and continued until the middle of November, claiming some 250 victims. The third visit of the fever was in 1873, of which we propose to speak more in detail. I was a resident of Memphis during the last two epidemics; the first occurred before I came to this city. I do not propose in this article to consider the literature of the fever, but simply to give the result of my own personal observation of it from its entrance on the 9th day of August up to the 16th of November.

From the most correct data we have, the fever was brought from New Orleans to Memphis by the tug "Bee," which landed on the 9th of August, near the foot of Exchange street, in a section of the city known as "Happy Hollow," and put off a sick man who went up to a house near by, occupied by one Reilly, and died there. His disease was pronounced malignant malarial

*Prepared in response to the request and inquiries of Prof. Joseph Jones, M.D., of New Orleans.

fever by Dr. Crom (who afterwards died of yellow fever himself), but with the same symptoms that his patient from the tug "Bee" had exhibited. In a few days after the arrival and sudden death of this man at Reilly's house, Reilly himself and two women living close by, who had helped to nurse, were taken with similar symptoms, and all died. The captain of the tug "Bee" was also attacked with fever and died on the way up the river, about New Madrid; his remains were brought back to this city and shipped by rail to Louisville, Ky. All of these cases proved afterwards to have been undoubted yellow fever. The fever gradually spread from Reilly's house, over a low, flat section of the city, known as "Happy Hollow," and thence north on Promenade street. The *infected district* proper extended from Washington street north to Auction, and from the river east as far as 4th street. The disease confined itself closely to this section for some time before extending its ravages to other parts of the city. The fever was slowly yet surely destroying its victims from about the middle of August to the 13th of September, before the alarm was publicly sounded, by our volunteer Board of Health. From this date it made rapid progress, and gradually spread into all parts of the city, taking the infected district as its radiating point. For a considerable time after this date, I could trace a distinct connection with that district of every case I treated outside of it. The infected district was inhabited mostly by our Irish and German population, many of the latter Hebrews, so that the mortality was very heavy among our foreign population. They were a laboring class, many of them quite poor, and in not a few instances rather destitute. In that section of the infected district known as "Happy Hollow," the houses are small shanties—in many instances built upon piles driven into the ground to keep them above the water, when rises in the river, which overflowed much of this hollow, took place. This hollow is a low, flat basin at the foot of the bluff, and is much of it new made ground from the deposits in shifting its current, and is known as "batture land." The surface drainage from a large part of the bluff is into this basin, and it is known to be the hot bed of malarial trouble in the early part of the spring, summer and fall. Many of our physicians, not expecting yellow fever, mistook it in the early part of its advent for violent malarial disease, and so treated it, with frightful mortality in the infected district. In fact it was not until the early part of September that the profession were convinced that yellow fever certainly prevailed in our midst, and some few even held out for a much longer time in calling everything they saw malaria, because, forsooth, some of their cases recovered when treated as they had always treated malaria troubles.

After the announcement, by our volunteer Board of Health, of the presence of yellow fever, on the 13th of September, there was a general stampede of our citizens for places of safety, and every one whose surroundings and duties permitted, left the city at once, and they did not stand on the order of their going; in truth, there was a perfect "get-away-who can" panic. After this wholesale exodus, there were left some 20,000 people. Many who had gone off for the summer had not then returned, and a large number of those who remained during the epidemic, only came into the city during the day to attend to such business as was absolutely necessary, and returned to the country to spend the night. I think we may safely calculate that not more than 15,000 people slept within the corporate limits of the city during the prevalence of the epidemic, out of a population of 50,000 during the busy winter months. The colored people soon became alarmed, and left the city in large numbers. Out of the remaining population of, say 15,000, who slept in the city, I calculate about 7000 had the fever, and of this number 1800 died, or about 25⅗ per cent. of those attacked. The disease seemed to be more malignant in the infected district from the first than anywhere else, and maintained this characteristic to the last; due, apparently, not only to the greater concentration and more overpowering influence of the poison, but to the inability on the part of physicians and nurses to control their Irish patients, who would persist in disregarding instructions, and getting out of bed when able to do so unassisted.

The type of the disease partook more of the renal and abdominal than the cerebral. Black vomit and hemorrhages from the mucous surfaces were quite frequent, and urinary suppression, with uremia, coma and convulsions to close the vital scene, was a common termination. Chilly sensation without any marked chills, persistent frontal cephalalgia, acute and very annoying rachialgia, irritable stomach, hot skin, either dry or moist, and a pulse ranging from 110 to 120 beats per minute, with a temperature from 102° to 107°, most commonly ushered in the febrile stage. This febrile stage averaged from 68 to 72 hours, sometimes shorter, and at others lasting four or five days; the severity of the attack seemed in proportion to the duration of the febrile stage, particularly if the thermometer held up in the same ratio with the frequency of the pulse. In using the thermometer, which I applied in the mouth between the gums and cheek with the lips closed, I found the average temperature on the first visit to be about 102° 6′. My observation taught me to watch with solicitude those cases of fever in which the pulse showed no disposition to subside towards the normal standard at the end of 72 hours, particularly if the thermometer kept above 103°. I think we are now warranted in considering *uncomplicated* yellow fever a fever of one paroxysm, lasting from 48 to 80 hours. Whenever the febrile paroxysm lasts beyond 80 hours, look out for complications, and they will most generally be found. In a large number of my cases the urine was found to be acid, and containing more or less albumen; the albuminous deposit characterized the earlier part of the disease, and was not generally persistent. The daily average temperature and pulse of the tabulated cases may be seen from the average table, also the daily average of the same in the 10 fatal cases, separately prepared and accompanying this report.

By an examination of the tables of cases under the head of "Remarks," it will be seen that 5 cases recovered after having what I considered undoubted black vomit. Another interesting point which I would call attention to, is the appearance of the menses within the first few days of the fever in all menstruating females. I find on examination of tables under the head of "Remarks," 9 cases of menstruation on the third day of the fever, 4 cases on the fourth day, and 4 cases on the 5th day. When the menstrual flow was not profuse, I did not observe any injurious effects save the weakening influence of the loss of so much blood, when all the powers of the whole system were necessary to secure rapid recovery. In no instance did I learn of a clot being passed with the menstrual flow. I did not see a single female, who was in the menstruating age, pass through yellow fever without menstruating between the third and fifth day of the fever. I saw no case of abortion, and only one case of pregnancy at 7 months, attacked by fever, and in the latter case it was very mild, and there was no premature labor; the woman has since given birth to a perfectly healthy, well formed child. I do not wish to be understood as saying, there were no malarial troubles prevailing here during the epidemic of yellow fever, as I observed a number of such cases myself, and in some few instances, characterized by hæmorrhagic tendencies from the bowels and kidneys. I am of the opinion, however, that they may be easily distinguished from true yellow fever by noting well the pulse and temperature. In the malarial fevers the temperature will certainly drop several degrees within the 24 or 48 hours, and the pulse will most generally follow suit. So certain was I of this fact, that on my second visit to my patients twenty-four hours after the first, I pronounced the cases unhesitatingly malarial or yellow fever, and I had no occasion to regret my diagnosis in a single instance. This guided me in my treatment as to whether I should use quinine, as it will be seen hereafter that I used no quinine in my cases of uncomplicated yellow fever. When I found the temperature the same, or higher, on the second than on the first visit, I concluded I had a case of yellow fever to deal with, provided the pulse held up in the neighborhood of its mark the previous day.

The tables accompanying this report show yellow fever to be a full-fledged fever within a few hours after its initiation, and the circulation is as rapid then as it ever gets to be unless complications arise, or in the winding up of the fatal cases. The pulse begins to diminish in frequency within a few hours of the commencement of the fever, and in the stage of convalescence will descend below the normal standard. I saw them descend to 36 beats per minute and the patients recovered. The temperature, however, will generally either hold its starting point, or gradually ascend for from 72 to 120 hours, and then, if there are no complications, commence a gradual descent with the pulse and go below the normal standard of 98° 5′ in convalescence. I saw the thermometer descend below 95° and the patients recover. In those cases where the pulse and thermometer descend gradually together, after the second day no apprehension of danger need be entertained; they will always get well; such was the result of my observation. Believing yellow fever to be a specific disease due to a specific poison, and not dependent on or influenced by what we term malaria, it is a very important question to determine the effects of the two poisons upon one and the same system at the same time. It cannot be denied that the two poisons may exist at one and the same locality, and may impress the same system. I am sure I have seen cases of malarial intermittent and yellow fever in adjoining houses during the epidemic here, but they were not in the infected district. The cases of intermittent fever yielded readily to the usual treatment, and I even treated cases of hæmorrhagic malarial fever successfully with large doses of quinine, side by side with yellow fever patients to whom I gave no quinine, trusting mainly to the thermometer for my diagnosis.

For example, I will state a case to make myself more fully understood, and to draw out the very important point I am after. A. B. has been subject to chills and fever during the months of July and August, and while under treatment he is taken with a fever in which the thermometer shows no descent for several days, and the pulse keeps up for 72 hours, and then gradually drops down, and he has what we must admit is yellow fever. He goes on apparently doing well until he is safely convalescing, when all on a sudden he has another chill and rise of fever, which assumes a paroxysmal type, as shown by rise and fall of pulse and temperature, and quinine cures him. I am stating no hypothetical case, but one case of a number which I observed during the month of September last. The poetical idea of taking the "new infection to their eye, and the old of the new will die" may do for poets, but scientific observation must not thus easily be satisfied. I must conclude that the epidemic poison of yellow fever may be engrafted upon the malarial poison in the same system, yet yield its own fruit; and when that system is left in a debilitated condition the malarial poison returns and reasserts its sway, though it may have been temporarily overshadowed by its more powerful tropical visitor. I feel sure that had not A. B. been laboring under the influence of malarial poison, he would have recovered without any paroxysmal fever and without the use of quinine, as that remedy is powerless for good in uncomplicated yellow fever. I know I am now treading on authority and "holy ground," yet I feel that my "sandals are off," and with all due respect, my observations have been made carefully, laboriously and truthfully. I think I may safely say that a careful observer, with self-registering thermometer and watch in hand, can positively diagnosticate yellow from malarial fever within 36 hours from its commencement, and should be able to regulate his treatment accordingly. The thermometer is not subject to sudden drops in yellow fever during the first few days, unless there is a very large malarial element in the case, and whenever this phenomena is seen, it calls in trumpet tones for the fearless administration of quinine in liberal doses. I am of the opinion that no medical practitioner should be without his thermometer in an epidemic of yellow fever, as it will prove a positive guide in treatment, and will in a large number of fatal cases, enable him to make a correct prognosis in the early part of the disease. I saw no case of yellow fever recover when the thermometer marked over 106° on the first and second visits, and I saw no fatal case where the pulse and the thermometer gradually descended together below the normal standard within the first ten days.

I believe, with Prof. Joseph Jones, that when the temperature ranges very high from the first the patients may die suddenly, overpowered by the poison, as in cases of sunstroke.

My cases of yellow fever were treated with the idea always in view, that I was dealing with a disease in which there was a blood poison tending towards death by the heart, and through the circulation by the nervous system. Uncomplicated cases of yellow fever, properly cared for and supported, will generally recover, but there is in the depressed condition of the nervous system and want of proper balance in the circulatory system, a great tendency to congestion of the viscera, more particularly the stomach, kidneys and brain. If the circulation can be controlled within proper bounds, and the kidneys and skin kept moderately active, the chances are much better against visceral complications. My treatment of these cases was very simple, and easily carried out by any good nurse.

When called to a case of yellow fever within the first few hours of its commencement, I ordered a warm mustard pediluvium, placed in the bed under the bed clothing, and permitted the patient's feet to remain in it for fifteen or twenty minutes, while the covering was well packed around his neck and body so as to get the skin moist and acting well. After this I had him comfortably covered with moderate covering in a room with a thermometer hanging on the wall and marking from 68° to 70°. I desire the skin to be simply soft; excessive perspiration is weakening, and can certainly not prove ultimately beneficial, because the patient will have need for all of his powers of resistance when the febrile stage has passed, and the great prostration of system calls loudly "help me, Cassius, or I sink." I may have been mistaken, but I have an idea that when cases are treated by such prolonged and excessive sweatings, the kidneys break down, and they die more frequently from uremia. If my patient's bowels were constipated, or stomach full, they were emptied—the first by very mild saline aperients, and the other by tepid water emetics. Then commenced my treatment for the febrile stage, to control the circulation and prevent congéstions of internal organs, by giving Fleming's Tincture of Aconite in from 2 to 5 drop doses every 2 to 4 hours, as necessities and ages of patients required. This aconite was given in neutral mixture, made fresh, and rendered more palatable by the addition of simple, or orange-peel syrup. This mixture rarely disagreed with the stomach, and was taken without objection by the patients. Believing that the mischief in yellow fever is in proportion to the intensity and length of the febrile stage (for it is during this stage that the molecular changes take place), if we can shorten or lighten this stage by treatment, we have then struck the key note to the management of the whole trouble. I believe the large proportion of yellow fever cases will run from 72 hours to four or five days, as shown by the pulse and thermometer. I am of the impression, without positively knowing it, that aconite judiciously administered in these cases *for its effect*, will shorten and lighten the febrile stage, and lessen the chances of visceral complications. In a number of cases I noticed a modified circulation within the first twelve hours of treatment, and a great lessening of headache and backache. I gave my patients to drink a little lemonade or water, and crushed ice when much tendency to nausea existed. The Creole method of filling the stomach with warm orange-leaf tea, &c., never struck me as being based upon sound practical observation, for an organ already crippled and struggling for life is scarcely in condition to be burdened still further with such slops. During the febrile stage nourishment is not urged upon the patient, but if desired, a little fresh buttermilk, given at short intervals, will be found grateful and palatable, and will be frequently eagerly sought by the sufferer, as the mild acidity of it helps to allay the constant and annoying thirst which exists. About from the 50th to the 80th hour of the febrile stage, the pulse drops to or below the normal standard, and your patient expresses himself as feeling better yet greatly prostrated; begins, generally, not always, to turn yellow. At this time my course was to stop the aconite mixture, and commence a gently supporting plan, with rich, well made beef tea, and milk toddy, given alternately in small quantities at regular intervals; the amount of this support to be regulated by the strength and frequency of pulse, and range of thermometer as observed at the morning and evening visits. I added a little lime water to the milk and whiskey when the stomach seemed inclined to fret, and applied mustard sinapisms over abdomen. The milk toddy was made with good whisky and fresh sweet milk, in the proportion of 1 tablespoonful of whisky to 4 of milk. At this stage, if there was sensation of much fulness about the abdomen, warm water enemata were resorted to, gently emptying the lower bowel, which frequently induced an action from the whole canal. I found milk toddy to answer better than champagne, as the wine generally soured and generated unpleasant gaseous belching. When the milk toddy failed to answer, I substituted mint toddy made with good brandy, water and garden mint; this would frequently rest quietly in the stomach when nothing else in the shape of support would. If the urgency of the symptoms required it, stimulating enemata of brandy and beef tea were resorted to. I frequently quieted very irritable stomachs by giving 20 drops of chloroform in a teaspoonful of glycerine. In two cases when irritability of stomach was very annoying, I gave 5 drops of Fowler's solution in a teaspoonful of rose water with immediate benefit, and in another case tincture of nux vomica, in 4 drop doses, seemed to act equally well.

I mention these minor points, as the irritable stomach is frequently very troublesome and exhausting to these patients. I permitted no solid food taken for some days after convalescence set in. I might mention that blisters over the epigastrium did not seem to act well, save in a single instance when, I feel sure, the life of the young man was saved by one. I treated in private practice during this epidemic 187 cases of yellow fever; have tabulated 73 of them only, including the 10 which died. I have not tabulated all, as I deemed these 73 cases sufficient to establish the principle as to temperature, circulation, &c. It will be seen from the above that my loss was about 5¼ per cent. of those treated. My reasons for thinking quinine useless in *uncomplicated* yellow fever, are simply based upon my trial of it in several cases during the febrile stages. I watched closely the pulse and thermometer while administering it freely, and noticed that instead of lowering the temperature it arose more rapidly than when omitted, increased the headache and irritable stomach, and always the restlessness of my patients. Its supposed utility in this fever, I think, must be due to the want of close thermometric discrimination between it and malarial troubles, in the latter of which it is invaluable. No one can possibly make this important distinction without closely watching the temperature with an accurate self-registering thermometer, applied two or three times a day. Accompanying this report will be seen the monthly mean of barometer, thermometer, monthly velocity and prevailing direction of the wind, and the amount of rain fall for the months of August, September, October and November, which have been kindly furnished me by J. W. Birt, Assistant Observer in the Signal Service of U. S. A. at this point. We had light frosts about the 7th and 8th of October, and quite a heavy one about the 20th of that month. From this time the fever very perceptibly abated, though the mortuary lists kept up pretty well for some two weeks thereafter, and new cases occurred as late as the middle of November.

As to the incubation stage of this fever, my observation placed it between 24 hours and 16 days, having seen one case where a gentleman who had been absent all summer was attacked in 24 hours after his return, and another who went away from the city was attacked on the 16th day after leaving.

Yellow fever cannot be, strictly speaking, a contagious fever, as variola, measles, &c., or single cases could not so frequently occur in the midst of a family and be nursed with impunity, and without precaution by them, and yet no other member of the family have it; this I observed repeatedly during the epidemic outside of the infected district, and so did my partner, Dr. B. W. Avent. We are all forced to admit its infectious character within certain districts, but it is questionable whether the presence of a yellow fever subject "*per se*" will convey the poison directly to another person; something more than mere contact of person with person is necessary to contract the disease. What the medium of conveyance is I am not able to say, but time and close scientific observation will finally point it out. I am satisfied that with proper treatment and careful nursing, yellow fever may be robbed of much of its terror, and the rates of mortality reduced within the bounds of other severe epidemics. I believe the time has come when 90 per cent. of those attacked should recover. I have not penned this paper with any idea of writing an exhaustive treatise on yellow fever, but simply to state the results of my own personal observation at the bedside, during the recent epidemic. I have endeavored to state plainly all that I deem practical which came under my observation. I have indulged in no theory, but dealt with stubborn facts, and have tried to state only that which I know to be true.

Table No. I.

Number of Case.	Temperature and Pulse.	DAYS OF DISEASE. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	Remarks and Result.
1..	Temp.	1(2° 0′	102° 6′	103° 0′	103° 0′	102° 5′	102° 0′	101° 5′	101° 0′	99° 0′	99° 0′	98° 5′	98° 0′	97° 5′	98° 0′	Recovered,
	Pulse.	110	108	99	80	80	80	72	70	66	62	56	60	66	72	
2..	Temp.	103	103 3	103 5	103 5	103	102 5	102	101	100 5	99	98 5	98	98 5	98 5	Recovered.
	Pulse.	116	114	110	100	84	76	70	70	68	60	60	56	60	68	
3..	Temp.	103	104	104 5	104	103	101 5	100 5	99	98 5	98	97 5	98	98 5	......	Recovered.
	Pulse.	120	118	104	84	86	72	72	70	66	60	57	60	70	......	
4..	Temp	401	101 3	101	100 5	99 5	98 5	98	97	96	95	97	98	98 5	......	Recovered.
	Pulse.	98	84	80	72	65	58	52	47	42	36	50	62	70	......	
5..	Temp.	104	104	104	103 5	103	102	101	100	99	98	98	98 5	98 5	.....	Recovered.
	Pulse.	108	104	100	84	76	70	66	62	60	63	68	72	75	......	
6..	Temp	105	105	105	104	103	102.	101	100	99	98 5	98 5	......	......	.....	Boy, aged 7 years—marked delirium and convulsions. Recovered.
	Pulse.	130	120	100	84	75	68	68	71	72	72	72	......	......	.....	
7..	Temp	101	101	101 5	101	100	99	98 5	......	......	....	.....	......	......	.....	Recovered.
	Pulse	100	98	84	72	70	68	70	......	......	......	......	.....	.....	......	
8..	Temp		101	101 5	101	100 5	99	98 5	98	98	98 5	......	.....	.....	......	Slight black vomit on 3d day. Recovered.
	Pulse.		120	100	84	72	70	70	70	63	72	....	......	......	......	
9..	Temp.	103	103 3	103	103	102	100	99	98 5	98	97 5	98	98 5	......	.....	Recovered.
	Pulse.	108	100	84	72	68	66	60	56	54	58	62	72	......	......	
10..	Temp.	104	104	103 5	103	102	100	99	98 5	93	97 5	98	98 5	......	......	Had been in city only 24 hours when attacked. Recovered.
	Pulse.	112	100	84	72	63	66	60	56	54	58	62	72	......	......	
11..	Temp.	104	104 5	105	105	105	105	103	102	101	99	98	98 5	98 5	.....	Second attack—the first was in 1860 in New Orleans. Had black vomit 4th day. Made a slow recovery.
	Pulse.	100	96	95	90	86	72	70	70	65	60	50	56	65	......	
12..	Temp.		102	102	101	100	98 5	98	93	98 5	98 5	......	.....	......	......	Female, aet. 40. Menstrual flow set in on 4th day. Recovered.
	Pulse.		96	80	76	76	62	58	62	70	72	......	......	......	......	

Table No. 2

Number of Case.	Tempera-ture and Pulse. 1	Days of Disease. 2	3	4	5	6	7	8	9	10	11	12	13	14	15	Remarks and Result.
13	103° 0′ 100	104° 0′ 98	104° 5 90	104° 0′ 80	103° 0′ 78	102° 0′ 70	101° 0′ 62	100° 0′ 60	99° 0 60	98° 5 60	98° 0′ 56	98° 5′ 60	98° 5′ 65	98° 5′ 70	98° 5′ 72	Recovered.
14	....	105 98	105 4 90	105 5 72	104 89	104 108	104 130	....	....	....	....	....	....	....	... .	Male, aet. 40. Hæmorrhage from gums and mouth. Black vomit on 4th and death on 9th day.
15	101 110	101 5 108	101 5 100	101 84	100 72	99 66	99 60	98 5 60	98 56	98 54	98 5 60	98 5 70	....	....	....	Boy, aet. 14. Recovered.
16	102 118	102 112	102 100	102 84	101 72	100 72	99 70	98 5 66	98 66	68 70	98 5 75	98 5 76	....	....	....	Girl, aet 11. Recovered.
17	105 126	106 120	106 100	104 120	100 130	98 5 140	....	....	....	....	....	....	....	....	....	Male, aet. 30. Mild delirium; escaped into street. Had black vomit and died of uremia on 6th day.
18	....	104 125	105 120	105 120	104 108	103 100	102 96	100 84	99 84	99 80	98 5 72	98 72	98 5 72	....	....	Female, aet. 40. Menses on 5th day. Slow recovery.
19	102 125	103 122	104 120	102 84	102 76	100 72	99 66	98 5 60	98 60	98 68	98 5 72	98 5 72	....	....	....	Female, aet. 52. Menses on 3rd day. Recovered.
20	....	103 120	103 5 115	103 5 112	103 84	102 80	101 80	100 80	99 76	98 72	98 66	98 5 72	....	....	....	Female, aet. 9. Hæmorrhage from gums and mouth. Recovered.
21	103 126	103 2 118	103 5 106	103 84	102 80	101 80	100 76	99 70	98 5 60	98 60	98 5 72	98 5 72	....	....	....	Female, aet. 20. Menses on 5th day. Recovered.
22	104 122	104 5 120	104 5 120	104 118	103 5 108	103 100	102 5 90	102 90	101 86	100 84	99 80	98 5 72	98 66	98 5 72	....	Male, aet. 40. Recovered.
23	103 92	103 5 90	104 90	104 84	103 5 82	103 80	102 80	101 72	100 70	99 68	98 5 65	98 60	98 5 72	....	.. ..	Male, aet. 36. Recovered.
24	102 120	103 118	103 112	102 108	101 5 90	101 84	100 80	99 75	98 5 70	98 70	97 5 68	98 65	98 5 70	98 5 72	....	Male, aet. 32. Recovered.
25	....	103 116	103 108	102 84	101 80	100 80	99 80	98 5 80	98 70	98 70	98 5 76	98 5 80	....	....	....	Male, aet 11. Recovered.

Table No. 3

Number of Case.	Temperature and Pulse.	Days of Disease.														Remarks and Result.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
26	....	105°0	105°0	104°0	102°0	101°0	100°0	99°5	99°0	99°0	98°5	98°0	98 5	98 5	98 5	Female, aet 5. Hemorrhage from mouth, gums and tongue. Mild delirium. Recovered.
	....	112	108	100	94	84	84	80	80	80	75	70	72	80	80	
27	......	105	105	105 5	106	105	104	103	102	100	99	98	97	96	......	Male aet. 30. Black vomit on 11th day. Uremia and on 14th day death.
	......	120	120	118	112	100	98	96	90	100	112	120	130	130	......	
28	102	102	102	101 5	101	100 5	100	100	99	99	99	99	99	99	99	Male, aet 5. Temperature and pulse kept up for some days. Slow recovery.
	120	120	118	112	108	102	106	100	90	84	84	84	84	81	80	
29	101	101 5	102	101 5	101	100	99	100	101	101	101	99	99	99	98 5	Male, aet. 40. Had parotid abscess, opening into ear, hence rise of temperature and pulse on 8th day. Recovered.
	98	96	90	84	80	76	80	100	100	100	95	84	80	80	76	
30	102 5	102 5	103	102	101	100	99 5	99	98	98	98 5	98 5	......	......	......	Female, aet. 18. Menses 4th day. Recovered.
	113	108	86	84	80	72	66	60	54	50	65	72	.....	......	.....	
31	......	104	104 5	104	103	102	101	100	99	98	97 5	97 5	98	98 5	...	Male, aet. 16 years. Delirium; marked jaundice; scant urine. Slow recovery.
	......	120	118	100	96	90	84	72	66	60	52	60	68	72	.....	
32	......	103	103 5	103	103	102	101 5	99 5	99	98 5	98	97	96	......	......	Male, aet. 14. Black vomit on the 4th day. Great restlessness and delirium. Recovered.
	......	122	118	116	112	108	100	84	76	72	60	62	50	......	......	
33	104	104 5	104	103	102	101	100	99	98	97	97	98	98 5	......	.....	Male, aet. 40. Marked delirium. Recovered.
	120	115	108	100	94	90	84	72	60	56	60	72	72	......	......	
34	102	102 5	103	102	101	100	99	98 5	98	97 5	97	96	97	98	98 5	Female, aet. 40. Menses 3d day. Recovered.
	98	98	96	84	72	70	66	50	50	48	40	36	45	56	70	
35	......	105	105 5	106	106	106	107	......	....	......	......	......	......	.....	......	Male, aet 25. Great nervous prostration from first, and death on 7th day apparently from this cause.
	......	128	125	125	128	130	135	.....	......	......	.....	....	......	......	......	
36	103	103	103	101	100	99	98 5	98	98 5	98 5	......	.....	......	.....	......	Female, aet. 42. Menses 4th day. Recovered.
	120	118	110	90	84	72	70	60	70	72	......	.....	......	......	......	
37	.....	102	102 5	102	101	100	99	98 5	97	96	97	97 5	98	98 5	......	Female, aet. 18. Menses 4th day. Recovered,
	......	98	90	80	75	70	66	60	52	50	65	68	70	75	......	

Table No. 4

Number of Case.	Tempera-ture and Pulse. 1	Days of Disease. 2	3	4	5	6	7	8	9	10	11	12	13	14	15	Remarks and Result.
38	......	105° 0'	105° 3'	104° 0'	102° 0'	101° 0'	100° 0'	99° 0'	98° 5'	98° 0'	98° 0'	98° 5'	......	......	......	Female, aet. 25. Hæmorrhage from mouth, gums and tongue; profuse menstruation. Slow Recovery.
	......	125	122	104	108	100	96	94	84	76	66	70	......	......	......	
39	......	......	106	107	......	......	......	......	......	......	......	......	......	......	......	Female, aet. 20. Was attacked 40 miles from city two days after leaving. Returned on 3d day of fever, and died on 5th day.
	......	......	130	130	......	......	......	......	......	......	......	......	......	......	......	
40	......	......	106	106	106	......	......	......	......	......	......	......	......	......	......	Female, act. 22. Was attacked 40 miles from city with sister above, and returned on 3d day. Menses profuse. Died 5th day.
	......	......	130	130	140	......	......	......	......	......	......	......	......	......	......	
41	......	103° 0'	104	103	102	101	100	99	98 5	97	97	98	98 5	......	......	Male, aet, 50. Marked jaundice. Slow recovery.
	......	98	94	84	80	70	60	60	52	45	56	60	72	......	......	
42	103	103 5	103 5	103	102	101	100	99	98 5	98	97	96	98	98 5	......	Male, aet. 28. Recovered.
	108	106	100	84	72	60	60	60	52	46	42	40	64	72	......	
43	104	104	104 5	104	103	102	101	100	99	98 5	98	97	98	98 5	......	Female, act. 36. Menses 4th day. Recovered.
	100	100	100	98	84	80	72	68	66	60	52	50	60	72	......	
44	102	102	102 5	103	102	101	100	99	98 5	98 5	......	......	......	......	......	Male, aet. 44. Recovered.
	100	98	90	84	72	72	70	60	60	70	......	......	......	......	......	
45	101	102	103	102 5	102	101 5	101	100	99	98	97	96	97	98	98 5	Male, act. 26. Recovered.
	100	98	95	84	80	76	72	68	60	52	40	40	50	60	72	
46	......	103	103	102	102	101	100	99	98 5	98	97	97	98	98 5	......	Female, act. 16. Menses 3d day. Recovered.
	......	120	118	108	96	84	80	72	70	65	60	60	65	70	......	
47	......	106	106 5	107	......	......	......	......	......	......	......	......	......	......	......	Male, aet. 40. Black vomit on 3rd day. Death on 5th day.
	......	115	120	140	......	......	......	......	......	......	......	......	......	......	......	
48	......	102	102 5	102	100	99	99	98	98	98 5	98 5	98 5	......	......	......	Female, aet. 18. Menses 4th day. Recovered.
	......	100	99	84	84	72	72	60	60	65	72	72	......	......	......	
49	......	106	106	107	......	......	......	......	......	......	......	......	......	......	......	Male, act. 28. Habitual drinker. Black vomit on 2d day. Urinary suppression. Death on 5th day.
	......	118	125	140	......	......	......	......	......	......	......	......	......	......	......	
50	......	106	106	107	......	......	......	......	......	......	......	......	......	......	......	Female, act. 40. Black vomit from 3d day. Uremia and death on 5th day.
	......	120	120	140	......	......	......	......	......	......	......	......	......	......	......	

Table No. 5.

Number of Case.	Temperature and Pulse. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	Remarks and Result.
		Days of Disease.													
51	.....	103° 0′	103° 0′	103° 0′	102° 5′	102° 0′	101° 0′	100° 0′	99° 0′	98° 5′	98° 0′	98° 5′	98° 5′	98° 5′	Female, aet. 20. Menses 4th day. Recovered.
	......	116	108	100	100	84	82	72	60	60	60	65	70	72	
52	103	103	102	101	100	99	98 5	98	98 5	98 5	......	......	.....	......	Male, aet. 30. Recovered.
	120	120	110	86	80	72	72	65	72	72	......	......	.....	.....	
53	103	103	102	101	100	99	98 5	98	98	98 5	98 5	98 5	......	......	Female, aet. 30. Menses 5th day. Recovered.
	112	108	90	84	72	72	60	60	60	64	72	72	......	.....	
54	103	103	102	101	100	99	98 5	98	98	98 5	98 5	......	......	....	Female, aet. 36. Menses 4th day. Recovered.
	115	108	92	84	80	72	72	10	60	68	72	.....	.....	......	
55	104	104	103	102	100	99	98 5	98	97	98	98 5	98 5	.....	......	Female, aet. 36. Menses 3d day. Recovered.
	120	115	108	100	84	76	72	60	56	60	68	72	......	......	
56	102	102 5	103	102	101	100	99	98	98	98 5	98 5	98 5	......	......	Female, aet. 35. Menses 5th day. Recovered,
	118	112	100	90	84	72	70	60	60	70	75	75	.....	......	
57	.....	103	103 5	103 5	103	102	100	99	98 5	98 5	98	98 5	98 5	......	Male, aet 30. Recovered.
	......	112	108	94	84	72	72	60	60	60	58	65	72	......	
58	102	103	103 5	103	102	100	99	98 5	98	98 5	....	.....	....	......	Female, aet. 25. Menses 3d day. Recovered.
	120	118	110	99	84	72	72	60	60	72	......	......	......	......	
59	......	102	103	103	102 5	102	101	100	97	98 5	98	98 5	.....	....	Male, aet 13. Recovered.
	......	112	108	94	80	72	72	65	60	60	60	68	.....	......	
60	......	......	103	102	101	100	99	98 5	98	98 5	98 5	......	....	.....	Male, aet. 22. Recovered.
	.....	......	108	100	84	72	70	68	65	70	72	.....	......	.....	
61	......	103	103 5	103	102	101	100	99	98 5	98	98 5	98 5	.....	.....	Female, aet. 58. Recovered.
	......	118	110	100	92	84	72	65	56	52	65	72	.....	......	
62	103	103 5	104	103 5	108	102	100	99	98	98	98 5	98 5	.....	......	Female, aet. 16. Menses 4th day. Recovered.
	120	118	112	100	86	78	72	68	62	60	68	72	......	......	
63	102	102 5	103	103	102	101	100	99	98	98	98 5	98 5	......	......	Femals, aet. 35. Menses 3d day. Recovered.
	110	108	100	92	84	80	72	65	56	60	70	72	......	......	

Table No. 6.

Number of Case.	Tempera-ture and Pulse. 1	Days of Disease. 2	3	4	5	6	7	8	9	10	11	12	13	14	Remarks and Result.
64	102° 0 112	103° 0' 108	103° 0' 103	103° 0' 100	102° 5' 94	102° 0' 86	101° 0' 80	100° 0' 72	99° 0' 72	98° 0' 60	98° 0' 60	98° 5' 72	98° 5' 72	....	Female, aet. 20. Menses 3d day. Recovered.
65	104 120	104 118	104 112	104 100	103 86	102 82	101 80	100 72	99 72	98 65	98 60	98 56	98 69	98° 5' 72	Femalo, aet. 20. Menses 4th day. Recovered.
66	103 120	103 5 120	104 115	104 110	103 5 100	103 94	102 86	101 80	100 80	99 72	98 60	98 60	98 5 63	98 5 72	Female, aet. 50. Recovered.
67	104 120	104 115	105 110	105 100	103 94	103 86	102 72	101 70	100 70	99 68	98 5 70	98 5 72	....	....	Female, aet. 30. Menses 4th day. Recovered.
68	104 120	104 5 112	105 108	105 100	104 96	102 87	99 65	98 60	98 56	98 64	98 5 72	98 5 72	....	....	Malo, aot 24. Black vomit on 3d day. Recovered.
69	103 116	104 110	104 100	103 94	102 84	101 72	100 65	99 60	98 56	98 60	98 70	98 5 72	....	....	Male, aet. 30. Recovered.
70	102 120	102 5 116	103 108	102 90	101 84	100 80	99 60	98 60	98 60	98 5 65	98 5 70	98 5 72	....	....	Male, aet 22. Recovered.
71	102 116	103 110	103 98	102 84	101 80	100 72	99 65	98 60	98 56	97 48	98 50	98 5 64	98 5 70	98 5 72	Male, aet 24. Recovered.
72	105 120	105 5 114	106 114	106 114	106 118	103 100	99 80	99 100	98 120	97 130	....	....	....	....	Female, aet. 29. Hæmorrhage from mouth; profuso menstruation from 3d day. Urinary suppression from 8th day, and death on 10th day.
73	104 120	104 116	104 110	104 94	104 84	102 80	100 76	99 72	98 60	98 56	98 5 60	98 5 68	98 5 72	....	Female, aet. 32. Menses 4th day. Recovered.

Daily Average of Pulse and Temperature of the 73 Cases.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
73 CASES.	Temp.	102° 6′	102° 5′	102° 2	102° 2′	102° 2′	101° 5′	99° 5′	99°	97° 8′	98° 1′	98°	98 - 2′	98° 5′	98° 5′
	Pulse.	114½	112½	107¼	96½	86½	74	69¼	68	64⅔	65½	67¼	71⅔	80	82

Daily Average of the Temperature and Pulse of the 10 Fatal Cases.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
10 CASES.	Temp.	105° 0′	105° 5′	105° 7′	106° 5	104° 6′	103°	102° 8	101°	97° 5′	99°	98°	97°	96°	....
	Pulse.	120	120	116½	114⅕	106⅔	100⅗	99	99⅓	81	100	120	130	130	....

5 died on 5th day, of uremia.
1 died on 6th day, of uremia.
1 died on 7th day, of nervous prostration.
1 died on 9th day, of uremia.
1 died on 10th day, of uremia.
1 died on 14th day, of uremia.

No case of uremia lived over 50 hours after urinary suppression set in.

Table showing Daily and Monthly Mean of Barometer and Thermometer, Monthly Velocity of Wind, and Amount of Rain Fall, with the prevailing Direction of Wind for the Month of August, 1873.

Date.	Mean Daily Barometer.	Mean Daily Thermometer.	Mean Daily Humidity.	Rain Fall.	Weather.
August 1	30.067	75	85	2.94	Heavy Rain.
2	30.030	79	81		Fair.
3	30.090	75	78	.05	Cloudy.
4	30.170	72	64		Clear.
5	30.160	75	63		Clear.
6	30.092	78	69		Fair.
7	30.020	75	79		Fair.
8	30.012	77	70		Fair.
9	30.062	81	74	.03	Fair.
10	30.072	83	75	.23	Fair.
11	30.022	85	72		Clear.
12	29.978	84	68		Fair.
13	29.967	79	81	1.09	Light Rain.
14	29.980	78	65		Clear.
15	29-895	79	66		Fair.
16	29.945	75	85		Cloudy.
17	29.997	76	75		Fair.
18	30.037	73	60		Clear.
19	30.032	76	61		Fair.
20	29.972	76	59		Fair.
21	29.990	79	72		Fair.
22	30.042	77	71		Cloudy.
23	30.095	81	67		Fair.
24	30.100	83	66		Clear.
25	29.997	84	68		Clear.
26	29.960	85	66		Clear.
27	29.950	79	70	.19	Fair.
28	30.022	79	69		Fair.
29	30.110	79	65		Fair.
30	30.145	86	68		Clear.
31	30.067	84	64		Clear.
Monthly Means...	30.035	79	70	0.00	

Highest Barometer, 30.211.
Lowest Barometer, 29.862,
Highest Thermometer, 94°.
Lowest Thermometer, 68°.
Total Rain Fall, 4.53.
Prevailing Wind—North.
Total number of miles travelled, 2,856.
Maximum Velocity of Wind, 25 miles per hour.
Number of Cloudy Days—3.
Number of Rainy Days—2
Partly Cloudy Days 16.
Highest Stage of Water—14.9.
Lowest " " 6.0.

Table showing Daily and Monthly Mean of Barometer and Thermometer, Monthly Velocity of Wind, and Amount of Rain Fall with the prevailing Direction of Wind for the month of September, 1873.

Date.	Mean Daily Barometer.	Mean Daily Thermometer.	Mean Daily Humidity.	Rain Fall.	Weather.
Septem'r 1	30.012	84	63		Fair.
2	30.025	78	78	.48	Cloudy.
3	29.995	76	86	.40	Cloudy.
4	29.987	82	68		Fair.
5	30.132	79	75		Cloudy.
6	30.190	76	57		Fair.
7	30.010	68	70		Fair.
8	30.225	67	55		Clear.
9	30.100	74	65		Fair.
10	30.080	76	69		Fair.
11	30.050	78	66		Fair.
12	29.980	79	63		Cloudy.
13	30.097	63	67	.10	Cloudy.
14	30.150	59	61		Clear.
15	30.105	65	60		Clear.
16	30.120	72	63		Clear.
17	29.985	76	60		Clear.
18	29.917	76	66		Fair.
19	30.010	61	57		Fair.
20	30.097	59	61		Cloudy.
21	30.077	66	59		Cloudy.
22	30.035	66	77	.31	Fair.
23	29.990	61	75		Fair.
24	29.875	66	75		Cloudy.
25	29.990	73	79		Cloudy.
26	29.992	78	68		Clear.
27	30.052	76	79	.82	Light Rain.
28	29.945	76	79	.24	Heavy Rain.
29	30.085	64	85	1.18	Light Rain.
30	30.152	58	66		Clear.
Monthly Means..	30.048	71	68	0.00	

Highest Barometer, 30 281.
Lowest Barometer, 29.808.
Highest Thermometer, 92.
Lowest Thermometer, 53.
Total Rain Fall, 3 53.
Prevailing Wind—N. E.
Total number of miles traveled—3.320.
Maximum velocity of wind, 18 miles per hour.
Number of Cloudy Days—9.
Number of Rainy Da s—3.
Partly Cloudy Days—11.
Highest Stage of Water, 6.2.
Lowest " " 3.3.

Table showing Daily and Monthly Mean of Barometer and Thermometer, Monthly Velocity of Wind, and Amount of Rain Fall, with the prevailing Direction of Wind for the Month of October, 1873.

Date.	Mean Daily Barometer.	Mean Daily Thermometer.	Mean Daily Humidity.	Rain Fall.
October 1	30.090	63	67.5	
2	30.100	67	69	
3	30.015	70	71	
4	29.945	69	75	
5	29.875	69	68	.04
6	30.165	49	57	
7	30.132	51	39	
8	30.115	57	43	
9	30.132	62	55	
10	30.167	64	73	
11	30.130	67	74	
12	30.216	55	54	
13	30.181	56.6	59	
14	30.241	56	54	
15	30.290	66	64	
16	30.274	72	68	
17	30.069	72	65	
18	30.085	55	86	1.76
19	30.176	50	61	
20	30.099	48	60	
21	29.913	52	58	
22	29.919	60	64	.07
23	30.233	39	87	2.14
24	30.225	45	72	
25	30.253	49	89	
26	29.835	60	93	1.04
27	29.959	49	63	
28	30.343	36	62	
29	30.358	39	51	
30	30.343	40	53	
31	30.116	49	56	
Monthly Means...	30.130	56	66	0.00

Highest Barometer, 30.048.
Lowest Barometer, 29.076,
Highest Thermometer, 80°.
Lowest Thermometer, 3[illegible]°.
Total Rain Fall, 5.95.
Prevailing Wind—North.
Total number of miles traveled, 4,046.
Maximum Velocity of Wind, 32 miles per hour.
Number of Cloudy Days—9.
Number of Rainy Days—5

Table showing Daily and Monthly Mean of Barometer and Thermometer, Monthly Velocity of Wind, and Amount of Rain Fall, with the prevailing Direction of Wind for the month of November, 1873.

Date.	Mean Daily Barometer.	Mean Daily Thermometer.	Mean Daily Humidity.	Rain Fall.	Weather.
Novem'r 1	30.394	44	50		Clear.
2	30.218	50	66		Cloudy.
3	30.218	50	67	.01	Fair.
4	30.125	50	87	.27	Light Rain.
5	30.115	57	86		Cloudy.
6	30.038	57	72		Cloudy.
7	29.975	57	68		Fair.
8	30.192	55	56		Clear.
9	30.182	57	55		Clear.
10	30.026	61	55		Clear.
11	29.863	63	33		Fair.
12	30.169	43	47		Cloudy.
13	30.140	42	44		Clear.
14	30.146	38	47		Clear.
15	30.039	62	67		Fair.
16	29.714	60	61	.22	Cloudy.
17	29.466	53	48		Cloudy.
18	29.868	39	43		Cloudy.
19	30.189	32	52		Clear.
20	30.216	39	59		Fair.
21	30.217	49	63		Cloudy.
22	30.028	50	91	1.80	Light Rain.
23	29.825	34	94	1.50	Light Rain.
24	29.987	44	79	.07	Cloudy.
25	30.077	46	42		Clear.
26	29.932	49	56		Clear.
27	30.040	46	47		Clear.
28	30.482	37	54		Fair.
29	30.437	41	61		Cloudy.
30	30.230	52	75		Fair.
Monthly Means..	30.087	49	61	0.00	

Highest Barometer, 30 492.
Lowest Barometer, 29.347.
Highest Thermometer, 75.
Lowest Thermometer, 29.
Total Rain Fall, 3 87.
Prevailing Wind—S. W.
Total number of miles traveled—3 580.
Maximum velocity of wind, 30 miles per hour.
Number of Cloudy Days—10.
Number of Rainy Da s—3
Highest Stage of Water, 8,6.
Lowest " " 2.4.

ARTICLE II. *The Bromide of Potassium.* By A. M. RAGLAND, M.D.

In bromide of potassinm we possess a remedy of great value, though it is not capable of so wide a range of application as was formerly thought; in that class of diseases wherein its specific powers may be laid under contribution it is a remedy we may administer with a trust of certain benefit.

In this short article it is my purpose to enquire of the effect which obtains from the administration of bromide of potassium, to speak of the peculiar action of the drug upon the vasa-motor system of nerves, and finally of the diseases where its use has given best results.

It is only within a recent period that the true nature and effect of this drug has been appreciated by leading therapeutists. Since its introduction in the treatment of epilepsy in 1858, it has been closely studied by several eminent observers, and by their united labors its mode of action is now tolerably well understood.

Dr. Alfred Stille, in his work on therapeutics, defines it to be essentially a vascular remedy. He writes: "Among diseases for which this medicine is vaunted, there are very few where improvement under its use cannot be explained by its power of diminishing the amount of blood, and the activity of the nervous elements, in the affected part."

"By these it promotes sleep, prevents convulsion and spasm, palliates pain, and counteracts the element hyperæmia in all inflammations."

The views held by Dr. Waring are not dissimilar to those just quoted. He says: "Bromide of potassium is stimulant, anaphrodisiac, and anti-spasmodic. Its action," says he, "is apparently directed mainly or chiefly upon the system of vaso-motor nerves, and it acts upon that system as a sedative."

Dr. Armoney, of Boston, as a deduction from a number of experiments with this drug, arrives at the conclusion "that its effects are produced by its direct action upon the blood-vessels or the vaso-motor system of nerves which controls the contraction of these vessels, and that its action upon the general nervous system is secondary and dependent upon that of the vaso-motor nerves."

"That its effects on certain parts where there may be a determination of blood is not contrary to the known laws of physiology. Lack of healthy resistance to disturbing influences allows the blood-vessels to be dilated; the presence of this drug stirs up the opposing influence which controls them."

"This influence would be exerted upon the diseased portion of the system more powerfully than upon the healthy portion of the organism."

Prof. J. S. B. Alleyne, of the St. Louis Medical College, in an article on the bromide of potassium, published in the "Medical Archives," p. 213, vol. ix., says: "The contraction of the capillary vessels through the influence of the bromide of potassium, or the action which it has upon the vaso-motor system which controls these vessels, lies at the base of all our therapeutic operations when its use is once indicated. And this conclusion has been reached by experiments which cannot be gainsaid."

The foregoing views of these observing therapeutists are strongly confirmatory of the opinion that the primary action of the bromide of potassium is to cause contraction of the arterioles and capilaries—whether by the stimulant or sedative effect of the drug upon the vaso-motor system of nerves is not quite so apparent.

In all hyperæmias and inflammations there is necessarily an increased vascular supply to the suffering organ; from this increase of blood supply a dilation of the vessels of the part ensues, with relaxation of the circular muscular fibres of the minute vessels. To cause diminution of this increased calibre of the arterioles and capillaries, we must stimulate the vaso-motor nerves of these vessels to cause their contraction.

I cannot conceive how the sedative action of a drug upon the vaso-motor system could stimulate contraction of the muscles to which they are distributed. On the contrary, I should rather expect a relaxation of the muscular coats of the vessels as a result of the action of a sedative.

If verat viride be given until its full effect is obtained, we have resulting a relaxed state of the circulatory apparatus, and as a consequence, "slowing" of the circulation—this I am persuaded is the result of its sedative action.

It may be asked, how are the calmative effects of the bromide of potassium in states of hyperæmia of the nerve centres to be accounted for? Simply by its power to cause contraction of the arterioles and capillaries of the diseased organ which are under control of the vaso-motor nerves, thus inducing a state of temporary anemia and relieving pain and nervous perturbation. In its effect upon the general nervous centres, we may therefore consider bromide of potassium a nervous sedative.

Of diseases for which bromide of potassium has been given with signal benefit, I wish to speak first of cerebro-spinal meningitis. Bromide of potassium has not been very generally used by the profession in the treatment of this fatal malady, though in the recent epidemic several observers have reported favorably of its use.

Dr. Alleyne, in the article previously referred to, claims a most remarkable success by the use of this remedy, having treated as many as ten cases without a fatal result in any. Of the severity of the cases under his observation he writes as follows, p. 172, vol. ix.: "Thus far the cases I have observed have been of different degrees of severity, from the lightest, as shown by headache, general pains or soreness, to the most severe, as seen in convulsions and coma."

During the early months of the past year it was my fortune to treat as many as seven cases of this disease; four of these cases were of a severe type, the remainder were of milder type. The accession of the disease in all cases was marked by most distressing cephalalgia. In the severest cases this was soon succeeded by delirium and convulsions, or by blindness, double vision and dizziness; great tenderness of the spinal cord was evinced when even slight pressure was made upon the spinous processes of the cervical vertebra. In one case there was partial paralysis of hemiphlegic kind, with blindness and great muscular prostration. Nausea and vomiting occurred in some cases.

In no two cases did the disease run a parallel course, though the salient features were prominent in all.

Of these cases, which were all treated with full doses of bromide of potassium and hydrate of chloral, one only gave a fatal result. In this, as in the other cases, the relief was prompt and immediate; his appetite returning, became so imperious he ate a hearty meal of undigestible food—a renewal of the violent symptoms soon terminated his life.

Those cases seen near the onset of the disease were rapidly relieved, and the disease arrested before products of inflammation were exuded. Here the convalescence was rapid and satisfactory, but in those seen later, where lesions were established, the suffering of the patient was relieved, but convalescence was tedious and variable, months passing before they regained their strength. My experience leads me to the conclusion that the treatment pursued arrested the inflammatory process, but was of little avail in removing the exuded products when they occurred.

The after treatment of these cases was conducted on the supporting plan—good food, stimulants and tonics.

In hyperæmia of the brain, a disorder frequently the result of excessive mental toil, intense or long continued excitement of the mind with little or no rest to the brain, its organ, inducing a state of increased blood supply, which soon becomes a source of grave trouble, with disastrous consequences, unless relief is afforded. Here bromide of potassium, by virtue of its power to cause contraction of the overloaded capillaries, frequently relieves the threatening symptoms of this disease when other means usually prescribed fail.

In 1872 I had, in conjunction with Dr. Roberts, of San Augustin, Texas, the opportunity of observing an interesting case of hyperæmia of the brain, in which extreme hyperesthesia of the special senses with persistent insomnia was relieved by bromide of potassium, in doses of xx. grs., repeated every five hours until relief was obtained. As soon as its influence was secured, the patient became comfortable and fell into quiet and refreshing slumber. Its use was continued for some time in smaller doses, and finally was substituted by hydrate of chloral. This remedy failed to afford the measure of relief given by the bromide of potassium.

In puerperal eclampsia bromide of potassium has shown its great power in controlling the convulsions which are so appalling an accident of the parturient state. A number of cases have been reported in the journals of the past five years which testify to the great value of this drug in this disease.

I have treated two cases of eclampsia by bromide of potassium, one of which is reported in the "Medical Archives," vol. viii, p. 398; of the other a short report is here given. M. M., a negro girl, aged 16, a large, well formed young woman, whose general health has always been excellent. When I saw her she was insensible, and had been having severe convulsions for several hours. Her mother gave her history as follows: Passed a restless night previous to my seeing her; this morning she was sitting by the fire about 9 a. m.; without premonition was suddenly seized by a violent convulsion, falling on the floor; the paroxysms since then till now ($6\frac{1}{2}$ p. m.) have recurred at frequent intervals, and she has not exhibited any signs of consciousness from then till now. She is in labor with her first child; an attempt was made to determine the presentation, but failed because of a convulsion coming on as soon as my hand touched the vagina. She was immediately given sixty grains of bromide of potassium. She being a robust, plethoric woman, I deemed venesection advisable and accordingly opened a vein; another convulsion occurred, causing an arrest of blood-flow, so that only a few ounces escaped. I repeated the bromide of potassium in half an hour, giving thirty grains, then continued it every hour during the remaining course of the labor; only two or three spasms occurred after this. So soon as she came fully under the influence of the drug I was able to determine the position of the child, found it normal, with head engaging in the strait; three hours after she is delivered of a healthy child, no symptoms of convulsion occurring during the final throes of labor. The remedy was continued in smaller doses for several hours after the completion of labor. The woman made a good recovery; several days elapsed before her mind was restored.

In the convulsions which so frequently complicate the diseases of children, I desire to certify my high appreciation of the value of bromide of potassium as a remedy for their relief. The great impressibility of the nervous systems of children render them extremely liable to become the subjects of convulsion from seemingly slight causes; with a simple attack of malarial fever, from the hyperæmia of the cerebro-spinal axis, some will suffer violent convulsions which, if not relieved, may speedily prove fatal.

The presence of a small bolus of indigestible food, or of worms in the alimentary canal, are such frequent causes of convulsion among children that the popular mind holds the belief that worms are the cause in all instances, and will frequently desire the physician to prescribe an anthelmintic. In all cases of infantile convulsions resulting from nervous irritation, whether centric or excentric, I would give bromide of potassium with perfect confidence of controlling the convulsions, while at the same time endeavoring to remove by appropriate means the cause, should I be able to discover it.

The following is my usual formula in prescribing it:

℞—Potass. bromid. ℈i.,
Tinc. gelsemini ʒi.,
Tinc. Valeriani ʒii.,
Syrupi Simp. ℥ii. ℳ

Sig. To children under one year of age one teaspoonful every hour, till relief is given, this is usually obtained in a short time, after which the effect is continued by using the remedy less frequently, say at intervals of two or three hours. This I have used especially in the convulsions frequently complicating the fevers of children. In no case has it failed to afford the desired relief.

There are some young females of an excitable nervous temperament, in whom may occur a state of hyperæmia of the ovaries and uterus, accompanied with hyperesthesia of these organs, without the existence of an actual lesion; the nervous system of such females is easily upset, and during the period of ovulation this irritability of the nervous system frequently culminates in an outright hysterical paroxysm. In these cases of disturbed innervation and unbalanced circulation of the capillaries the bromide of potassium is eminently useful, quieting the over excitement of the nervous system, and by its special control of the vascular system maintaining equilibrium of the circulation.

It is best it should be given a few days before each menstrual epoch—as much as a week or ten days. Should the patient be the subject of anemia, as is frequently the case, it is well to give some preparation of iron in the intervals between each appearance of the menses.

In some cases I have combined the remedies with good effect, as in the following formula:

℞—Potass. bromid. ʒv.,
Ferri sulph. ʒiii,,
Syr. cit. acid,
Aquæ cinnamomi, aa ℥iv. ℳ
Sig. One teaspoonful thrice daily.

I have purposely refrained from referring to the use of bromide of potassium in epilepsy, because its effects in that disease are well understood, and I am unable to add anything to what is already known of its value in that disagreeable malady.

Shelbyville, Texas.

ARTICLE III. *The Medical Colleges, the Medical Profession, and the Public.* Abstract of an Address to the Graduates of 1874. By STANFORD E. CHAILLÉ, A. M., M. D., Professor of Physiology and Pathological Anatomy, Medical Department, University of Louisiana.

This subject will be discussed in reference to the three questions,

1. Whether the Medical Colleges of the United States graduate annually an excessive number of Doctors in Medicine?
2. Whether the supply is defective in quality?
3. What means can be successfully adopted to correct any such evils as may really exist?

DO THE MEDICAL COLLEGES OF THE UNITED STATES GRADUATE ANNUALLY AN EXCESSIVE NUMBER OF DOCTORS IN MEDICINE?

This question requires an estimate of the total annual supply of and demand for physicians. In 1873 there were in the United States seventy-four medical colleges. Of these, sixty-four were "regular," and ten were irregular (viz.: seven Homœopathic and three Eclectic) colleges. The fourteen Southern (formerly slave) States had nineteen of these colleges. The ten institutions of quackery are in Massachusetts, New York, Pennsylvania, Ohio, Illinois and Missouri. Although the "regular" colleges reported more than six, and the irregular colleges less than one thousand, making a total of about seven thousand students, it is not believed that the actual number of bonâ fidê students exceeded five and a half thousand. Of these, something less than half are graduated annually. In 1873 there were about 2660 graduates, viz.: about 2350 "Regulars," 188 Homœopaths and 122 Eclectics. This yearly contribution of 2660 is augmented by about 200 immigrant doctors. Therefore the total annual supply is less than three thousand.

In 1870, 50,000 practising physicians paid the United States Internal Revenue Tax, and the census enumerated 62,383 persons "*occupied*" as physicians. The annual loss of this professional army by death, disability, and all causes of retirement is probably not less than 2000. In addition to the demand to supply this loss, the population of the United States is being increased at a rate not less than 800,000 annually, and this annual increase requires, on the present ratio of one physician to every 618 of the population, a supply of nearly 1300 physicians. Therefore, whilst the total annual demand does certainly exceed, the supply does not equal three thousand. Hence, "self constituted and irregular practitioners, who do not seek degrees reach, at a low estimate, 200 annually.*"

Although the total number of persons occupied as physicians was 62,383, it is not probable that more than 47,000 were graduated in regular Medical Colleges; for about one-eighth of the whole were Homœopaths and Eclectics, and probably the number practising without any diplomas whatever was as great.

Some considerations will now be presented on the question whether the present ratio of supply—one physician to every 618 of the population—indicates, as to the public, a normal and favorable condition.

1. It is a much larger supply than have the civilized nations of Europe. France and England have one physician to about every 2000 people. In the cities, as Paris and London, where the conditions are such that one physician can attend the greatest number of sick, the supply is much larger, one to less than a thousand. The wealthy and prosperous cities, New York and Boston, have one to about five hundred, and impoverished New Orleans, one to about one thousand of the population.

Whilst it is true that cities contain more professional idlers than the country, it is concluded from the above and other facts that physicians abound in proportion to the material prosperity and freedom of the people from medical superstitions, and that these conditions being given there will be a diminution in the supply proportionate, in some degree, to the density of the population.

Therefore, if the people of the United States be as prosperous and intelligent as the people of France and England, it is not astonishing that the former with only thirteen inhabitants to the square mile should have a larger supply of physicians than the latter with some two hundred to the square mile; nor is it surprising that enlightened England and France should have a far

* This and some other facts were obtained from Dr. J. M. Toner's "Statistical Sketch of the Medical Profession of the United States."

larger supply than one doctor to every fourteen thousand people, as has Russia, with its large population of recently emancipated semi-barbarous serfs; for it is certainly true that the barbarously ignorant rest content with uneducated quacks, their priestly medicine-men.

2. Military surgery teaches that two medical officers to one thousand soldiers congregated together is an inadequate allowance even in times of peace. A general population of one thousand civilians will certainly furnish a much larger amount of sickness and mortality than this number of selected men of military age. Therefore, if one medical officer does not suffice for five hundred soldiers, it may with good reason be supposed that one doctor to every five hundred civilians of all ages would not be by any means an excessive supply.

3. What amount of medical attention does a healthy population of one thousand require in a healthy country, and during a healthy year? The year would average about fifty persons daily sick, and one death or birth every week. Under ordinarily favorable circumstances this amount of professional labor would require more than two physicians. Two would be altogether insufficient if the thousand inhabited a sparsely settled country; as also when epidemics prevailed, even if the inhabitants were congregated in villages or cities.

4. The present (1870) supply of one physician to every 618 of the population is said to be excessive. But if one to every five hundred be requisite then the United States needs fifteen thousand more doctors. And all complainants ought to gain hope from the fact that this decenniad demonstrates a large diminution of physicians compared with the preceding twenty years; for in 1860, as also in 1850, the supply was one to every five hundred and seventy people, and if this proportion be deemed favorable, then the United State now needs five thousand more doctors, and has over three millions of its people unsupplied. It is worth while to remark in this connection, that during the last decenniad not less than three millions of people, who had been remunerative to physicians, were transformed into a non remunerative free population.

5. All of the preceding facts, as to whether the present supply is favorable, deserve consideration. Others have not been forgotten which belong to the subject, but will not be discussed, because the data are wanting to enable an approximative esti-

mate of the amount of their influence. Among these unconsidered facts are those which would go to show the influence of healthy and sickly climates on the supply of physicians; the number of sick attended gratis; the number who are sick and die without a physician's attendance; the number who resort to the innumerable patent medicines which abound in every village; and the number who are content to trust their health and lives to those self-confident, natural born doctors, American women, one of whom blesses every household.

As to whether the Medical Colleges supply an excess of graduates, the following conclusions may be drawn.

The profession has good reason to urge that the number is large enough to diminish the profits of its individual members, and that if educational requirements were higher, there would be fewer doctors and larger profits for the diminished number.

The colleges can reasonably urge—that if graduates were not wanted by the public it would cease to supply medical students; that a large part of the sixty-two thousand three hundred and eighty-three persons occupied as physicians are not graduates, but ignorant, self-constituted doctors; and that they are doing good service in supplying substitutes for these. For, notwithstanding the more frank than courteous denunciation, by some foreign confréres, of American medical colleges, as bureaux "to legalize murder," it must be conceded, that a nation supplied with physicians who do know *something* of medicine is better off than if supplied in corresponding degree with men who know nothing; and that the colleges have at least served to mitigate this greater evil.

The public can with safety leave the supply of graduates in medicine to the ordinary laws of trade. It is impossible that there should ever be, for the public good, too many citizens educated in a knowledge of the laws of health and life. No knowledge is more needed by the people, and they cannot have too many teachers. Any excess in quantity would necessarily tend to improve the quality. Those left unemployed would have been, by their medical education, improved as useful citizens.

In conclusion, if the present supply does not equal the demand, the public has the right to inquire—whether improvement in quality by higher requirements would not, by diminishing the supply still farther, cause greater public injury by such diminution than would be compensated for by improvement in quality?

Are the M. D's. graduated by the United States Medical Colleges Defective in Quality?

Notwithstanding some antagonistic interests, there has long been agreement between the most influential of the profession and the best Medical Colleges that the requirements for graduation should be higher, and for more than thirty years futile efforts have been made for reform. Since the day when my too-easily earned diploma was conferred, I have been an incessant advocate for this reform. Twenty years professional experience, with twelve of these as a medical teacher, has modified my views; for it has increased my conviction of the importance of improvement, while it has destroyed my hope that I might live to see it realized. I, then, am no apologist for the Medical Colleges, but am a seeker for the whole truth. Therefore, as I think the symptoms in this case are too manifest to permit any competent judge to hesitate about the diagnosis, there need be no discussion except as to the proper treatment of that very sick patient—medical education in the United States.

What means can be Successfully Adopted to Elevate the Standard of Medical Education?

There are but three remedies which can be applied, viz., voluntary action of the colleges, legal force, and public opinion. Let us examine each one, and first—

I.—Voluntary Action of the Medical Colleges.

As authority to grant diplomas is vested only in the colleges, these, if united, could accomplish a reform. But, medical education is not the worst evil which needs reform, and yet does not secure it because ignorance, jealousy and conflicting opinions and interests, bar the way to united action. It is a deplorable fact that not a few of the sixty-four "regular" Medical Colleges, like many machines invented by this enterprising people, are vying in the cheapness and rapidity of their execution without due regard to efficiency, and are engaged in a competition against each other, which annually develops a shameful amount of under-bidding, trickery and unscrupulousness. The profession, which is disgraced by this, discourages it but little; and the public, which is seriously injured, witnesses it with amused indifference. So great is the influence of this competition that some of the most reputable colleges, assembled in convention at Washington, April 29th, 1870, to perfect long discussed measures of reform, did not dare to enter into agreement. So "miserable and humiliating" was the attempt at united action, that our delegate, Prof. S. M. Bemiss, officially reported, "there is not at this time, nor at any discernible period in the future, the slightest hope of any general coöperation on the part of the schools of the United States in measures for the advancement of medical education." Other facts could be given to prove, that whilst the united action of the colleges is an apparently simple and effectual remedy, its practical application is impossible. To secure it, medical professors must be reformed—to secure this the entire profession (for any half dozen doctors can constitute themselves professors, and found a Medical College)—and to secure a reform of both professors and profession the public must be first reformed.

It may be urged that though united action be hopeless, each college, convinced of the need for reform, should act upon this view separately and independently. This is done to some, but will continue to be done to a most unsatisfactory degree, because the Medical Colleges, with few exceptions, depend for their support upon the patronage of students, and this patronage would certainly be withdrawn, to such extent as to imperil their existence, from any small number of colleges insisting upon proper requirements.

The public is so incompetent a judge of medical skill, that it fails in large degree to discriminate in favor of the accomplished graduate, as against his more pretentious inferior, and generally remunerates tact and agreeable personal traits without medical skill, much better than such skill without such characteristics. Medical students are swayed by these facts, even unconsciously, and are influenced more by considerations of money, time and convenience, than by the quantity and quality of that medical education which their future clients inadequately appreciate. Like other men they sacrifice as little as they can to secure that which they are to depend on—popular favor. If this can be secured at small cost, and by perhaps less than two years study, why incur greater cost and the loss of two or three years more? Medical students simply respond to the public demand, and colleges will always abound to respond to the students and the public. About one half of the "regular" Medical Colleges are now engaged in the discreditable business of underbidding the other half, striving thus to seduce impecunious students, urgent for a speedy diploma, to fill up their otherwise empty benches.

If, under these circumstances, any of the best Medical Colleges (which derive their revenues from the students) should elevate the requirements for a diploma to a proper standard, not only would they dangerously impair their own strength, but, worse still, the less worthy colleges would fatten on their failure. When sensible men see that an improvement is desirable, but that an attempt to accomplish it will certainly inflict serious injury upon their own immediate interests, they must stop to inquire what amount of good to others would follow in compensation for this self inflicted injury. Suppose this Faculty decided now to pursue such a course. Our class next session would be diminished at least by one half, and these students would seek and receive elsewhere diplomas significative of less knowledge probably than those now given by this Faculty. Therefore, in injuring ourselves we would not have benefited, but probably have also injured that large number of students whom we would have had. As to the much diminished number which would continue to come to us, it would manifestly consist of those, who desired higher acquirements and a diploma significative of this—in other words, of those who are now our best students. To estimate the good which might be conferred on these, it must be remembered that our best students are always those who best understand that their days of severe study by no means end with their diplomas, and that those who desire higher acquirements already remain with us three or more years and accomplish this desire. The attempt is made even to bribe all to do so, by furnishing every educational advantage free of cost, after a course of two sessions. The comparatively small number of those who avail themselves of these advantages, indicates how very few would patronize this college if it demanded those higher requirements which would render additional courses indispensable. Present advantages would be then modified, so that there would be added thereto the disadvantage of having to pay for these additional courses, and the advantage of receiving a diploma somewhat more valuable in professional, but not of sufficiently greater value in public opinion to ensure more extensive employment or better remuneration. As to the amount of good which might be bestowed on the public by a limited number of thoroughly educated graduates, a higher estimate will be formed when it is found that this community, or any other, selects for employment only the competent, and ceases to prefer, as is largely the case, the popular man but incompetent physician.

It is therefore believed, that the independent action for reform of any of the colleges separately—say of this one—would result in a fatal reduction of its revenues, a diminution of the flow of money to this city, no benefit and probable injury to the many students who would abandon it, very little if any more good to those who would continue to patronize it, and an amount of good to the public which it would certainly fail to appreciate, and which therefore would be too slight to justify any enthusiasm.

That well-endowed Medical Colleges, with teachers independent of the patronage of students, might do good, is not doubted; but taking the facts as they are, it is certain that no reform sufficiently extensive to be of public moment will ever be accomplished by the voluntary action of the Medical Colleges, either unitedly or separately. As public institutions they satisfy the demands of the people, and of the people's students—therefore the public has no right to and does not complain; and as to the complaints of the profession, they will be little heeded until they gain such unanimity and strength as to influence favorably that ignorant public opinion, which is responsible for our defective medical education.

II.—THE LAW, AS A REMEDY FOR DEFECTIVE MEDICAL EDUCATION.

Why should restrictive laws, prohibiting by adequate penalties all from pursuing the occupation of a physician except those who have given satisfactory proofs of competency, be enacted as to the medical rather than as to other professions? There are two good reasons. 1st, Public ignorance of medicine is profound—much greater, for instance, than as to law and theology, and the public is restricted in wisely using the little knowledge it has by the fact that the medical profession enjoys the exceptional privilege of burying most of its failures, and of concealing its errors between itself and its patient; therefore, as the public cannot protect itself adequately from the injuries inflicted by this profession, the law should protect it. 2d. This inability to protect itself occurs as to life and health, public interests of greater legislative importance than any others whatever.

But to justify legal interference, the proofs should be ample that laws could be not only enacted, but also executed, which would benefit the forty millions of people even more than the sixty-two thousand doctors. Searching for such laws as prece dents, envious eyes are cast on France and other foreign nations, which have succeeded far better than the United States in securing a properly educated medical profession. This superiority is in part due to those conditions which render unprofessional labor less remunerative and less honorable than in the United States; for, these conditions tend to furnish a larger supply of those, neither ignorant nor needy, who seek a medical diploma for its social as well as remunerative value, than would be furnished by the United States under similarly restrictive requirements as to diplomas. But this superiority is chiefly due to the subjection of their Medical Colleges to the control and support of strong central governments. By this means two important ends have been accomplished. 1st. The professors are released from all dependence on students' fees, and thereby from a great temptation to augment the number of their students by relaxing their standard of requirements. 2d. Every physician is required to obtain his diploma from one of a few examining boards, all of which are forced to have an approximatively uniform standard of requirements. Thus the colleges are prevented from striving to surpass each other by unworthy means. Why cannot we adopt similarly simple measures? In consequence of our different government and people.

An influential profession, acting on a limited number of educated legislators, can secure the enactment for the general welfare of good laws, which, even though unappreciated by the people, the executors of the law, vested with more or less despotic power, can enforce in nations well policed by disciplined soldiers. But in a government which depends, in fact and not simply in name, on universal suffrage, public opinion not only makes the laws but also executes them. Therefore, although a few may enact laws which receive the indifferent acquiescence of the people, the execution of such laws as affect every individual requires that the many-headed people should have such a conviction of their utility as to insure that this conviction shall be put in action. This people is extremely jealous of any restrictive laws whatever, and will not submit to limitations of that personal freedom of action to which they have been habituated, unless well convinced that the freedom lost will be more than compensated for by the benefits gained. In fine, to rectify the evils of a self-governing people, it must be so instructed as not only to recognize these evils, but also to cry out against and actively aid to suppress them. How very far this people is from any such conviction as to medical education let its chief teachers, the press and pulpit, bear witness. See how the knights of the quill encourage even those forms of quackery which inflict most injury on humanity. Look at the signatures of the reverend clergy in behalf of the secret nostrums of unblushing charlatans. Listen to the barbarous absurdities about disease with which even (so-called) educated gentlemen and ladies are prone to amuse or disgust the honest physician, and which the unscrupulous use to subserve their own interests.

Any laws desired can be passed by two authorities only—by Congress, to govern all the States, or by each State separately. The right to enact such laws is one of those which the most eminent constitutional lawyers assert unhesitatingly is reserved to the States. The right of the General Government to enact any such laws is certainly of such doubtful constitutionality that it would be jealously opposed by many of the States, as a usurpation. And although uniformity of action in this matter for all the States is manifestly most desirable, and although many deem that the present party in power will and should be overthrown because of its tendency to usurpation, it is none the less true that the present United States Commissioner of Education does not even suggest, when discussing this subject, any such exercise of power; but does tacitly disapprove of it, inasmuch as he strenuously recommends the separate action of each State. If all objections on the score of constitutional authority be waived, there would still remain the gravest doubts as to the expediency of such laws. Who can be sanguine that any board or boards appointed by, and therefore to consist of political partizans, would prove competent and satisfactory? Who believes that Congressional laws, prohibiting all those unauthorized by its boards to practice, would be executed? Experience justifies the conviction, that the active opposition and inactive indifference of the many to the execution of any such laws would more than counterbalance their active enforcement by the few, and render them virtually inoperative. There is, then, in my opinion, no relief to be hoped for from the National Government so long as Republicanism, or rather Democracy, maintains its ascendancy over Cæsarism.

What relief can be expected from the State governments, each of which has the unquestionable right to control this matter within its own boundaries? Those advocating the separate action of the States ought to be informed what these have done, and the results. Many of the States have tried the experiment of enacting laws, so excellent, that nothing was needed to improve the medical profession, except their execution. In 1851 eleven States had had such laws, and had repealed them; four then had them, but subsequently repealed them. Among these four was the State of Louisiana, as to which, it was published abroad that "no State in the Union is better protected against impositions of all kinds than Louisiana." But distance lent enchantment to the view, for the facts were as follows: Louisiana did enact most excellent laws as early as 1808, wisely amended them in 1816, 1817, and 1840, and after forty-four years of experiment repealed them in 1852, without encountering the opposition of any. For such was the execution of these laws, that the State was infested with quacks and patent medicines, and whilst the laws imposed taxes and other burdens on the good, their penalties against the bad could not be enforced. All pronounced the law a "dead letter," and the most reputable physicians acquiesced in its repeal, even urging that this was much better than its unchecked and apparently unavoidable violation. Now the reasons why these good laws, which vested authority in examining boards, composed of our best medical men, were not enforced, should be sources of instruction and of serious thought to those who advocate another trial of State action. These wise and adequate laws were not enforced by the Medical Boards, "because public opinion would not sustain them;" and a most earnest and able advocate for medical reform reported in 1851—after investigating the subject as to the fifteen States which had, or had had such laws—that "it is in vain to look to Legislatures for relief or redress on this subject. The Legislatures reflect the public opinion and the public will," and these refused to enforce legal restrictions upon the practice of medicine.

Even without such experience I should have urged that it is idle to expect from ignorance in thought persistent wisdom in action; from inferior citizens superior conduct; and from institutions any more rapid improvement than those are improved who support them; for I concur fully with the distinguished philosopher (Herbert Spencer) who writes, "The belief that a faulty character can so organize itself socially as to get out of itself a conduct which is not proportionately faulty is an utterly baseless belief."

But ignoring general principles, and relying solely on facts to guide us, we may pertinently ask—if the above was the experience of conservative Louisiana, what can any good citizen hope from radical Africanized Louisiana, more than that if he lends his influence to accomplish a good purpose, it will certainly be used to increase officials and taxes, and most uncertainly to promote that good which he seeks? If the oldest and best governed Northern States have thus far utterly failed to reform medical education, what can the misgoverned Southern States hope to accomplish, more than to add to innumerable specimens of medical, some more specimens of legislative quackery?

For my own part, I have abandoned all hope of any extensive and effectual reform in national medical education until public opinion becomes sufficiently enlightened in regard to the benefits to be derived, and the evils to be suppressed thereby as to insist upon the enactment, and actively aid in the execution of any necessary laws.

It is, then, in my judgment, certain that two out of the only three possible remedies to secure medical reform have failed, and will always fail to prove successful, in consequence of their dependence on the third and last remedy, public opinion. From this results the inoperative laws, and the inaction of the colleges, and medical education in the United States can only be improved pari passû with improvement in public opinion.

III—IMPROVEMENT OF PUBLIC OPINION, AS THE ONLY REMEDY FOR DEFECTIVE MEDICAL EDUCATION, AS ALSO FOR THE GREATER PUBLIC EVIL DEFECTIVE HYGIENE.*

No kind of popular ignorance causes so much avoidable suf-

* The preceding portion of this address was delivered to the class; the succeeding portion to the graduates and a public audience on Commencement Day, March 20th, 1874.

fering as ignorance of the laws of nature, life, and health. No knowledge can surpass in importance that knowledge which teaches how best to preserve one's own body, for health is the parent of happiness and success, and a very near relative of practical morality. To the ignorance which prevails on this subject, this country owes not only its quacks and ill-educated physicians, but also a vast amount of preventable sickness and death; and since this evil of incompetent physicians, and this greater evil of defective hygiene are both due to the same cause, they require the same remedy. As the public is the culprit, it is unavoidably the victim; for the transgressor against nature's laws, though culpable by ignorance, cannot escape their penalties. And if an innocent, unconscious victim is to be rescued, it can only be by teaching him his negligence, its punishment and the means to avoid it.

What proofs are there of this popular ignorance, and of its evils; and what hope for the future can be derived from the past?

In estimating human progress, time should be marked by generations. It, then, is but a little while since public opinion was characterized by a general belief—in alchemy, astrolgy, ordeals, and ghosts—that horseshoes and old broomsticks had spiritual powers—that mystic incantations and charmed potions could insure good or ill fortune—that the waters of holy wells could by their sanctity rescue the sick from death—that a divinity did "hedge a king," and, therefore, that a royal touch could cure "the king's evil"—that drugs were so mysterious that even the idiotic seventh son of a seventh son could best administer them—and that diseases were due to supernatural causes, even to Divine vengeance for sin.

Scarcely three generations have elapsed since it was deemed almost blasphemous to doubt—that a harmless fellow creature could be transformed into an accursed witch—that a pitiable brother afflicted with disease of the brain was possessed by a devil—for these beliefs were taught, as matters of religion, by Catholics and Protestants alike, who seemed (says an historian) to vie with each other, "to merit Heaven, by making earth a Hell."

Civilization now shudders at these monstrous and cruel beliefs of our ancestors; and to find their prototypes, we must turn to such barbarism, as here in our midst, prostrates its trembling form before the Voudou of Africa. Our emancipation from such ignorant superstitions is due to Science. Not to that kind of science, which is popularly believed, and has been humorously declared to consist—in knowing everything which nobody knows, and nothing which every does know—but to that true science, which is synonymous with educated common sense, educated especially in a knowledge of nature's laws. To this knowledge, disclosing gradually the secrets of nature, and their superstitions misinterpretations, do we owe our progress. For human reason, whether savage or pseudo-civilized, whenever baffled in explaining any fact by natural causes, has ever sought, and does still seek refuge in the supernatural; so that the extent to which the mind has freed itself from this badge of barbarism is a measure of its culture.

But, though science, with daily augmenting proofs, teaches indisputably that nature's unchangeable laws permit only apparent and never real exceptions, it is none the less true that civilized nations do still continue to cling to superstitions exceptions, which, if not as cruel, are as groundless as those which the past has buried in dishonored graves. The public opinion of this generation evinces plainly its ancestral taint, and constantly presents not only traces of absurd beliefs, now generally renounced, but also proofs that that mode of thought which fostered such beliefs has been by no means eradicated. So that, the future will find abundant illustrations of the hereditary superstition and ignorance of this generation; and will cite them to prove, that our public opinion is the legitimate offspring of that which condemned eccentric minds to the witches' stake, and immured diseased brains in loathsome dungeons for criminals. Some of these superstitions, some of these proofs of the popular ignorance of the simplest of nature's laws, deserve our present consideration.

Spiritualism adds to its army of devout believers a vast host of hesitating disbelievers. Homœopathy enfolds in its saccharine embrace thousands to whom it teaches the belief that *force* is increased by the *diminution* of matter, and therefore that force may be generated supernaturally independent of matter. What wonder, then, that the infinitesimal science and spiritualism should prove such congenial brothers? The Welsh Fasting Girl has recently demonstrated how ludicrously, yet murderously ignorant the (so-called) most highly educated may be of the elementary laws of life; for they contended, even to her death, that the fire of life could burn without the fuel of food, and therefore that the living machine could discharge its functions by some supernatural power. A majority regard the final evolution of man from the *highest organic living* matter as ridiculous,* and as much more incredible than his primary formation out of the *lowest inorganic dead* matter, "the dust of the ground." If some optical trick or deluded sensation puzzles reason, lo! the ghost of a man, yes, even the ghost of his old clothes; and if the vagabond imagination, wandering in riotous dreams, stumbles into a coincidence, behold! a spiritual warning. The traveller still lingers over "unlucky" Friday; and some, more remarkable for bigotry than sense, are wont to appall tremulous little sinners, by absurdly teaching that the inflexible laws of nature are prone to swerve aside, in order to inflict exceptional physical perils on the Sunday's pleasure seeker. To be one of thirteen at table inspires unpleasant dread; but to be one of the trebly fatal thirty-nine arouses no misgiving that one will be dead, as *is* extremely probable, before a year has passed. The public is fortunate, that though professing to believe that "murder will out," it does not relax its efforts to improve its police. "Old Probabilities" remains about as incomprehensible a personage as his Æolian predecessor, and the fables of the god of the winds are even better comprehended than the laws which control the official prognostics of the daily weather.

Idiotic seventh sons have lost popular favor, but many still act on the belief that feeble minded men may be strong minded doctors; and that a physician may secure better knowledge with his legs under the social board, than with his head over the sick-beds of a hospital. Two hundred years were expended in teaching the public to protect health and life from the terrible scourge, Scurvy; and notwithstanding seventy-six years' knowledge of Vaccination, Small Pox is still barbarously permitted to stamp its odious mark on, and to hurry to the grave thousands annually. Proposals to so dispose of the dead as to inflict no injury on the living have been greeted with howls of popular indignation. Few are able to appreciate the important distinction between disease cured by drugs, and health restored by nature's healing force; and although doctors have long shouted from the house-tops "drugs do little to cure, but hygiene can do much to

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* A recent and able religious editorial refers to Mr. Darwin as a "madcap naturalist." No better illustration of superstitious prejudice is needed.

prevent;" yet the public persists in preferring a prescription to common sense, and fully justifies the wit's definition of a physician—"an unfortunate gentleman, expected every day to perform a miracle, to reconcile health with intemperance." It still cher. ishes the enervating beliefs, that diseases must be endured as unavoidable visitations, and that prayers may bend aside inexorable laws and restore the sick.

Passing from the general public to the so-called educated few, and what knowledge of nature's laws is here found?—so little, that the physician can seldom venture to avow to even his most intelligent clients ignorance, though it be unavoidable, of their maladies; and is often forced either to keep silent, or to pander to their nonsensical prejudices—so little, that he becomes accustomed to hearing the most learned and distinguished non-professional men display, as to the laws of health and life, a child-like ignorance, often skeptical as to well established facts, and credulous as to impossibilities—so little, that he is habituated to finding in the parlors of the élites, as on the public highways, instructing specimens of those, who by some occult process (surely supernatural?) have become self-confident proficients in that knowledge, to which he has given, with apparently less success, the devotion of a laborious life. Now, if such ignorance floats on the top, at what depth must public opinion be drowned, and in what evils must humanity be immersed?

Is any cause left to wonder, that medical skill should be often left unoccupied, whilst ignorant assurance secures profitable employment?—that starving doctors, shrewd enough to discover that credulity and suspicion are the children of ignorance, should find that by studying how best to feed the one and appease the other, less time is lost and more money is gained, than by studying medicine?—that medical students should be content to satisfy the public demand, and be anxious to accomplish this at the smallest sacrifice of time and money?—that colleges should abound to supply these students with the little they need, which little is a correct reflection of that which their patron, the public, demands, and therefore is all it deserves?—that when an intelligent few have succeeded in enacting wise laws to protect the public, it should refuse to enforce these laws?—and finally that honest men, fully alive to these evils, should despair of their correction by any means, except such as would rectify their cause, public opinion?

But why wonder at these lesser evils, when we witness the general recklessness as to all matters of health? That a Christian people should be enabled, when unavoidable death desolates its heart, to exclaim with resignation, "the Lord's will be done," is well; but why should a people, loving life and happiness, submit resignedly to such a vast amount of sickness and mortality, which are no more by heaven's will than that a hand should be thrust in the flame in order to be maimed? The one, as the other, results from the violation of physical laws, which have no clauses modifying their penalties, in favor of even their unconscious violators. Is it not reasonable to hope, that if these facts were appreciated, a large proportion of sickness and death would be remedied by adding to prayers the application of the proverb of a pious nation, "the Lord helps him who helps himself?"

Until the elementary principles of the scientific knowledge already acquired become more generalized, the public will continue to endure—the support of one in every seventy on the profits of sickness and death—the annual loss of an amount of productive labor* greater than financial panics ever cause—the addition to its miseries and burdens of numerous human runts, born loaded with the curse of a bad organization—the daily slaughter of innumerable infants by their ignorant parents—and the annual affliction of avoidable sickness and death† far greater in extent than dreaded war or epidemic pestilence ever inflict. Until the laws of health and life constitute a part of the knowledge of this people, there will be but little reduction in the number of its hospitals, asylums and prisons, of its incompetent physicians and redundant drug-stores, and of its sick-beds and grave-yards. These are the time honored remedies bequeathed by our ignorant ancestors; why expect similar ignorance to diminish or improve them?

Universal suffrage permits no hope that wise public conduct can ever emanate from an ignorant community; and therefore reasonable anticipations of reform must be based on enlightenment of the people. To accomplish this the public must be taught that there is no knowledge which would eradicate greater ills, and ensure greater prosperity, than a knowledge of nature's laws—

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* Certainly not less, and probably much more, than one-fiftieth of the total annual labor.

† From one-third to one-half of the total annual mortality, and a larger proportion of the total sickness.

that of these none are more important than the laws of life, and of these none are so important as the laws of health. The nation which may excel others in this knowledge—recognizing that healthy morals depend on healthy minds, and these on healthy bodies, that there is such a thing as physical morality, and that violation of the laws of health are sins—is surely destined to surpass all others in health, happiness and morality. Agassiz, the great Christian savant, has bequeathed, among many noble truths, none truer than that "Philosophers and theologians have yet to learn that a physical fact is as *sacred* as a moral principle." For certainly, the laws of nature are the laws of the Omnipotent, and if a knowledge of His Word deserves solemn consideration, what estimate should be placed on a knowledge of His works?

A future draws near which will find it difficult to believe, that Christians should ever have deemed ignorance of these works far less discreditable than ignorance of the mythical deeds of heathen gods—that our youths should be taught all about the nectar and ambrosia which such gods fed on, and nothing of that aerial ocean in which they live, and which they do at the same time feed upon and poison—taught to memorize the useless names, and to covet the pomp and power of kings and warriors, rather than to understand the daily phenomena before their eyes, and the causes of even those, as familiar as the health-giving wind and rain. If all this does not tend to exalt the thoughts and deeds of man above the thoughts and deeds of the Creator, I fail to comprehend its tendency; and I feel confident, that an approaching generation must decide that such an education could have been due only to the ignorance or prejudice of its teachers, and will declare that a savage armed with a hoe is nearer civilization than when decorated with paint and feathers. The two chief causes of this prejudice and ignorance are manifest—too much reverence for the past, and too little appreciation of the present.

Emerging from feudal barbarism, our ancestors promoted their onward march by arming themselves with the superior culture of Greece and Rome. Their progress had its birth in, and for many generations derived its chief growth from this knowledge. And now, though modern languages have long since robbed the Greek and Latin of all their treasures, prejudice, transmitted from the Middle Ages, persists in misnaming the rusty contents of these pillaged coffers, the erudition of wisdom! Our ancestors wisely honored this learning, for it was the most valuable they possessed, but human reason was not to be confined to the narrow limits of any dead past, however famous; and it has blazed a highway to a nobler development than Roman or Athenian ever hoped for.

Yet, we still have among us many of the (so-called) educated, who fail to appreciate, that even during their lives, Science has sprung from feeble and vacillating youth to vigorous and resolute manhood.* It has riveted our race into better union of hearts and brains by bonds of iron wires, bars, and boilers—has lavishly supplied those necessities of the body indispensable to higher mental culture—has taught us to convert to our pleasure and profit those physical forces which our forefathers trembled before as powers of the devil—and has not only rescued thousands of the victims of superstition from the dungeon, scaffold, and stake; but also pleadingly awaits to rescue myriads of the victims of ignorance from sickness, premature death, and other self-inflicted ills. It has substituted for the discouraging belief that man was the helpless victim of incomprehensible and capricious physical forces, the knowledge that he is subject to laws which are comprehensible and never-varying; injurious when disregarded, beneficial when rightly used. Inflexible and immutable, they leave the violator no hope of escape from their vengeance; they crush the unconscious as remorselessly as the conscious transgressor; they are as deaf to the prayers of the penitent saint as to the curses of the impenitent sinner; and as they do not postpone their hell of punishment for a spiritual future, so their heaven of reward blesses this life, and follows in the very train of obedience. To avoid their ills, and enjoy their blessings, it is indispensable that a knowledge of these laws should be popularized: and since popular education is one of the youngest of civilization's children, the noble birth of this century, there is good reason to hope, that time will teach how its power should be directed to effect the greatest good, and that the most important of all sciences to teach the young is Hygiene, the most important habits, those which promote health.

Objections are made to the popularization of this knowledge. Some inconsiderately urge that even its elementary principles

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* Disraeli, the distinguished chief of the government of Great Britain, in a recent speech, testifies to his appreciation of the spirit of his age, thus: "Science, within the last fifty years, has had much more effect in moulding the world than any political causes, and has changed the position and prospects of mankind more than all the conquests, and all the codes, and all the legislators that ever lived."

are too difficult for schools. This will be found true—only in those frequent cases, where the teacher is incompetent, rather than the scholars stupid.

Others urge that all this laudation is the enthusiastic declamation of specialists, and that other kinds of education are more important; such, for instance, as the "arma virumque cano," the domestic life of Venus, the list of Henry the 8th's six wives, or the boundaries of Borrioboola-Gha. It is deplorable that these objections often come from those who are deservedly most influential, for gray hairs associated with eminent learning deserve our honor. But a critic cannot fail to observe, that their learning is after all only the product of a half-education which altogether neglected the better part of knowledge; for they were educated under that mediæval system which ignored science, of which they remain so ill-informed, that their opinion as to its importance deserves no consideration whatever. Their failure to appreciate science is in no wise more astonishing than—that those uncultivated socially should denounce the amenities of good society, as foppish mannerism; that those uncultivated in music should prefer "Captain Jinks" to the best opera; and that those uncultivated in literature should spend more time over the *New York Ledger* than with Shakespeare. The mischievous prejudice which underrates the importance of a knowledge of nature's laws deserves to be equally disregarded; for it is unanimously condemned by the only competent judges, namely, those who, in general and classical culture, are the *equals* of the advocates of this prejudice, and who at the same time are greatly their superiors in knowledge of science.

Other objections are, that education does not increase happiness or morality, and that those well informed of nature's laws do, nevertheless, recklessly violate them. The individual illustrations of the truth in these assertions are so frequent and impressive, that the observer neglects to associate with the striking facts, as to a few, the whole truth as to the many; and is especially prone to forget, that an estimate of any influence on human progress necessitates full consideration of facts which have escaped his personal observation, those relating to preceding generations. The fact that education has apparently not increased the health, happiness and morality of some, does not by any means prove the whole truth as to the many. There is no potent remedy, however beneficial to the many, that may not equally well be proved ineffectual with, even injurious to some. Does any one believe, that a thousand men of education enjoy a smaller sum total of health, happiness and morality, than an equal number of the uneducated? Are they not more capable as citizens?. Do they not better know their rights, and how to maintain them, and are they not far more efficient in the struggle to promote that common weal, which conduces so largely to morality? If education fails to increase happiness and morality, then how explain very many such facts as, that the uneducated colored population of this city suffers nearly twelve times more by Small Pox than an equal number of the comparatively educated white population? Manifestly, the one by its knowledge avails itself of that protection which the other ignorantly rejects. Now, none will claim that teaching nature's laws as to Vaccination is teaching morality; yet no one, unless ignorant of the frightful history of Small Pox, can deny that teaching Vaccination has augmented the health, happiness, and morality of mankind.

Whilst such facts indicate that education has already benefited the public, three considerations will be briefly presented to show why it has not accomplished, and how it can be made to accomplish much more.

One cause is, that inherent "weakness of the flesh" which yields to a present gratification, oblivious both to the penalty of self-indulgence and to the reward of self-restraint. Is such weakness so totally irremediable, that it would not be benefited by that knowledge which enforces a deeper conviction of the greater gravity and certainty of the penalty, as also of the greater magnitude and certainty of the reward?

Another cause, allied to this, is that "second nature"—habit—which so often becomes more powerful than the convictions of knowledge, or the strength of will, can control. But it should not be forgotten, that bad habits are often directly due to bodily suffering, to disease resulting from ignorant disregard of the laws of health! None can deny that self-punishing habits are usually contracted before a conviction of their evils has been acquired; and none can doubt that an earlier knowledge of these evils would have certainly tended to ameliorate them. It should also be remembered that, even though the knowledge be acquired too late to appreciably improve the habits of the individual, it would be used to favorably influence others, above all those most loved, the generation to follow; and if a proper estimate is to be made of the total benefits conferred, then there must be added to the good bestowed on this generation, the much larger amount transmitted to succeeding ones.

A third cause why education has not yielded, but can be made to yield greater happiness and morality, is, that it has not been wisely directed to these special ends. Whilst it has largely promoted self-maintenance, it has almost ignored self-protection, ill-appreciating the importance of, as also the means to better secure, the blessings of health. Morality and happiness depend on many mental faculties, and on many conditions. These faculties, however high, are functions of the brain, requiring for their improvement, as do other cerebral functions, not only the proper instruction, but also the habitual use and healthfulness of the nerve-tissue. Of the many conditions none are more important than freedom from physical suffering. To ameliorate the causes of ill health is to diminish one of the greatest sources of pain and temptation, and therefore of unhappiness and sin.

Whilst the influence of health on *happiness* is generally admitted, its influence on morality has been most inadequately appreciated; so that, it was customary for churchmen—before the dependence of insanity on brain disease was established—to adorn their lessons with illustrations of what they denounced as "the innate depravity" of the insane. Similar beliefs still weaken the voice and hand of charity; for there is not yet a due appreciation of the subordination of the highest moral faculties to bodily conditions, and of the large proportion of sin which is due to disease and inherited physical defects. The proofs are readily found in such familiar phenomena, as the illusory hope and confidence of consumption; the timidity and apprehension of heart disease; the fretfulness and melancholy of alimentary disorders; the sullen moroseness, at times, of a naturally amiable and cheerful Epileptic; the moral perversions, which are often the earliest symptoms of cerebral disease; the overthrow of reason and conscience by the instinctive passions, when maddened by such causes as insufficient food; and the total demoralization produced by the habitual abuse of alcohol, and other blood-adulterators. In fine, statistical facts prove conclusively, that the conditions which attract disease repel religion, and that the community which is the most sickly is the least moral. Hence, no study is worthier the attention of the clergyman, the moralist, and the statesman, than that of the laws of health.

Although convinced that health and prosperity could be more rapidly promoted by properly directing education, than by any other means, it must not be supposed that other means, which have done much and are destined to do more good, have been forgotten. Every discovery and invention which furnishes more certain and easily applied remedies for disease; every improvement in the arts, or other cause which tends to cheapen the means of healthful living, promote health and prosperity. To such causes is largely due our relief from ancestral scourges, the horrors of which are unknown to most, and are inadequately realized even by the best informed.

The Black Death, the Sweating Sickness, the Plague, Leprosy, Scurvy, Jail Fever, Variola, Lead-Colic and Palsy, are some of the monsters, "scotched if not killed," which devoured a greater number of our forefathers than gunpowder ever destroyed. If we still endure such fearful havoc by Fevers, Scrofula, Consumption, Cholera, Parasitic and other avoidable diseases, which hasten to the dreaded tomb not less than one-third of all who die (even in healthy countries) it is not because science fails to teach the means to prevent them, but because an ignorant—I had almost said *criminal*—public fails to protect itself by using these means. How long must humanity wait before that ignorance which characterizes the public, and therefore its laws and the executors of its laws, shall be justly denounced as criminal? Will an apathetic public, which ensures remuneration for a horse disabled by official negligence, continue forever to stupidly fancy that its *whole* duty has been discharged, when it has commended to the consolations of another world those whose families have been desolated by still grosser public negligence?

Five hundred lives sacrificed by New Orleans* in 1873 to Small Pox alone! What a blow to its material prosperity! What a proof of semi-civilization! Why speak with intolerance of the barbarisms of our own race in the past, or of other races in the present?

If the views presented be well founded, then it must be concluded—

* New Orleans is no more culpable in this regard than the other cities of the United States.

1st. That defective medical education in the United States will never be improved to such extent as to constitute a national benefit, until public opinion has become sufficiently enlightened to demand and enforce this improvement; and if, anticipating this, a hopeful few should secure the enactment of reformatory laws, these would remain inoperative; for legal remedies, like medical prescriptions, require for their success, not only that they shall be taken, but also that the receiving body shall be sufficiently healthy to respond thereto. 2d. That defective medical education is a great but not the greatest evil which concerns the public health; and since the causes of both are the same, therefore the remedies for both must be the same. 3d. That in no one way can the future of this people be freed from greater evils, and be rewarded with greater blessings, than by its education in the laws of health, life, and nature. By the gradual popularization of such knowledge, public opinion would become more and more able to estimate and secure the best measures and men to guard that health, and promote that physical welfare, which are indispensable requisites for moral improvement.

The good to be thus conferred cannot be over estimated. Its accomplishment must depend in greater part on the medical profession, and this day imposes on each of you the new-born responsibility of using your knowledge, not only to cure but also to prevent disease—not only to promote the health of those units, your patients, but also the welfare of the mass, your community—and not only to destroy the ignorant prejudices so prevalent, but also to build up over these prejudices rational ideas, founded on well known facts and laws.

Remember, that though the physician's toil be obscure, there is no knowledge so little understood by and so hopeful of benefits to the human race, as that knowledge which has its greatest culture and its most eminent representatives in our profession. For Science—notwithstanding any doubts it may entertain as to what is truth—fights, not less than Religion, against the devil of falsehood and error, and in behalf of the God of truth and wisdom; and the little army which aids its victorious march is surpassed by none in self-sacrificing devotion to, and unfaltering reverence for the *only* device on its banner—*Truth for the good of all!*

ARTICLE IV. *Fatty Degeneration of the Heart in Yellow Fever.* By BAT SMITH, M.D., of Mobile, Ala., formerly a Student of Medicine in the Charity Hospital.*

Post mortem examinations of persons dying of yellow fever reveal the fact, that in the majority of cases the muscular structure of the heart has undergone a true fatty degeneration. Although this subject has of late attracted much attention, if I am correctly informed, no explanation of the process has as yet been placed before the public.

Before entering upon a discussion as to the probable or immediate cause of such a lesion in this particular disease, it would be well to describe, as briefly as possible, the nature of this retrograde metamorphosis, and to make a few observations in regard to other diseases in which a similar morbid condition exists.

True fatty degeneration consists in the intrinsic conversion of the proper tissue of the part into fat, and is, in consequence, a retrograde metamorphosis. Thus, in fatty degeneration of the muscles, the fibres themselves become pale, and under the microscope exhibit fatty globules or granules within the sarcolemma, being a conversion of the sarcous elements of Bowman into fat. As the change increases, the consistence of the muscle is impaired, the tissue grows friable, and readily breaks down under pressure; the contractibility of the muscle is affected, and even in some instances almost entirely lost, its power being weakened in proportion to the amount of morbid change which has taken place. This fatty degeneration is undoubtedly due to a disturbance of nutrition. The affected part not receiving the renovating and oxidating influence of healthy blood, or being itself from some cause unable to appropriate the substances from the blood necessary to its proper nutrition,† gradually passes into a condition of fat, the lowest principle in the scale of animal compounds. In consequence of the want of oxygen, a deoxydation of the protoplasm of the cells occurs, the ultimate products of the cellular interchange must therefore necessarily be different in character from those obtained when a sufficient quantity of oxygen is present, and the tissue is performing its normal functions. Under these

* A thesis offered to the Faculty of the Medical Department of the University of Louisiana, March 14, 1874.

† This last condition may accelerate the metamorphosis in any structure or organ injured by previous disease or accident, etc.

conditions the proper albuminoid principles of the cells can not be formed, and a retrograde metamorphosis occurs, the tissue being only able to produce a compound (fat), much inferior in rank to that existing when the different elements necessary to the proper nutrition of the part maintain their relative proportions.

This theory of the deoxydating process is disputed by some writers, among others, Munk and Leyden, who, in many cases, refer the cause of fatty degeneration directly to a destruction of the red blood corpuscles; but if we admit that the colored corpuscles are the oxygen carriers, the views of these able observers do not *necessarily* refute our argument, and we may still maintain our theory; for a destruction of a part of these elements must, as a natural consequence, be accompanied by a deficiency of oxygen in the circulating blood.

The numerous investigations made upon the subject of fatty degeneration of the heart demonstrate, that in all cases, except those following acute poisoning, especially by phosphorus, this morbid change is due to a more or less continued mal nutrition.

Paviot gives as a result of his careful observations upon the bodies of infants, fatty degeneration of the meninges of the brain, lungs, liver, kidneys and heart. These morbid changes he unhesitatingly ascribes to a perverted nutrition of those structures, and his conclusions are very rationally founded upon the fact that exactly similar results were obtained by him in his experiments with starved animals.

During the great epidemic of typhoid fever (typhus abdominalis) which visited the city of Koenigsberg, in the year 1867, that accurate observer, Neumann, was furnished with abundant material for the examination of the anatomical changes occurring in this disease. Among other morbid changes, fatty degeneration of the muscular structure of the heart was a prominent feature; this retrograde metamorphosis could, according to his opinion, be ascribed to no other cause than to a great want of nutritive material.

Dr. Callender, Surgeon to St. Bartholomew's Hospital, reports six cases of fatty degeneration of the diaphragm, accompanied by a similar change in the structure of the heart, which came under his examination from 1855 to 1858. The cause of death in three of these cases was tuberculosis, the ages of the patients being respectively 22, 32 and 50 years; the other three died of valvular disease of the heart.

*Laboublèue and Labarraque report a remarkable case of spontaneous rupture of the heart resulting from fatty degeneration of its muscular structure, the latter condition being brought about by a marked mal nutrition, as was shown by an extensive atheromatous disease of the aorta and of the coronary arteries throughout the whole of their extent.

†Prof. Simon, of Berlin, mentions a case very similar to the preceding one, wherein a spontaneous rupture of the heart occurred; the autopsy showed, besides a well-marked mitral insufficiency, a high degree of fatty degeneration of the muscular tissue of the heart. The coronary arteries were much affected by atheromatous deposits, and one of them contained a thrombus near the apex of the heart, at which place the rupture occurred. Prof. Simon considers this impediment to the healthy nutrition of the part to have been the immediate cause of the fatty degeneration of the heart's muscular structure, which finally resulted in the rupture of the organ.

The following observations were made by me at the Charity Hospital of this city, during the latter part of 1873.

Case I.—John Bocker, age 23 years, cause of death, chronic dysentery; was sick one week before entering the hospital; admitted August 28th, and died November 17th. Microscopical examination revealed a decided fatty degeneration of the muscular structure of the heart.

Case II.—Martin Finn, age about 40 years. Cause of death, emphysema of the lungs. According to his history, he had been sick at different times for several years, being under the impression that he was suffering from tuberculosis. About ten days previous to his death he was taken with an acute attack, which proved fatal on December 2d. When a portion of the muscles of the heart was placed under the microscope, fatty degeneration was plainly visible.

Case III.—Nathan Wilson (negro), age 66 years. Cause of death, poisoning by urea, brought about by a traumatic stricture resulting in retention of urine. The accident causing the stricture occurred three weeks previous to his death. He entered the hospital December 3d, and died twelve hours after his

* Jahresbericht, Virchow & Hirsh, vol. ii., p. 94. 1873.
† Ibid.

admittance. The structure of the kidney, as well as that of the heart, gave strong evidence of an extensive fatty degeneration.

Case IV.—Olive Alexander (negress), age 70 years. Cause of death, mitral regurgitation. She had been sick, according to her statement, for two years before entering the hospital. Admitted August 26th, and died December 6th. The autopsy showed a well-marked atheromatous degeneration of the aorta and larger arteries; the coronary arteries had undergone a similar change, and in one of them a thrombus was found, situated near the centre of its course. The mitral valves were covered with a calcareous deposit; the same was true of the aortic valves, but in a much lower degree. Upon a subsequent examination of the heart's structure with the microscope, fatty degeneration was found to exist throughout the heart's muscular structure, but was especially strongly marked in the columnæ carneæ.

Case V.—John Seldom (negro), age 62 years. Cause of death, chronic pneumonia. Sick about three weeks before entering the hospital. Admitted October 14th, and died December 7th. The heart was very much enlarged, and its muscles had undergone a decided retrograde metamorphosis, the microscope showing that the sarcous elements of Bowman had been converted into fat.

Case VI.—Maria Malin (negress), age 60 years. Cause of death, chronic Bright's disease. Entered the hospital December 3d, and died on the 15th of the same month. No clear history could be obtained from her farther than that she had suffered for a long time, but could not tell how long. The autopsy confirmed the diagnosis made during life; in addition the heart was found much enlarged, its valves being, however, in a normal condition. The fatty degeneration was in this case very strongly marked.

From the foregoing examples it will be seen that this retrograde metamorphosis in the muscular structure of the heart is due to a perverted nutrition, continuing for a longer or shorter period, this morbid change being apparent, not only in yellow fever, but in many and perhaps in the great majority of diseases where a continued mal nutrition exists.

In the summer of 1872, while making an autopsy in a case of yellow fever, my attention was attracted by the great congestion of the pneumogastric enlargement, and first cervical ganglion of the sympathetic, and upon a closer examination, the ganglia of the great sympathetic were found to be affected in a similar manner throughout the whole extent of the chain. At first I was much inclined to consider the redness of these ganglia to be due to simple hypostasis, but a more minute and accurate investigation of the subject convinced me that it had been the result of an active congestion. Since that time I have had the opportunity of seeing a good number of post mortems of yellow fever subjects at the Charity Hospital, and in every instance this congestion of the sympathetic ganglia was very evident. Although I feel some hesitation in asserting that this condition of the sympathetic exists in all cases of yellow fever, still I am strongly inclined to believe it to be present to a greater or less degree in nearly all, if not in all of those cases characterized by the more malignant symptoms of the disease.

Now let us see what train of symptoms this congestion carries in its progress, and to what disturbances of function it gives rise. We may be able, by carefully considering the consequences of such a condition of these nerve centres, to arrive at some conclusion as to the cause of the rapid change in the parenchyma of the great centre of the circulation.

It is a well established fact, that the sympathetic is the nerve of nutrition, and its action in the control of the dilatation and contraction of the walls of the blood-vessels is well known. A stimulus applied to the centres of these nerves will cause contraction of the walls of the blood-vessels, while anything tending to paralyze them will have a directly opposite effect, producing dilatation, and impeding the peristaltic action of the muscular coat of the vessels. As a consequence of a general impairment of the physiological condition of these nerve centres, a heavy congestion, accompanied by a partial stasis of blood results. Such a condition must necessarily be followed by an impaired aeration of the blood, which in this manner fails to receive its proper amount of oxygen. What must be the sequel of this great diminution of the sustaining element of animal life? It is obvious that in its absence the vitality of the frame can not be sustained, neither can the organic functions be preserved in equally balanced activity; for its presence is indispensable for the *physiological* chemical changes in the system. A deterioration or retrograde metamorphosis in the scale of organization must naturally follow, and textures lower in vital character and chemical composition be substituted for those existing in a state of health. Now the heart being undeniably the hardest working muscle of the body, it must, of necessity, consume more nourishment than the majority of the other organs; the disturbances in the general organism will, therefore, manifest themselves in the heart at a comparatively early period. Under the disordered state of the circulation, as mentioned above, its muscular structure cannot maintain its integrity, and a transformation ensues, the albuminoid principle of the muscles being replaced by fat, a compound which, perhaps with the exception of the amyloid corpuscles in the brain, as described by Virchow, holds the lowest rank among the animal compounds. I am aware that this view of the process of this retrograde metamorphosis may meet with objections from many sides, as fatty degeneration of the muscular structure of the heart has been ascribed (in cases where jaundice exists) by some authors of note to a retention of bile in the blood, but recent experiments—among others those of that most excellent chemist, Lehman, of Copenhagen—have altogether failed to confirm this idea. The results of these experiments show that bile, when retained in the blood, or injected into the veins of animals, invariably produces a fatty infiltration, but in no case was fatty degeneration of the muscular tissue to be recognized. It may be admitted, however, that the retained bile in the blood in yellow fever may be accessory to this retrograde metamorphosis in the heart's muscles, but *only in so far as* it causes a destruction of a part of the red blood corpuscles, thereby diminishing the amount of oxygen.

The well known experiments of Claude Bernard show that a section of the sympathetic produces an elevation of temperature accompanied by a vascular congestion of the affected parts, and I do not deem it unreasonable to suppose that the paralysis of the ganglionic chain throughout its whole extent, as in yellow fever, should be the cause of the high degree of temperature which we find in this disease.

The hemorrhagic tendency which we observe in yellow fever, I am inclined to ascribe to this universal congestion, effected through the above mentioned lesion of the sympathetic system, together with the great diminution of the fibrin in the blood of persons suffering from this malady.

A remarkable symptom in yellow fever is the slow, full pulse, which we nearly always have towards the end of the attack. Lately some speculations as to its cause have been entertained, which I am much inclined to consider as altogether untenable; we cannot possibly ascribe this slow, full pulse, which in yellow fever is usually considered by the physician as a favorable symptom, to the retrograde metamorphosis in the heart's structure; for such a pulse is far from being characteristic of fatty degeneration of the heart. Under ordinary circumstances the pulse of patients suffering from such a condition of the heart, is, as a rule, irregular, unequal, feeble and rapid; in extreme cases, it is true, the pulse may fall rather low, owing to the failure of certain systoles of the heart to communicate a pulsation to the radial artery, the heart's action itself being rapid, but very feeble. In yellow fever, however, the presence of the bile in the blood may account for this phenomenon by the sedative influence which it exerts over the heart's action, giving rise to this slow pulse. This sedative influence of bile upon the heart when retained in the blood has been well established by numerous experiments upon the lower animals, such as the injection of bile into the veins of dogs, which is always found to be followed by a diminution in the frequency of the pulse. Numerous clinical observations fully confirm this view of the sedative action of bile upon the heart; it is well illustrated in many of those diseases where jaundice exists—especially is this the case in malarial hæmaturia. In this disease the pulse falls very low, its frequency diminishing as the jaundice increases in intensity.

ARTICLE V. *Mean of Observations on the Number of Pulse-Beats per Minute. Taken during the Year* 1871. By JNO. CHANDLER, M.D., Memphis, Tenn.

	A. M.								P. M.											
	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
January.......	.	...	64	64	70	70	68	66	70	70	70	69	67	68	67	66	60	57	57	...
February......	60	62	65	70	68	69	66	69	72	72	70	72	67	67	67	66	63	59	...	56
March.........	...	...	...	...	...	...	....	...	..	...	...	..	...	.	...	...	...	...	...	...
April	...	62	66	70	68	66	64	70	67	70	72	76	72	68	64	62	...	...	..	...
May....	56	63	66	69	67	65	65	68	71	69	69	69	67	66	66	67	68	64	61	61
June,..........	56	59	65	70	67	67	55	64	70	73	70	68	67	69	69	66	68	64	...	...
July...........	...	56	69	72	68	68	72	69	71	69	71	69	70	69	68	71	70	67	57	...
August........	...	56	59	70	74	...	...	71	69	73	72	69	....	69	68	71	69	66	67	...
September.....	...	..	59	67	67	68	66	67	69	73	73	74	70	72	..	..	...	.	...	...
October........	...	58	61	62	68	69	69	68	70	72	73	70	69	69	67	68	62	59	...	...
	57	58	63	68	68	67	67	68	69	71	71	70	68	68	67	67	65	62	60	58

The above represents the average of 874 observations, distributed as follows—in January, 118; February, 151; April, 23; May, 179; June, 83; July, 111; August, 74; September, 47; October, 88. These observations, being very limited, are, of course, only approximations, yet I think the total mean will be found nearly correct. It will be noticed that in July and August, at 8 o'clock, p. m., the pulse is represented to be 71, which I think is too high, as the number of observations for that hour are too small to be reliable. The maximum pulse is later in summer than in winter. I think a more decided rise and fall takes place before noon than this table shows.

PROCEEDINGS OF THE NEW ORLEANS MEDICAL AND SURGICAL ASSOCIATION.

Ovariotomy; its History and Statistics, with a Description of the Operation. By L. S. McMurtry, M.D.

Mr. President and Gentlemen:—In compliance with my appointment to read a paper upon some medical or surgical subject, I appear before you this evening.

It could not be expected of me to deduce valuable lessons for you from an experience which, from the nature of things, is limited both in time and extent, when compared with the extensive service, both in hospital and private practice, of many members of this body. However, I shall endeavor briefly to trace the steps which have established *ovariotomy* as a legitimate surgical procedure, and to describe the most approved methods of operation, without entering into the pathology, diagnosis, varieties, symptoms, &c., of ovarian tumors. The fact that it has fallen to my lot upon more than one occasion to witness the operation in the capacity of assistant, will explain my selection of this subject.

Though various attempts have been made to establish the antiquity of the operation, it is undoubtedly of comparatively recent origin. The fact that certain Lydian kings frequently removed the ovaries of healthy women, and that Dr. Percival Pott, of England, near the close of the eighteenth century, removed both ovaries, has been cited in this connection. But this can have no connection with ovariotomy, as the castration of females and the removal of the healthy ovaries after they have descended into the inguinal canal (as was the case of Dr. Pott), are quite

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NOTE.—It is proper to state here that we are indebted for many facts contained in this paper to the chapter on this subject in Thomas on Diseases of Women, and the excellent treatise on Ovarian Tumors by Peaslee.

different procedures to the removal of an immense cyst from the abdominal cavity, after it has contracted adhesions to the abdominal parietes and neighboring viscera, and has been supplied with large blood-vessels. In reviewing the history of this subject, we find that in the year 1685, ovariotomy, in the proper sense of the term, was *discussed* by various surgeons of high repute in Europe, and the discussion frequently repeated during that century; yet no one dared enter the peritoneal cavity and bring away one of these immense tumors. Although the disease was by no means of rare occurrence, and consequently daily attracting the attention of surgeons, it was not until the year 1758 that any one dared to propose the operation for removal, which was done by Delaporte to the Royal Academy of Surgery. This proposal was echoed by various surgeons from time to time, and in 1787 we find John Hunter advocating the operation: still none would venture their reputation upon the hazardous experiment. In 1793, Mr. John Bell, an able and distinguished teacher of surgery at Edinburgh, which was at that time the acknowledged medical centre of the world, devoted especial attention to the diseases of the ovaries. Now that the medical mind had been prepared for the consideration of ovariotomy, he dwelt at length on the possibility of recovery following such a severe operation, and suggested a specific plan for its performance. A young American, a member of the class in Edinburgh, was profoundly impressed with the subject, and fourteen years afterward, at his home, took the initial step in a procedure which had for a long time received the attention of so many great surgeons. This was Dr. Ephraim McDowell, of Danville, Ky., who is universally acknowledged to be the father of ovariotomy. Dr. McDowell operated thirteen times with eight recoveries; and it is only when we recal to mind that anæsthesia was then unknown, that there was no precedent, and that he had no practiced assistants, that we fully appreciate the sound common sense, skill and courage of this pioneer in this department of surgery. In order to contrast the mode of operating at that time with the modern improved method of performing ovariotomy, we will read a report of the first operation, which was written by Dr. McDowell, and published in "The Eclectic Repertory and Analytical Review," published at that time in Philadelphia.

"In December, 1809, I was called to see a Mrs. Crawford, who had for several months thought herself pregnant. She was affected with pains similar to labor pains, for which she could find no relief. So strong was the presumption of her being in the last stage of pregnancy, that two physicians who were consulted in her case requested my aid in delivering her. The abdomen was considerably enlarged, and had the appearance of pregnancy, though the inclination of the tumor was to one side, admitting of an easy removal to the other. Upon examination per vaginam, I found nothing in the uterus, which induced the conclusion that it must be an enlarged ovarium. Having never seen so large a substance extracted, nor heard of an attempt or success attending any operation such as this required, I gave to the unhappy woman information of her dangerous situation. She appeared willing to undergo an experiment, which I promised to perform if she would come to Danville (the town where I live), a distance of sixty miles from her place of residence. This appeared almost impracticable by any, even the most favorable, conveyance, though she performed the journey in a few days on horseback. With the assistance of my nephew and colleague, James McDowell, M.D., I commenced the operation, which was concluded as follows: Having placed her on a table of the ordinary height, on her back, and removed all her dressing which might in any way impede the operation, I made an incision about three inches long, from the musculus rectus abdominis, on the left side, continuing the same nine inches in length, parallel with the fibres of the above named muscle, extending into the cavity of the abdomen, the parietes of which were a good deal contused, which we ascribed to the resting of the tumor on the horn of the saddle during the journey. The tumor then appeared full in view, but was so large we could not take it away entire. We put a strong ligature around the Fallopian tube near to the uterus; we then cut open the tumor, which was the ovarium, and the fimbriated part of the Fallopian tube very much enlarged. We took out fifteen pounds of a dirty, gelatinous-looking substance, after which we cut through the Fallopian and extracted the sac, which weighed seven pounds and a half. As soon as the external opening was made, the intestines rushed out upon the table, and so completely was the abdomen filled by the tumor that they could not be returned during the operation, which was terminated in about twenty-five minutes. We then turned her upon her left side to permit the blood to escape, after which we closed the external opening with the interrupted suture, leaving out at the lower end of the incision the ligature which surrounded the Fallopian tube. Between every two stitches we put a strip of adhesive plaster, which, by keeping the parts in contact, hastened the healing of the incision. We then applied the usual dressing, put her to bed, and prescribed a strict observance of the antiphlogistic regimé. In five days I visited her, and much to my astonishment found her engaged in making up her bed. I gave her particular caution for the future, and in twenty-five days she returned home, as she came, in good health, which she continues to enjoy."

The experiment so successfully made by McDowell at once attracted the attention of European surgeons, and they soon began to introduce the operation into their own countries. But with some the results were very poor, and with others by no means encouraging. In 1840 we find that the operation had almost fallen into disrepute, and many cases demanding the operation permitted to await the always fatal result. At this time, Dr. Charles Clay, of England, began to press the operation upon the notice of the profession, and to him is especially due the credit of the revival of the operation. In England the most brilliant results have followed the operation, and the names of Wells, Clay, Keith and Brown, have become famous in connection with the same. In this country, Atlee, Dunlap, Bradford and Peaslee, have joined their labors in bringing the operation to its present improved condition. Several important modifications have been advanced by Germans, but in France the results have been so discouraging, that it is only of late that the operation is being regarded with favor. During the past five years the most important improvements have been made in the operation, and it has assumed its place as a legitimate and advisable procedure.

When we consider the gravity of the operation, it will be evident from the statistics which we will give, that ovariotomy is followed by remarkably fine results; and it will also be evident that practice and close attention to the details of the operation are the essentials of success.

Having sketched out in a rude manner the conception, birth and growth of ovariotomy, we at once proceed to a description of the operation itself.

There are two varieties of ovariotomy—vaginal and abdominal. As the former is only applicable to small tumors and rare cases, we shall only devote a small portion of our space to its consideration. When the tumor is not larger than the head of a child one year old, and falls into the cul-de-sac of Douglas, it is proper to resort to vaginal ovariotomy. To perform this operation the patient is placed in the knee-elbow position, and retained comfortably in this position by an appropriate apparatus. The operation has recently been performed by Dr. Gilmore, of Mobile, with the patient in Sims' position. The rectum, of course, should be previously emptied. A rectal bougie is inserted to prevent the rectum falling within the line of incision. Sims' speculum is now introduced, and the perineum and posterior vaginal wall well elevated. The operator then seizes the vaginal wall midway between the uterus and rectum with a tenaculum; and after satisfying himself that the rectum and all pulsating blood-vessels are without the line of incision, he cuts into the peritoneum with a pair of curved scissors. The incision should be made to divide the walls of the vagina, and then, when all oozing of blood has ceased, the peritoneum should be carefully drawn down with a tenaculum and divided. After this step of the operation the patient is placed on her back, when the tumor will fall into Douglas' cul-de-sac. Being held firmly with a tenaculum, it is punctured with a trocar and the fluid permitted to escape through the vagina. When a sufficient quantity has escaped, the sac is to be drawn into the vagina, when the position should be again changed to that of Sims. The sac is then drawn firmly down until the pedicle is reached, when it is transfixed with a double silk ligature and firmly tied. The cyst should then be cut off, and the ligatures either cut short and returned with the pedicle, or they may be allowed to hang from the vagina. After thoroughly cleaning the parts and seeing that the pedicle is secure, it is returned to the abdomen. The incision in the vagina is to be closed by one or two silver wire sutures, and the operation is completed, Ovariotomists are of the opinion that the scope of this operation will never be very great, as it is applicable only to rare cases, and is very difficult to perform when the vagina is deep. To afford some idea of the difficulties which may occur in this operation, we will mention that Prof. T. Gaillard Thomas, who, as we all know, has a very intimate acquaintance with the anatomy of these parts, was not ready to attempt the operation until he had cut through the fornix vaginæ upon seven dead bodies.

We now come to the consideration of abdominal ovariotomy, which we purpose taking up in detail. When we come to study this operation as practiced by the great ovariotomists, we find that in every step of the operation there is difference of opinion. In order to judge of the merits of various methods it is well to resort to results, and we shall give statistics showing the results of the various operators, with their peculiarities in operating. Although good results must depend upon practice and close attention to the minutiæ of the operation, yet from a study of the statistics given herewith, it will be evident that no very great advantage has been derived from any peculiarities of the great ovariotomists. (See table of statistics.) The operator having fully assured himself of the correctness of the diagnosis, the operation having been determined, and the day selected, no doubt as to a favorable result should be expressed in the patient's presence. The patient is to be prepared for the ordeal by a tonic course of treatment. In this connection we will mention that almost every authority attributes some special value to the preparations of iron at this time. Gentle exercise, pure air, and cheerful surroundings, are of great value in this preparatory treatment. Two days previous to the operation the bowels should be freely opened by a gentle aperient. The catamenial period should be passed a week previous to the operation, so that all unnecessary determination of blood to the vicinity of the operation may be avoided. Neither the operator nor his assistants should be the medium of communication of disease by attending an autopsy or dissection near the day of the operation. The rectum should be emptied by an enema a few hours previous to the operation, and the bladder relieved of its contents just before the patient goes to the table. A small dose of opium a short time previous to the operation is advised by some for its antiphlogistic effect. The temperature of the room should be about 80°, and moistened by the evaporation of water.

The position most agreeable to patient and surgeon is the half-reclining posture. In the choice of an anæsthetic, that one should be selected which is least liable to produce vomiting. (See table of statistics.) The patient being anæsthetized, the operator takes his position upon the right side of the patient, and with a bistoury makes an incision in the linea alba from a point about two inches below the umbilicus to a point above the symphisis pubis. On referring to the accompanying statistics it will be observed that operators differ as to the length of the incision, the short incision being somewhat favored. When the tumor is reached, should the incision be found too short it may be extended upward, going to the left of the navel, in order to avoid that relic of fœtal life extending from that place to the liver. Passing through the skin and adipose tissue, the sheath of the recti muscles is to be sought, which should then be caught up with the tenaculum, punctured, and divided upon the groove-director. The incision is then continued in the interval between the recti muscles, until the parietal peritoneum is reached. Waiting here until all hemorrhage has ceased, this, too, is divided upon the groove-director. Though this incision seems very simple, we find that distinguished operators have, upon more than one occasion, only carried the incision to the parietal peritoneum, and in searching for adhesions have torn this from the abdominal muscles, supposing that they were within the abdominal cavity. The abdomen now being open, the tumor is easily recognized, and the next step in the operation is the searching for, and breaking up of adhesions. The operator should pass a large steel sound around the tumor to ascertain the extent of the adhesions. Just at this stage of the operation a great deal may be judged as to the result by the character and extent of the adhesions. Should the attachment be principally to the abdominal walls, they may be broken down with impunity, but should there be extensive attachments to the omentum and the viscera, it is often necessary to abandon the operation and close the incision. If the short incision has been adopted it is often necessary to extend it in order to avoid traction in reaching the adhesions. The extent of adhesion having been thus determined, the hand of the operator is cleansed, dipped in tepid water, and then passed around the tumor, and the adhesions carefully broken down. This is the step of the operation requiring the greatest care and skill. Omental adhesions are to be treated with special care, for they are very vascular, and when divided should be secured by ligatures of fine silk or catgut. Rupture of the cyst wall, and escape of the contents into the peritoneal cavity is especially to be avoided. Very firm and vascular adhesion, on this account, should receive attention after the next step of the operation, viz: tapping the cyst. For this purpose a special trocar and canula has been adopted by Mr. Spencer Wells. It is provided with pincers by which it is attached to the cyst-wall. As the fluid passes out the abdominal walls should be compressed against the tumor, so as to prevent the escape of any fluid into the peritoneal cavity. Before introducing the large trocar an exploratory puncture should be made to determine whether the tumor be a cyst or a solid tumor.

Should the cyst be unilocular it will be emptied without difficulty, but should it be multilocular it will be necessary to introduce the finger and break down the partitions, the trocar being withdrawn. The sac being almost or entirely emptied, is then drawn forward, and attention directed to any adhesions which have resisted previous efforts. The injury of viscera and hemorrhage are to be especially avoided here. Should a dissection be necessary, it is always to be done at the expense of the cyst-wall.

All adhesions being overcome, and the cyst withdrawn from the abdomen, we approach that step of the operation in regard to which the practice of various operators differs most widely, and which often presents many difficulties. We refer to the treatment of the pedicle. The object in treating the pedicle is to secure it against hemorrhage, and at the same time to employ such means as are least liable to be followed by peritoneal inflammation. There are two plans of treating the pedicle, intra-peritoneal and extra-peritoneal, each of which has several varieties. Under the first method, intra-peritoneal, (1) the pedicle may be ligated with strong silk, the cyst cut away, and the stump dropped back into the abdomen, with the ligatures brought out at the lower part of the incision; or (2) the pedicle may be ligated, and both ligatures and silk cut off, and the stump dropped back to the abdomen, and the incision entirely closed; or (3) the pedicle may be divided by the actual cautery and returned to the abdomen; or (4) by the ecraseur. Still another method coming under this heading, and which is undoubtedly an invaluable resource in those cases in which it can be used, is the method of enucleation, introduced by Dr. Miner, of Buffalo, New York, and successfully practised not long since by Professor Samuel Logan, of this city. It consists in detaching the cyst, by means of the handle of the scalpel and the fingers, from its vascular attachments, and turning out the cyst and closing up the incision.

As to the extra peritoneal mode of securing the pedicle, (1) it may be securely ligated and the stump fixed in the wound; or (2) it may be secured with a clamp, which holds the stump in the wound.

The demands of each case, the length of the pedicle, etc., should determine the choice of these various methods, but we find that each has its advocate.

From the statistics which we have been able to obtain, it seems that no marked difference is made in results by the different modes of treating the pedicle; yet we would be rather inclined to favor the intra-peritoneal method of ligating the pedicle securely, cutting off both ligature and cyst, and leaving the ligatures to be encysted in the peritoneal cavity. (See table of statistics.) The pedicle having been secured, the peritoneum is then carefully cleaned. Recent investigations indicate that many fatal results attributed to peritonitis are really due to septicemia, hence the thorough cleansing of the peritoneum is a very important step in the operation. To further obviate this danger, Dr. Marion

Sims has made the most important of modern additions to the operation. This consists in puncturing the cul-de-sac of Douglas after the peritoneum has been thoroughly cleansed, and passing a drainage tube into the vagina. One extremity of the tube is to project from the lower part of the abdominal incision, and the other from the vagina. This secures free vent of fluids, and furnishes the means of washing out the peritoneal cavity.

Ovariotomists differ as to whether the peritoneum should be included in the sutures by which the wound is closed, but the results of the operation indicate that this is a point of no great importance. The deep sutures are composed of silver wire, and are carried through the parts some distance from the edge of the flaps. The superficial parts are closed with the ordinary pin suture. The operation being completed, the patient should be cleansed and put to bed. A wide flannel bandage is placed around the abdomen, warmth to the feet, and the ordinary means of producing reaction used. As soon as the effect of the anesthetic has passed off, opium should be given to procure complete rest of the parts, and for its antiphlogistic influence. The urine is to be carefully voided with the catheter to prevent straining. The dangers to the patient, in the order of their occurrence, are hemorrhage, nervous prostration, peritonitis and septicemia.

Should hemorrhage occur, the wound should be at once opened, the source of the hemorrhage sought, and the bleeding effectually checked. Nervous prostration, peritonitis and septicemia of course should receive the same treatment as when occurring under other circumstances.

TABLE OF STATISTICS.

OPERATORS.	Number of Cases.	Number Saved.	Per cent. Saved.	PECULIARITIES IN OPERATING.
Spencer Wells.	500	375	75	Anæsthetic. Bichloride of Methyline. Short incision. Pedicle fixed externally by clamp.
Clay...........	250	182	72.80	Long incision. Pedicle secured by double ligature; stump returned to abdomen, and ligature projecting through incision.
I. B. Brown..	120	84	70.01	Pedicle divided with actual cautery, and stump returned to abdomen.
Keith..........	136	111	81.61	Short incision. Pedicle fixed with clamp.
Tyler Smith..	17	14	82.35	Pedicle ligated; ligature cut short, and stump returned to abdomen.
W. L. Atlee....	216	172	70.	Anæsthetic. Sulphuric ether. Pedicle secured by clamp.
Dunlap........	60	48	80.	Pedicle ligated; stump returned, and ligature projecting through incision.
Bradford.......	30	27	90.	Pedicle ligated; ligature cut short, and stump returned to abdomen.

Mr. Spencer Wells' Cases.

Of the first 100, 66 recovered; 34 died.
Of the second 100, 72 recovered; 28 died.
Of the third 100, 77 recovered; 23 died.
Of the fourth 100, 78 recovered; 22 died.
Of the fifth 100, 82 recovered; 18 died.

The twenty-three last cases are without a single fatal result.

On the Use of Villate's Mixture in Chronic Otorrhea. By R. R. Hopkins, M.D.

Gentlemen:—The introduction of Villate's Mixture in the surgical therapeutics is of recent origin. A French veterinary surgeon having stated, that with the use of this solution he daily cured caries of bones in animals, and especially in the horse, Dr. Notta first thought of applying the remedy to the human subject, and in March, 1863, published six observations. The celebrated Nelaton heard of the result, and gave it a trial in his extensive practice, both in the hospital and outside. His successes were such as to bring this new therapeutical agent to the notice of the medical world.

In March, 1866, Dr. Notta published two memoirs confirmatory of these assertions, which proved to be worthy of a premium from the Academy of Medicine and a reward of 3000 frs.

It was in January, 1829, that Villate, the author of this solution, made known his first successes.

In 1831, Mr. Miroud gives the formula of the mixture of Mr. Villate and says: "I have had several times the opportunity of observing its salutary effects in cases of caries. I noticed that it hastened the exfoliation of the necrosed or carious parts, gave a more healthy appearance to discolored surfaces, and had a tendency to stop certain morbid exhalations."

During the ensuing ten years no mention is made of this preparation. Some practitioners used it, but never published the results of their observations.

Up to 1842, the operation on the horse for fistulous withers was very frequently performed; but from that time, and since the publication of some very good observations on the use of this mixture injected in the fistules resulting from caries of the fibro-cartilage of the bone of the foot (javart cartilagineux), that operation was altogether put aside.

From this date the solution became generally known, and the reputation of a few eminent veterinary surgeons is due solely to the rapid cures obtained by the use of this preparation.

They employed it against denuded surfaces, fistules, caries, necrosis, profuse secretions, catarrhs of the ear, and some skin diseases of long standing. They always observed that the greater the chronicity the more satisfactory was the result. Its use was to be kept up until complete recovery. Even in cases where instruments had to be used for the removal of a large sequestrum the topical application of this agent subsequent, as also previous to the operation, has always proved itself superior to all other known substances.

This is sufficient to show the importance of the preparation amongst veterinary surgeons.

I shall not occupy your time, gentlemen, in stating the many cases in which this solution was successfully employed by the best European authorities. As with all new preparations, it was expected to cure every conceivable pathological secretion, and large experiments were made and published to promote its adoption, to the exclusion of all other remedies recommended before. It has been used in caries of almost every bone and articulation of the body; in cold abscesses of the neck, deltoid region, back, superior third of the thigh; in fistules resulting from abscesses by congestion; those of the lacrymal gland, of the anus, of tuberculous affections of the testicle, etc., etc. Diluted in water, 1 part to 10, it is said to cure every case of gleet.

Though I am inclined to believe that the efficacy of the mixture has been exaggerated by its advocates, still I do not doubt of the accuracy of the observations gathered and published, and think it a good addition to our therapeutics. Lately in Paris, Dr. Polaillon cured several cases of chronic otorrhea with this solution. The facts were so evident, the treatment so simple, that I concluded to use it in such cases, should I have an opportunity. During the last two years I have used it successfully four times; and in my researches having failed to find any mention made by American physicians where this preparation has been used, I concluded to present to the Association my observations, with a few general remarks on the mixture.

The original formula of this solution, as first composed by Villate, is as follows:

℞—Liquoris plumbi subacetatis, ℥i,

Cristal. { Zinci. sulphatis / Cupri. sulphatis } aa . - ℥ss.

Aceti. vini. albi. - - - - f. ℥vj ss. ♍

Dissolve the salts in the vinegar and add the subacetate of lead. Shake before using.

Dorvault, Bouchardat, and some other authors put ℥viij of vinegar instead of ℥vjss; but Dr. Notta does not think that this modification is of any advantage, and prefers Villate's original formula.

It is very important that this preparation should be made as I stated. Druggists very often substitute for the white wine vinegar a solution of pyroligneous acid, in which case the liquid acts like a powerful caustic, and the patient cannot bear its application. These two solutions can be very easily distinguished at first sight: when the pyroligneous acid is used the solution, once settled, has a bluish hue; but when prepared with the white wine vinegar it has a greenish hue. This is a capital point, for surgeons have noticed a great difference in using both preparations on the same patient. The pyroligneous acid solution has produced excessive pains and serious symptoms of irritation and inflammation.

I do not understand the idea of Villate in combining such substances, for the result is a general decomposition. M. Courteille, a celebrated French chemist, made a careful analysis of the mixture, and found the following ingredients:

Sulphate of lead	4	grammes
" " copper	3.988	milligrammes.
" " zinc	4.526	"
Acetate of copper	1.598	"
" " zinc	1.216	"
Tartrate of potassa and coloring matter	1	gramme.
Vinegar	83.672	milligrammes.
	100.000	

The greenish hue of the solution is due to the small proportion of coloring matter contained in the white wine vinegar.

This analysis shows that the acetate of lead is entirely decomposed, and an insoluble sulphate of lead is formed: but the other salts, sulphates and acetates of copper and zinc are dissolved by the vinegar which is in excess.

Evidently the mixture of Villate owes its precious qualities in therapeutics to the presence of all those substances entering into its composition, and not to any special one to the exclusion of the others. Each of these salts tried alone acts more or less like an astringent or a caustic, but does not give the same results: therefore, however strange seems to be the preparation, it is preferable not to modify it as some have proposed to do.

The mixture of Villate when first injected into a fistule, or applied to a wound, produces a sharp pain which may last an hour or more; but the patient soon becomes accustomed to it, and in a few days bears it without complaining. To avoid violent pains in nervous or irritable patients it should be at first diluted with water, and the dilution gradually made stronger until they can bear it pure. The first injections determine inflammation in the parts coming in contact with the solution. Those inflammatory symptoms are generally limited. Suppuration is more abundant, but will soon diminish and stop entirely, which indicates a rapid process of cicatrisation. In caries, flakes of bones will very often be washed out by the injections, or thrown out with the suppuration, but after their elimination the cure will soon follow.

Judging from the effects produced, the mixture of Villate seems to act as a mild caustic in stimulating the wounds, and sometimes in forming on the surface a thin eschar, or a false membrane, which when removed leaves a healthy and granulating tissne ready for cicatrisation. This escharotic action in some cases may be too active, therefore it is necessary to watch the effects of the mixture, and not to allow it to remain in the bottom of wounds. The mixture of Villate could not be used, like tincture of iodine, in the treatment of cysts or circumscribed collections ; in other words, in cavities not communicating with the exterior, into which more or less tincture of iodine can be safely injected. It is necessary that it should run out easily : it should therefore be employed only in the treatment of those cavities communicating with the exterior by means of fistules.

The effects of these injections are local. Some authors, however, declare that when the injections stop prefuse suppurations, the modification brought over the local affections is such that patients recuperate very fast, appetite and strength are restored, and they themselves call the attention of the surgeon to the change.

The results of the mixture of Villate on man and animals are the same; but in man the sensibility to suffering is more developed, and we must make more allowance for the symptom pain; and thanks to the solution carefully used, Dr. Notta says, "the surgeons can cure some affections in a short time, when in the former times the bistoury seemed to be the *ultima ratio*."

Observation I.

Mr. X., while a soldier during the Franco-Prussian war, had the membrana tympani of the left ear ruptured by the concussion caused by firing off a cannon. Immediately after the accident, and for several days, he was almost completely deaf. At that time an abscess formed itself in the left ear, and as soon as the suppuration commenced running, hearing became more distinct in the sound ear. In spite of everything done by the surgeon of the regiment, the discharge could not be stopped entirely. X. consulted since several physicians, and experienced momentary relief from the use of different injections, but was unable to get rid of the offensive discharge. When I saw him in April, 1872, I proposed the trial of Villate's mixture; he first objected, but concluded to accept it as a change. If directed to close his mouth and blow his nose, I could perceive bubbles of air rising from the suppuration, which indicated a perforation of the m. t. I prescribed, nevertheless, Villate's mixture, and diluted it at first in two parts of water. Once every day in the morning, a few drops were poured to fill up the auditory canal (meatus auditorius externus). The patient, under instructions, would lay quietly for ten minutes on the right side of the face, then wash the ear with water and keep a piece of cotton in the external meatus. The second week I used two parts of the mixture for one of water, and the next week I injected the solution pure. The treatment lasted five weeks, suppuration stopped entirely, the tympanum cicatrised, and now the patient is well; hearing is in great part restored, and the discharge has never reproduced itself in the last twenty months.

Observation II.

G., boy five years old; strumous constitution; had for six months a profuse and offensive discharge from the right ear. I used the Villate mixture as in the first case, and though the M. T. was also perforated I had the same success, but the treatment lasted two months. Besides the local application it was necessary to keep the child under the constant use of tonics. A few weeks ago I heard that the child died of scarlet fever in St. Louis. The family told me that he was free from any discharge from that ear up to the day of his death; the hearing was almost natural; they scarcely noticed any difference between the two ears.

Observation III.

In December, 1872, C., boy aet. 12, had an abscess in the left ear. I commenced immediately the injections of Villate's mixture, but after a trial of about six weeks the mother told me that she was not going to trouble herself any longer with the child; that nothing could stop the running. In September, 1873, during the epidemic of dengue, I was called again in the same family. The boy's ear was still discharging, and I proposed then the same treatment, expecting a better result. The mother promised to be more careful, and less than two months afterwards she announced to me that the suppuration had stopped entirely. I attributed the first failure to the want of proper care or intelligence on the part of the poor mother, but now I think that I used the remedy empirically and without any indication. Dr. Notta says that it should be prescribed but in chronic cases, and I used it in the acute stage, which accounts for the first failure, whilst applied a few months later it succeeded very well.

Observation IV.

An old colored woman, though very healthy, had for over a year a discharge from the left ear when she applied to me, in August, 1873. I ordered Villate's mixture to be used in the manner stated above, and after a treatment of about six weeks the suppuration stopped, and now she is very well.

Two Cases of Burns of the Cornea. By Dr. V. Grima.

Gentlemen:—I shall mention two cases of burns of the cornea that came recently under my observation. I wish to mention these cases as a contribution to the history of such injuries, for I shall venture to state that very little information is to be derived from our text-books concerning the subject.

Two small children, three or four years old, received what appeared to be a severe injury to the eyeball. The accident in one case resulted from hot oil dropping in the child's eye; in the other case the cornea had been burned with a hot iron (instrument for ironing linen). I saw both children a short time after the accident, and I was very much alarmed at the condition of the cornea in both cases. In the first case (hot oil) the whole of the central portion of the cornea, to the extent of about two lines within the sclero-corneal margin, had been burned by the hot fluid; it was entirely opaque, and presented a peculiar blueish-gray color (similar to that of ashes from a cigar), the circular zone of corneal tissue that had escaped the contact of the fluid remained entirely transparent. The opacity to the cornea in the other case (hot iron) presented exactly the same color, but its location was different; it extended over the whole of the upper half of the cornea, and even more, for it began a little lower than the inferior margin of the pupil, which was thus hidden from view. In both cases the cornea presented the following appearance: the surface of the destroyed tissues had preserved a uniform and polished aspect, no blister or protrusion of any kind being visible; the burned tissues were on a level with the surrounding portions of cornea, which were perfectly sound and entirely transparent; the line of demarcation between the destroyed tissues and the sound cornea offered no protrusion or separation, and was only marked by the opacity and peculiar color of the burned tissues sharply defined from the complete transparency of the sound cornea; the blueish-gray color was uniformly spread all over the surface of the injured parts, no other coloration existing at any point. The conjunctiva had escaped injury in both cases.

Being much pressed by the parents to give a hasty opinion, I thought that the extent of the destroyed tissues, together with the future necessity of an operation for artificial pupil in case of recovery, the fact of the cornea being opaque, the threatening danger of sloughing on an extensive surface, were sufficient grounds for a reserved prognosis. The only treatment used, however, was to keep a wet rag over the eye day and night. The next day I saw both children; the cornea, in each case, had completely recovered its entire transparency; not the slightest indication remained of any previous injury. I concluded that the epithelial coating of the cornea only had been destroyed, and then reproduced in a few hours, and I regretted very much having lost an opportunity of ascertaining how long it took for elimination and reproduction of the pavement layer in such cases of burns. It strikes me that an alarming prognosis, which proved unjustifiable, might have been avoided by careful examination of the local conditions. The peculiar color of the opacity might be of some assistance in the diagnosis of the amount of injury to the corneal tissue. It is likely that the deeper tissues, if involved, would present a color differing with that offered by the epithelial covering; the uniform and polished aspect of burned tissues, also their uniform coloration; the absence of any blister or protrusion of any description; the fact that the destroyed tissues remain on the same level with the surrounding sound portions of cornea, so as to show a well-defined line of demarcation merely indicated by the opacity and color on the one side and entire transparency on the other; and again, in the two cases above mentioned, the absence of a burn of the conjunctiva: such are, it seems to me, the reasons that ought to dictate less severity in the prognosis.

A Case of Aneurism of the Aorta, Opening into the Trachea, and Producing Instant Death, with Pathological Specimen. By L. S. McMurtry, M.D., New Orleans.

C. C., aet. 34. laborer, of robust appearance, was admitted to ward 19, Charity Hospital, February 25, 1874. On examination patient stated, that he had always experienced good health until a few weeks past, when he began to suffer with a cough and other symptoms which he referred to the throat; also stated that the symptoms had become more urgent of late, breathing more difficult, and that he had several times suffered with violent paroxysms of coughing, in each of which he thought that he would be suffocated; these paroxysms of coughing were of more frequent occurrence lately. Patient had a very anxious expression of countenance; breathed with the mouth open, and with every act of respiration loud tracheal sounds could be heard at a distance from the patient. Voice normal; pulse good, regular at 82 per minute. Temperature normal; appetite good; urine normal. No abnormality detected by careful inspection and percussion of the chest. Line of cardiac dulness and apex beat in normal situation. On auscultation, the tracheal and bronchial sounds were so loud as to obscure every other sound. For this reason the heart sounds could not be well discerned, but the valves could be heard to close, and no abnormality could be discerned. No bruit could be heard along the course of the great vessels of the neck and thorax, the tracheal and bronchial sounds being so loud as to drown every other sound. On the day after the patient was admitted, I made a careful examination with the laryngyscope, and could detect nothing abnormal beyond slight congestion of the mucous membrane of the parts.

The diagnosis at this time was not positive, and I attributed the symptoms either to some growth in the trachea directly obstructing the tube, or to an aneurism or other tumor pressing upon the trachea and thus diminishing the calibre of the tube.

The equable condition of the circulation, the vigor of the patient (not having reached that age when degenerative changes in the arterial coats usually occur), the natural voice, and the fact that no bruit could be heard rising above the turbulent bronchial and tracheal sounds—all rather inclined me to believe that there was some growth directly obstructing the trachea. A tonic, and a simple cough mixture were prescribed. The patient remained in almost the same condition for several weeks, continually suffering with dyspnœa, and violent paroxysms of coughing with a feeling of impending suffocation. The cough was accompanied with slight mucous expectoration, and after coughing violently for several minutes he frequently would expectorate a small quantity of blood unmixed with air. This evidently came from the engorged mucous membrane. The treatment consisted of tonics, with remedies to allay the irritability of the air tract. Patient was not confined to bed, and his general condition continued good. On March 16, a talented physician and skillful diagnostician examined the case with me. He, too, rather preferred to believe that there was some growth in the trachea than that an aneurism was the cause of the trouble. No change was made in the treatment. On the morning of the 18th, patient was as well as usual, and going about the ward. In the evening he was walking about the grounds, and on returning to the ward, having ascended a flight of steps, he was seized with a violent paroxysm of coughing, and began to bleed furiously. The blood poured from the mouth and nose, of bright arterial hue, and death occurred at once. Autopsy twelve hours after death.

Blood poured from mouth and nose on placing the body on the table. Lungs typically healthy, but colored by the blood which had flooded the air cells. Stomach filled with blood; heart normal. The specimen herewith presented shows the cause of the symptoms and death. An aneurism of considerable size is situated upon the descending portion of the arch of the aorta, which has pressed upon the trachea, and by inflammation become adherent to the same, and an opening of large size may be seen where the sac communicated with the tube, thus explaining the fatal hemorrhage. It will be observed that the coats of the artery have undergone degenerative change within and in the vicinity of the sac. No degeneration in the arterial coats was discovered elsewhere. Other organs of body normal in appearance.

This case, gentlemen, has many points of interest, but illustrates particularly the fact that very extensive lesions may produce symptoms of such ambiguous nature as to render a positive diagnosis almost impossible. In this case, also, the question was considered as to whether or not it would not be proper to perform tracheotomy if the difficult breathing and violent coughing should become more urgent. In fact since the case terminated, a medical teacher of ability and experience has informed me that in a very similar case he opened the trachea, the patient died from hemorrhage, and the autopsy revealed a condition almost identical with that of the case here presented.

On the Artificial Dilatation of the Os Uteri, in Cases of Tedious Dilatation in the First Stage of Labor. By Edmond Souchon, M. D.

It has often occurred to my mind to dilate the os uteri artificially in those cases of tedious dilatation of that organ, in which the os is *not diseased* in any way, but its dilatation is slow and irregular, requiring twelve, twenty-four, thirty-six, forty-eight hours, and even more to dilate fully, keeping, during all that time, the patient in pain, depriving her of sleep and rest, and causing all about her to be anxious and unhappy.

I do not see what harm can possibly follow the gradual artificial dilatation of the os in such cases as the following one:

A woman arrived, according to the best calculations, at the term of her pregnancy, is taken, say at midnight, with short irregular pains, just strong enough to keep her from sleeping. When called in, in the morning, the accoucheur finds that the os is barely dilated to the size of a silver five cent piece. He goes to his business; comes back again towards 12 o'clock m.; is told that the same irregular sluggish pains have been going on, stopping for an hour or two and going on again. Upon examining the parts he finds that the os is of about the size of a silver dime. This condition of things goes on until night, when a new examination being made, the os has dilated to the size of a twenty-five cent silver piece. By midnight (the second night) the os is of the size of a half dollar; by morning it is as large as a Mexican dollar; by twelve o'clock m. (the second day) it is about fully dilated, and the second stage of labor sets in.

I have had just such cases as those occurring to me, as they have occurred to others, and I have read and heard of cases where the dilatation was three and four days in taking place, in primiparous as well as in multiparous women, and without any disease of the organ.

After waiting some twelve hours under such circumstances, are we not justified to act as I suggest? A great deal has been done to shorten the duration of the second stage of labor, by using ergot or the forceps, or by turning. It is time that we should think of shortening the duration of the first stage by dilating the os artificially.

I can find no authority that speaks clearly and practically on the subject. All they say applies to diseased conditions of the os, such as rigidity, degenerations, etc., in which cases we all agree.

Whoever reads Barnes' chapter on the Induction of Premature Labor, cannot fail to see that its spirit backs me throughout.

When the os is well dilated and *soft*, should the uterus contract tediously, or not at all, it should be cautiously stimulated by gentle doses of ergot. Large doses should only be reached gradually.

By dilating gradually the os with Barnes' dilators, in conjunction or not with the warm douche, the advantages are the following:

1. We spare such patients much unnecessary pain and want of sleep; much irritability and anxiety arising from such slow action on the part of nature.

2. We spare also much anxiety to the patient's family.

3. We can do justice to our other patients who are expecting us and are disappointed and annoyed if we do not come when we are expected, particularly if they should be themselves somewhat uneasy about their own condition.

Those of us who have hospital and professorial duties are enabled to attend to them, and not disappoint a class.

4. Being constantly present from the moment we begin to dilate until the end of labor, we will spare our patient the fright following a possible sudden dilatation of the os, and unexpected and rapid birth of the child; also the real dangers which may follow, such as rupture of the perineum, post-partum hemorrhage, prolapsus or inversion of the uterus.

To ourselves we spare the mortification attendant upon such occurrences and the silent or expressed discontentment of the patient and her family, whose first impulse is to hold us responsible for not having foreseen such things.

5. We spare to ourselves much fatigue and much apprehension. These come in last, of course, but they are none the less most thankfully acceptable when they can be obtained without any prejudice to the patient.

6. All these advantages are much more to be appreciated by country patients and country practitioners.

This question was presented by me before the New Orleans Medical and Surgical Association, and gave rise to much discussion, due, I think, to a want of proper preparatory thinking on the subject. When this idea presented itself to me for the first time I gave it little thought, but as such cases as I have mentioned occurred to me, they forced the question upon my mind again, and caused me to give it deeper and closer consideration.

The objections that were raised against this procedure are the following:

1. Some women have nervous contractions and pains towards the end of pregnancy, which are but false alarms, true labor only setting in a few days after.

Of course the accoucheur has to use his judgment and discretion to decide whether the pains are nervous or not.

2. Some women have pains, and the os dilates to a certain

extent, and then the pains cease, the os remaining dilated or not, and the accouchment takes place only several days afterwards.

Those cases are very rare, and should we apply to them the process I recommend, I cannot see in what, or how, the life or welfare of the mother or child would be endangered. Children born at eight and a half months fare just as well as nine month children, so do the mothers. Those familiar with statistics of premature labor, whether natural or induced, well know that with proper care and attention children even of seven and a quarter and seven and a half months do well, and so do the mothers. *A fortiori*, children of eight and a half and eight and three quarter months, and the mothers.

3. It was also objected that when such patients as I have referred to were in want of rest, a dose of opium or chloral would procure it. But that is only putting off the difficulty, without solving it; the whole thing will have to be gone through with, only a little later, that is all. When we give opium we should remember that it sometimes produces rapid dilatation and excites the womb to contract, and we should watch the patient closely, lest the accouchment should take place when we are away.

*One gentleman remarked that when Barnes' dilator was used, the head of the child when coming down pushes it down, and it is difficult to keep it in its place. But when the head of the child is coming down, and pushes the instrument away, it is because the uterus is contracting on the child, and forcing the head down on the os, and then we have no use for Barnes' dilator, since the bag of the waters or the head of the child will perform the office as well, if not better.

5. It was advanced that irritation of the os with the finger pressing all around it is sufficient to accelerate dilatation; I know it, and see no objection to doing that first, but it may fail, and at best it is painful and most disagreeable to the patient, and in case it should be repeated often, I think that Barnes' dilator is a more gentle and effective means, which ought to have the preference.

6. The same remarks are applicable to the use of the warm douche alone, and to the exclusion of Barnes' dilators. We should remember that even those who speak of it favorably as a good means for dilating the os (when it is wished to produce premature labor), admit that it should be repeated every half hour, and that it is not always effectual. (*See Tyler Smith, 3d. American edition, page* 520.) According to Rivoisch himself (the author of this process), the douche has to be used, on an average, ten times, and requires an average of three days and a half to dilate the os when it is desired to induce premature labor. In eighty cases mentioned by Stoltz, the douche alone succeeded only in sixty-eight. Besides, and that is much worse, the douche

* I trust my confreres will find my recollection of their remarks sufficiently accurate to avoid misinterpretation of their views.

has produced sudden death in the hands of such men as Prof. Simpson, of Edinburgh, Prof. Depaul, of Paris, Dr. Salmon, of Chartres, France. *(See Cazeaux, seventh French edition, Paris.* 1867, *p.* 1034; *see also Joulin, Accouchments, Paris,* 1867, *p.* 1111.) As I have already mentioned, those cases are instances in which the attempts to dilate the os with the warm douche were made with the view of inducing premature labor; but I do not think that the arguments raised against the use of the warm douche are much weakened when applied to the use of the warm douche in those cases which I have defined. Barnes' dilators present no such serious objections, and ought to be used at once, should, I grant, one or two warm douche fail to produce the desired effect.

7. Finally, I was reminded to beware of meddlesome midwifery. Of course, we should always be mindful of the old adage, but we must not let it stand constantly before us as a "scare crow." How are we ever to progress in this or any other art if we never have some little boldness and try. It is my belief that men who are familiar with the theory, philosphy and practice of an art so positive and easy of comprehension as obstetrics should not be stopped by small stones on the road, and are fully justfied, after mature consideration of the subject, to try and achieve improvements which are most desirable, more particularly so, when the penalty to be incurred in case of failure is anything but demonstrated.

At the regular quarterly meeting of the New Orleans Medical and Surgical Association, held March 2d, 1874, an election was held for President and Vice President, to serve during the ensuing three months. The election resulted in Dr. Warren Stone being elected President, and Dr. Joseph Holt, Vice President.

W. H. WATKINS, M.D., *Secretary.*

EXCERPTA.

Chloral Hydrate in Insomnia of Infants.

Dr. E. P. Hurd, of Newburyport, Mass., in his address before the N. H. Medical Society, states that he has found chloral hydrate especially useful in the insomnia of infants. One grain may be given to a restless infant every hour till sleep is induced. Gelseminum admirably fulfils many of the requirements of a hypnotic, for its action seems to be largely that of an exalter of sympathetic function, and it lessens cerebral congestion. Three drops of tincture of gelseminum, with three of laudanum and ten grains of bromide of potassium, every two hours, has succeeded in breaking up insomnolence when other remedies have failed.—*Boston Med. and Surg. Journal*, February 5.

Tetanus Neonatorum.

In the *Jahrbuch fur Kinderheilkunde*, December, 1873, is an article on the treatment of tetanus neonatorum with chloral hydrate, by Dr. And. v. Hüttenbrenner, of Vienna. Three of these cases were treated by chloral hydrate in the clinic of Professor Widerhofer, and two recovered. The medicine was administered in the following way: One or two grains, alone or mixed with a little milk sugar, were administered, dissolved in breast milk, through the nose, as the mouth was firmly closed. The administration was generally followed immediately by a paroxysm, which ceased when the action of the chloral began. When the child fell asleep, it was carefully watched, so as to repeat the dose on the approach of the next paroxysm. When the effect of a one-grain dose did not last sufficiently long, it was increased to two, sometimes to three grains, so as to obtain an action lasting several hours, as a good result is only obtained where the child is held in continuous narcosis. The child's nourishment must not be neglected, but the breast milk must be given through the nose. Where such patients suffer with colic or meteorismus, warm poultices are applied to the abdomen, and enemata are administered; internally, paullinia and tinctura krameriæ are given. Injurious effects from chloral hydrate are never observed when certain precautions are used. When there is an odor of chloroform in the breath, this is a sign of deep narcotism, and the medicine should be left off for a while, as, sometimes, chloral hydrate has an accumulative action. The three cases are reported in full, with records of the autopsy of the fatal case. The author draws the following conclusions—

1. Tetanus is not an absolutely fatal disease.

2. The same can run through its course with or without fever. Those cases running a rapid course, with high fever, are cases where the tetanic symptoms are merely those of a general poisoning of the blood, whilst those cases without fever are to be regarded as of reflex origin, due to some peripheral irritation.

3. The cases without fever have a more favorable prognosis, although, where the fever is high, the prognosis is not absolutely a fatal one, as is shown by Dr. Kirchstetter's case, reported in the *Jahrbuch*, vii. *Jahrgang*.

4. Chloral hydrate is by no means a specific, but is a remedy preferable to all others:—

(*a*) Because it is a pure hypnotic;

(*b*) Because it has no unpleasant after-effects, as morphia has, causing hyperæmia of the brain;

(*c*) Because it is easily administered, and an accumulative action is very rare.

It has the advantage over chloroform of being more easily held under control. The child is put into a quiet sleep, and the consequences of long-continued muscular contractions, particularly of the diaphragm, are made less injurious. As tetanus lasts from fourteen days to three weeks, it is only necessary to enable the child to hold out this length of time for recovery to take place.—*Boston Medical and Surgical Journal*, February 12.

Des Indications de l'Hydrate de Chloral dans l'Accouchement. Par le Dr. A. Pellisier. Paris. 1873.

The author concludes, from his experiments and from the facts he adduces, that chloral hydrate, in the first place, exerts no prejudicial effect upon the health of the mother or child, and, secondly, that it produces sleep and a diminution of the pain without interfering with the regular uterine contractions. It appears to be particularly useful for the purpose of allaying the excitement caused by the pain in nervous, irritable women, who are dreading the pangs of childbirth. Its action is not to remove all perception of the pains, but merely to deaden, in a measure, the sense of feeling. The woman remains conscious that she is having a uterine contraction, but is not distracted by the intensity of her suffering; she is consequently ready to aid it by means of the abdominal muscles. Dr. Lambert, of the Edinburgh Lying-In Hospital, goes so far as to assert that the energy of the uterus is absolutely augmented by chloral, so that the contractions become less frequent, shorter and more powerful.—*Boston Medical and Surgical Journal.*

Hypodermic Injection of Quinine in Intermittent Fever.

Dr. Frederic D. Lente has published in the *New York Medical Journal* for March, an exceedingly interesting paper upon hypodermic injection of quinine. After discussing the merits and demerits of various solutions used by himself and others, Dr. Lente says:

The following formula was adopted, and has been used ever since: ℞. Quinæ disulph. gr. l; acid. sulphuric, dilut. ♏c.; aquæ font. ℥j; acid. carbolic., liq., ♏v. Solve. Place the quinine and water in a porcelain dish, over a spirit-lamp, heat to the boiling point, and add the sulphuric acid, stirring with a wooden spatula. Filter at once into a bottle, and add the carbolic acid. This gives full six grains to the drachm. Even this solution will deposit some crystals at a temperature of 50°; and, of course, at or below that temperature requires to be warmed before using. The carbolic acid also, I think, alleviates the pain of the injection, as there is but little complaint, in most cases, after the first few drops. I can recommend this with considerable confidence, so far as danger of local difficulty is concerned, since it has been used by myself and my various assistants at least one hundred and fifty times, or over three hundred insertions (each hypodemic *dose* consisting of at least two injections). Neither have I, nor any of the gentlemen who used it under my direction, had any serious trouble with it.* In one case, after using it twice, it produced each time a diffuse cellular inflammation of the arm, which yielded slowly to cold water applications, and I desisted, although the patient was anxious to submit to another trial, so far superior did she find this method to that by the mouth. In another exceptional case, a singular effect was produced, already noticed in this paper—anæsthesia of the part, followed by dry gangrene of a small mass of cellular tissue. This was the fourth injection of this patient, or the eighth insertion; none of the others giving any trouble whatever. Patients frequently experience a numbness of the part, sometimes lasting weeks after the operation, possibly from the effect of the carbolic acid. The injected part is usually tender for a few days after injection, when accidentally touched; sometimes inconveniently so, when the patient is at manual labor (on this account it is better to select the left arm), but it rarely incapacitates a laborer, even for half a day. Since this solution has been used, I have met with full as many cases of trouble arising from injections of *morphine*, though so much smaller in bulk, as from it. All hypodermic injections. however small, will occasionally cause inflammation, abscess, and even sloughing, sometimes of a persistent character.

The question of the proper strength and composition of the solution is a vital one, as regards the ultimate success of this valuable mode of treatment, and, as it cannot be considered at all settled, I have already dilated considerably on this point, and would remark further that the inconvenience, slight though it is in a majority of cases, of introducing the needle two and occasionally three times at a sitting, and inserting sixty to ninety minims of fluid more or less irritating, is sufficient to induce the hope that a solution equally safe will be devised, which shall contain two or three times as much of the drug. It is true that by the aid of heat, *applied at the time of the injection*, double the quantity in the same amount of fluid may be used; and this brings up the question of *concentration* of the solution, which most writers have considered essential. Two ideas seem prominently to occupy the minds of those who have employed this method,

* Dr. Murdock has used this method to a moderate extent, and his experience is incorporated with mine. I have, at different times, been assisted by Dr. A. A. Smith, of New York, and by Drs. Farmington, Griffith, and Young, of the resident staff of Bellevue Hospital, who are, I understand, using this solution now in that hospital.

both of which are probably erroneous and mischievous: one, that the solution cannot be too concentrated, provided little or no acid be used; the other, that the acid is the principal or only cause of the serious accidents sometimes attending the injections. Now, it will be found that, in cases of local trouble, more than one cause is in operation, sometimes several. Thus the delay in the absorption of the fluid, one portion of areolar tissue only a few inches from another absorbing more readily; this delay being also sometimes attributable to the *imperfect solution of the salt*, and the latter the result usually of using *too little acid.*

As it respects the *mode* and *best time* for operating, the following are the author's conclusions:

Having settled upon a proper solution as far as present experience enables us, there are some precautions advisable. It is important to have a *gold* needle, not one merely gilded. Messrs. Tieman & Co. prepare them very skillfully, and, with care, they seldom require sharpening, which may easily be done on a fine hone. The syringe and needle should be washed out after each operation, and the piston frequently oiled, as it is both stiffened and rotted by the solution. The outer and anterior portion of the *arm*, not too near the joints, are usually chosen for the insertions, although the outer and upper portion of the thigh present desirable localities. We have, however, injected all parts of the body, in cases where repeated injections were required. I usually make the two punctures two and a half to three inches apart, so that the wet application, which is often desirable to prevent inflammation, may cover both. The injection should be made with deliberation. The first few drops cause more or less severe smarting, and I wait until this ceases, or nearly ceases, perhaps half a minute or a minute; then continue *slowly*, drop by drop, as fast as the patient can endure it, without inconvenient pain, being guided also somewhat by the rapidity with which absorption takes place, judging by the greater or less elevation of the integument around the puncture. As soon as the needle is withdrawn, I cause the patient or a by-stander to put the finger over the puncture for two or three minutes, to prevent the fluid from exuding. In case of threatened inflammation, or much soreness, I direct the patient to bind on a wet folded handkerchief or pledget of lint as a precautionary measure.

As regards the best *time* for the operation, the general impression seems to be that it should be done just previous to the expected paroxysm, and Dr. Moore, of Bombay, says: "The best time is shortly before the cold fit; but it may be done during the cold stage with the effect of lessening and sometimes stopping the whole paroxysm." I can corroborate the last observation, and shall subjoin some cases in illustration of this important point.* I am not fully prepared, as yet, to say whether there may *not* be an advantage *as regards the ultimate effect of the operation*, in following the prevalent notion. But, it so often happens that the severe train of symptoms attending a paroxysm of *epidemic* ague is mitigated, even arrested by the injection on the spot, that, when convenient, I always give the patient the chance. But, as a general rule, I have injected without any reference to the date of the paroxysm. This point will bear further investigation. I am informed, however, by Dr. Meredith Clymer, that, in a recent report of the English army-surgeons serving in malarious regions, the verdict is decidedly in favor of administering quinine (this does not refer to the hypodermic method) *during* the attack.

As regards the *dose*, it depends, like that administered by mouth or rectum, on so many circumstances that one cannot be definite. But the *variation*, depending on *idiosyncracy* and age especially, is not nearly so great as in the other methods. The doses of various reporters have varied from two to ten grains. The fact is that, at present, it is limited somewhat in obstinate cases by the insolubility of the drug, a dose of twelve or eighteen grains requiring of the solution here recommended two or three drachms, too large an amount of fluid except in desperate cases, where severe pain and abscesses are comparatively of little moment. My first doses were two or three grains, and the most marked results were obtained from these small doses, probably because the medicine was more largely diluted, the same quantity of fluid being always used; possibly also because the disease assumed a more obstinate type as the epidemic wore on. For the latter reason it was found necessary to increase the dose to *six grains*, and in a few cases to nine or ten grains. When more than six grains were employed, I usually made three injections, but sometimes used a syringe of greater capacity, and only inserted twice. When the patient has a good deal of adipose tissue, and is not particularly intolerant of the injections, forty minims may be used in one spot.

Repetition of Doses.—During a severe epidemic, it will usually be necessary to repeat the dose every fourteen or twenty days; in some cases every six days; and now and then every day or two. In these cases the patients are so tolerant of the injections that they care very little for them. Where the resulting soreness or inflammation is troublesome or tedious, it is better to resort, if possible, to some other treatment. During the intervals it will not usually be necessary to give any anti-periodic or tonic. In my own cases, desiring to test the value of the treatment as accurately as possible, I rarely gave any medicine, even of a cathartic nature, unless required by constipation.

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* I have long been in the habit of injecting *morphine* gr. ⅙ in the paroxysm of intermittent fevers, preferably in the cold stage, to the infinite relief of the patient, and the arrest of the paroxysm to a considerable extent. When the suffering is particularly severe, it is better to combine the morphine and quinine. I described this method in a letter to the late Prof. Elliot, published in the NEW YORK MEDICAL JOURNAL in 1870.

On the Mode of Action of Iodine and its Preparations. By Professor Sée.

Iodine may be made to enter the system through different channels, viz., the digestive tube, the skin, the mucous membrane of the respiratory organs, and the serous cavities.

The digestive tube is the most certain and natural channel, and it is this which is nearly always taken advantage of. The tincture of iodine is scarcely ever prescribed internally—in fact, it possesses no advantages, but offers, on the contrary, certain inconveniences. If it remain in the stomach in the form of tincture, it produces a caustic effect on the mucous membrane of the digestive organ; but it always combines with a little soda or potash which it meets with in the stomach, and is converted into an iodated alkali. Hence it may be seen that those who administer iodine in its simple form are laboring under an erroneous impression if they imagine that the drug undergoes no change in the stomach.

The iodide of potassium should not be administered in the form of pills, as it is thus liable to produce a caustic effect on the mucous lining of the stomach; it should always be given in solution. And in prescribing this salt one should always bear in mind that the greater the quantity of liquid in which it is dissolved, the better the absorption. There is, however, a certain limit to the quantity of fluid to be employed, which of course a physician will not exceed, and which it is scarcely necessary even to mention.

The skin has often been selected as the channel for iodine to enter the economy. In employing an ointment composed of iodine in the proportion of one part to ten parts, in certain cases an effect is produced, in others nothing is obtained; that is to say, in certain cases iodine has entered the organism, in others it has remained on the skin. it is expedient to know under what circumstances the iodine has been absorbed. Divers explanations have been given to account for the above facts. According to professor Sée, two conditions contribute to the absorption of iodine: 1. To make iodine enter by the skin, the epidermis, which acts as a barrier, must be destroyed. To effect this, strong and repeated frictions of iodine ointment will have to be employed; but it is evident these cannot be continued, and a single friction would be perfectly useless. 2 In examining these facts, it is found that there are cases in which the epidermis has not been in the least affected by the frictions, and in which, nevertheless, the absorption of iodine might be proved. This would appear to be in contradiction to what has just been stated above, but it might be explained by the extreme volatility of this metalloid. When iodine is rubbed into the skin in the form of ointment, it is found in the mucous membrane of the lungs; whereas when an ointment is made of an iodide, the latter is not found in the lungs, because it is not volatile, and does not contain free iodine. Thus it may be seen, it is by the air-passages, and not by the skin, that the iodine enters the system; and in proof that this is the case, it is sufficient to leave a phial of iodine uncorked near oneself, and the latter will be absorbed without touching or putting it to the nose, for it is found in the secretions.

Quacks seem to have been aware of this phenomenon when they invented the sachets of the powder of iodine, iodized cotton, and iodized flannel vests which are to be worn next the skin. These divers agents possess a real therapeutic property; but the explanation of their action is the same as that given above—that is, the iodine they contain is absorbed by the air-passages, and not by the skin. If a piece of iodized cotton be placed on the arm, and covered with a watch-glass or a glass bell, nothing will be observed, but in a person who wears an iodized vest constantly, the iodine enters his economy, not by his skin, but by his nostrils.

Painting with the tincture of iodine has much the same action; we know to what extent this is now employed, and there is scarcely a pain, a case of scrofula or phthisis, in which it is not resorted to. In phthisical patients, the tincture of iodine externally has taken the place of blisters and cauteries; and the change is certainly to the advantage of the iodine, but its action is not that of blisters or cauteries. Here, also, the same explanation may be given of its action; but there is one effect which is scarcely suspected, and that is, when the tincture of iodine is sufficiently strong, or the painting too frequently renewed, the epidermis is destroyed. The iodine enters the fissures thus formed, and produces inflammation of the cellular tissue, as has been observed at post mortem examinations. To produce a more direct action on the tubercles of phthisical patients, it would certainly be preferrable to place an open phial of the tincture of iodine on a table near the patient, as has been practiced by Mr. Piorry, in order that the iodine may be inhaled.

Iodine baths are also intended to act on the skin. These baths, which used to be much lauded, are now seldom or never employed, as their efficacy is very much questioned. It has been asserted that after an iodine bath this metalloid has been found in the urine. In this case, how did the iodine enter the body? Not by the skin, but by the air-passages; and even then such a result cannot be obtained unless the bath-room be hermetically closed, and the patient remain in the bath some time.

Fomentations are also intended as a means of effecting the absorption of certain medicaments into the tissues. These substances are varied, according to the effect desired—such as the tincture of iodine, laudanum, belladonna, etc. As with frictions, a real effect is sometimes obtained with fomentations, at other times none. This depends on the state of the skin, which is different in different individuals. If the skin be soft and pervious, iodine and the other substances may be absorbed; but it is difficult to know when the skin is in a favorable condition for absorption and when it is not. There exists normally on the skin an oily coating, which opposes the penetration of the iodide of potassium. A soap bath may remove this varnish, but it is immediately reproduced; and individuals who have greasy skin, whatever they may do, will never succeed in making their skin absorb the iodide.

The same may be said of baths composed of the mono-sulphuret of sodium. Little or nothing is absorbed unless the doors and windows are closed, for the sulphuretted hydrogen which is evolved is about the only active agent, as it is taken up by the respiratory apparatus. This would explain the superiority of the sulphurous waters—such as Luchon, Barèges, which whiten on being drawn—over those that do not whiten, as Amélie-les-Bains. Iodized baths owe their efficacy to the iodine being absorbed by the respiratory organs.

There are some natural iodated waters—but they are rare—in France; there are only those of Salins and Salies, in Béarn, and it must be admitted that they are not very rich in iodine. In Switzerland they have the waters of Saxony; in Prussia, those of Kreutznach. These latter cannot be replaced; they are those that contain the most iodide and bromide of potassium combined. Nevertheless, the French might still avoid going to Prussia by utilizing hot sea-water baths. The sea-water, and particularly the sea-air, contain a certain proportion of iodine and bromine. But it must not be forgotten that this atmosphere does not extend very far, and that about 400 or 500 yards from the shore we get the breeze, but not the iodized air; to have the benefit of this, one must remain the whole day on the beach, or, what is still better, take up his residence on the sea coast.

When iodine enters the economy it is easily detected, and is almost immediately found in the urine and in the saliva; but the whole is not found at once. The elimination of iodine takes place more rapidly when it is administered in the form of iodide; but in whatever manner it is given, when the iodide enters the blood it combines with the potassium contained in the corpuscles; and as the salts of potash are very diffusible, it is not surprising to find iodine in the urine almost immediately it enters the blood. Iodine remains in the economy longer than one would be led to suppose, judging from its facile elimination, and it is found in the saliva after its presence has ceased to be detected in the urine. The elimination of iodine is intermittent, and it has been frequently seen that an individual who had been eliminating iodine that he had been taking, ceases to eliminate for some time and then begins again to eliminate.

The same is the case with arsenic and mercury, particularly the latter. If you mercurialize a dog by friction, the animal may eliminate mercury during two months, two months and a half, even three months with complete intermission. This tardy elimination may be explained by the fact that the drug does not remain in the blood, but in the organs.

We have seen how iodine enters the blood, and without stopping to inquire whether it is there in a state of free iodine, or of an iodated alkali, or of albuminate of iodine, we shall successively study its action on the blood, on the circulation, on innervation, on nutrition, and on the organs of elimination, which will be treated of in the next lecture.—*Medical Times and Gazette.*

The Treatment of Post Partum Hæmorrhage.

The recent discussion in the Obstetrical Society of London, in regard to the best treatment of *post partum* hemorrhage has been conducted with considerable acrimony and personality: it has nevertheless proved beneficial to the profession in bringing out the practice and opinions of some of the most experienced practitioners of Great Britain. It is not within the compass of our space to give our readers the views of both parties to the controversy; we append, however, a few practical notes called forth by the discussion.

I.

The following case may be found interesting at the present time, when an ounce of fact should be worth a ton of theory. On Friday, December 26th 1873, Mrs. J., who had more than once nearly died from the effects of flooding, was taken in labor with her tenth child. When I arrived, I found that the pains were lingering, and there was great inertia of the womb. I administered brandy, ergot, and extract of beef, at intervals, the os being soft and dilatable; after five hours matters improved, and a fine female child was born alive, and after a couple more pains the placenta was expelled intact. I supported the uterus with my hand for at least half an hour, and after this a pad was placed on the fundus, and the bandage, already *in situ,* tightly fastened. Internal hemorrhage commenced shortly afterwards, with frequent fainting. I at once unfastened the binder, and, by grasping and kneading the uterus squeezed out a large clot and obtained something like a contraction. Ergot and brandy were again given; but, as the womb kept melting away under my hand, I applied ice, which I had in readiness, over the pubes and inside the vagina. As my patient was faint and pulseless and considerable oozing continued, and every drop of blood seemed of vital importance, and the ergot and ice did not satisfactorily stop the bleeding by good firm contraction, I determined to inject solution of perchloride of iron, which at once had the desired effect, and I was able to leave my patient in about an hour with perfect safety. She has recovered without a bad symptom, and says she never felt so strong so soon after confinement. Ergot and brandy had been given from 7.30 a. m., and were renewed in increased doses at 2 p. m., when hemorrhage commenced; and yet, with ice, pressure, etc, dangerous flooding continued till iron was injected. There was no clot or rent to cause the bleeding, but simply inertia; and I doubt not that, but for the continuous support afforded by the hand, which prevented the womb from dilating, and the prompt injection of iron after failure of the other remedies, this lady would have lost her life. PERCY BOULTON, M.D.

II.

Believing, as I do, in the immense boon conferred on the profession and the public by Dr. Barnes, by his introduction of the use of perchloride of iron in *post partum* hæmorrhage, I trust that no one will be deterred from its use by the angry tirades of Dr. Snow Beck. This drug appears to act on Dr. Snow Beck much as the color scarlet is supposed to act on the bovine tribe; it lashes him into fury. Without stopping to inquire how a thing can be "risky," and its result "inevitable" at one and the same time, I would remark that, if Dr. Snow Beck means to say that "inevitable" death is the consequence of the use of perchloride of iron, he is stating that which is contrary to the fact. I have injected perchloride of iron many times as a *dernier resort* in cases of *post partum* hæmorrhage, and always with the happiest results: none of the patients for whom I have used it have complained of any pain or even discomfort, either during or after its use; and they have invariably made a good recovery. I may, perhaps, relate the last case of the kind which occurred to me. I attended Mrs. J., about a fortnight since, with her second child. I applied, as is my custom, a binder before the birth of the child, to be tightened afterwards without disturbing the patient. The uterus was well supported by my hand during the expulsion of the child, and for some time afterwards. A dose of ergot was given during the last stage of labor. Finding that the uterus remained firmly contracted, I tightened the binder and went into the adjoining room. On returning to my patient in about a quarter of an hour, I found her blanched and flooding, and with the pulse at the wrist almost imperceptible. I at once compressed the uterus, which was relaxed, removed all clots with my hand, and washed out the uterus with cold water. This produced some effect, but still some bleeding continued; and, as my patient could not afford this, I substituted for the basin of cold water one containing one part of liquor ferri perchloridi and three parts of water. Not one drop of blood was lost after this, and my patient made a speedy and good recovery. I consider the fear of absorption of the perchloride into the system to be groundless. It has long been in use as a valuable styptic in hæmorrhages of all kinds and in all situations. I have myself frequently used it under conditions peculiarly favorable to absorption; but I have never experienced, nor have I heard of, any but the most beneficial effects from its use.

EDWARD CRIPPS, Cirencester.

III.

There is one method not mentioned by Dr. Braxton Hicks in his admirable paper on *post partum* hæmorrhage, which, although it may be implied and included in his frequent instructions in reference to cleaning out the uterus with the hand, deserves, I venture to think, rather more prominence than has been yet accorded to it. I allude to the persistent retention of the hand *in utero* until it becomes recognized by the recovering womb as a foreign body, and is expelled by the contractions which are the salvation of the case. I have one case in my mind, to which I was called in passing, and in which I had no ergot, syringe, ice or styptic, to aid me, and where, by the prolonged internal application of what really was a manual plug, I was able to induce complete contraction, although the patient was much exhausted by the loss of blood, and the womb was unusually flaccid. I derived the greatest assistance in this case, I may add, from the child, who sucked away at the breasts most manfully. Were I to meet with an urgent case of the kind again, and if the child would not suck the breasts, I would certainly try to persuade the nurse to do so. Why should it not be a maxim, in cases of "old flooders," that the child should attack the breasts at once, instead of lying uselessly in blankets—a sovereign remedy, untried and unthought upon?"

G. H. R. DABBS, M.D., Newport, I. W.

IV.

Perhaps a few points, gained by the experience of a country practice of forty years, and not noticed in the admirable papers lately published in the JOURNAL, may be acceptable. 1. During labor, "bag" the distended uterus with a shawl, tightening it as the uterus is slowly emptied. 2. Immediately, in all cases, upon delivery, turn the patient carefully—do not let her turn herself—on her back. 3. Retain the hand on the uterus for one hour. 4. Immediately upon the expulsion of the placenta, give from forty to sixty drops of laudanum, with the like quantity of sal volatile. The shawl, properly adjusted, helps the uterus to contract uniformly. The placing the patient on the back, as is seen at a glance, gives a power and control over the uterus, in contact with the spine, that cannot be obtained whilst she remains on her side. The retaining the hand for one hour may be tedious, but it should be done unless there be any means of judging if there be freedom from danger of hemorrhage. A Dublin physician, many years ago, suggested the state of the pulse as a true criterion. I believe he was correct. If the pulse be equal, with ups and downs, all is right; if the contrary, there is no safety. The administration of laudanum was frequent in olden times. I am sure there is no better contractor of the emptied uterus. The cases that have troubled me most have been those where opium could not be borne. I remember once a lady very exhausted. In my haste, I emptied my bottle containing nearly two drachms of laudanum; in ten minutes she said, "You may go, sir; I am quite well." Am I singular in this treatment? I see no reference to it by any of the writers in the JOURNAL. I have used cold affusion outside the uterus, but have never injected inside. I have introduced my hand into the uterus after expulsion of the placenta. I would do so if necessary, and would also carefully inject tincture of perchloride of iron. I have never in my own practice lost a patient by *post partum* hemorrhage.

M. FOSTER, Huntingdon.

V.

So much has been written, and well written, on the above subject, that it may be supposed nothing more can be said. A few observations, however, I must ask permission to make. In the first place, I cannot help deprecating the very unnecessary personal remarks that have been made during the correspondence. The reason I desire to make a few comments is chiefly that, although my name has been alluded to, my method of applying the perchloride of iron in obstinate cases of *post partum* hemorrhage has not been mentioned by any of the writers, although Dr. Barnes, when he brought his plan before the Obstetrical Society, in his reply, said "that the method of applying the perchloride of iron advocated by Dr. Wynn Williams might be the more advantageous in some cases." My plan is this, which I have already designated the ready method. We must suppose that all the usual means have been employed without stopping the hemorrhage and causing contraction of the uterus, not only for the moment but permanently; such cases have happened, and will happen again, in spite of everything said to the contrary. The hemorrhage still goes on, and the uterus does not contract. Is the patient to be left to die? I saw one death from *post partum* hemorrhage thirty years ago, fortunately not in my own practice. I never saw another, and I hope I never shall. I attribute this to my having had recourse to the ready method, namely, the introduction of a sponge saturated with either the tincture or solution of the perchloride of iron; the latter I now prefer. Having by the hand in the uterus relieved it of all clots, I pass up a sponge over which I have poured half an ounce of the solution of iron. This is easily done through the hollow of the left hand. I then sponge the whole of the distended uterus carefully with it, beginning at the fundus, which immediately becomes corrugated, and contracts forcibly, forcing down the hand and the sponge. I have also found that the neck and lower part of the uterus has firmly grasped my wrist, showing that the passage of the sponge saturated with the iron has caused those parts also to contract. Indeed, in the first instance in which I used it, I had so much difficulty, owing to this contraction, in withdrawing my hand with the sponge in it, that I always since have had a string attached to the sponge and have left it to follow or not, as I consider the retention of it for a short time rather beneficial than otherwise. Now, does this mode of applying the perchloride of iron lessen any risk there may be in its use? I believe it does, and for this reason. It is generally admitted that the injection of a liquid in any quantity into a puerperal dilated uterus for any purpose, is fraught with no small amount of danger to the patient, and has been followed by death; for, if even only cold water does by any means come into contact with the periosteum of a puerperal female, it will almost to a certainty cause rapid and fatal periotonitis. I feel convinced in my own mind that most, if not all, of the fatal cases that have followed, or been caused by, the injection of the solution of perchloride of iron would have equally occurred if any other liquid had been employed. In conclusion, I hold that it is not the perchloride of iron that is the delinquent, but the liquid it is mixed with. Those who doubt the corrugating powers of the perchloride of iron on the mucous membrane of the uterus, I would only beg, in the next case of subinvolution of the uterus they meet with, to roll some cotton wool on the end of a sound, dip it in solution of iron, and pass it into the uterus; and its powers will soon be demonstrated to them. A. WYNN WILLIAMS, M.D.

Treatment of Sore Nipples.

Dr. Ephraim Cutter, of Woburn, Mass., suggests the following treatment for sore nipples:

The problem is to have the nipple, during the intervals of suckling, protected from the pressure of the clothes and freely open to the circulation of *dry* air. Dryness is a normal condition of the skin, as moisture is of the mucous membrane. To accomplish this, disks of cork, about 2½ inches in diameter and 1½ in thickness were selected. A central opening was made, and then enlarged by filing with a common rat-tailed file until the opening on one side was within half an inch of the edge, and the opening on the opposite side was about one inch in diameter. With sand-paper the surfaces are smoothed and rounded. A common two-gallon milk-can cork suffices. Thus you obtain a conical excavation within the cork which will cover the nipple, keep off the clothes, and allow ventilation. The lightness of the cork, its being a non-conductor of heat, and its facility of manipulation, entitle it to a first place for this purpose. At first sight it might appear that the cork would absorb the secretions, so as to become offensive. I have not found it so. It is easily cleansed by pouring on boiling water.

With this device remedies may be employed. I have found an ointment of a grain of sulph. morphia to a drachm of lard an excellent application after suckling, to be removed if not absorbed before suckling.—*Medical Record.*

Diphtheria.

Dr. J. Lewis Smith, at a recent meeting of the New York Pathological Society, after presenting a pathological specimen from a case of diphtheria, gave the following synopsis of his treatment:

This patient was treated with quinine, iron, and alcoholic stimulants internally. The quinine was administered in moderate doses; but in severe diphtheria and scarlet fever large or frequent doses of this agent are tolerated, and are sometimes apparently useful. When I entered on duty in the Asylum in the same epidemic, one of my colleagues was treating a patient of three and a half years, having severe scarlet fever and diphtheria, with two grains of quinine administered hourly, and though forty-eight grains had been given in twenty-four hours, the pulse was 156 per minute, and the temperature 103¾°, showing that there was not such reduction of pulse and temperature as ordinarily attends the employment of large doses of this agent. The patient recovered, the quantity of quinine administered daily being, however, reduced to twelve grains.

The local treatment in the case which I have related consisted in the application to the fauces, every three hours, of the following, which has given me better satisfaction than any other medicine for local treatment which I have employed—

℞.	Acidi carbolici - - - -	gtt. v.
	Liq. ferri subsulphat. - -	ʒij.
	Glycerinæ - - - - - - - -	℥i.
	M.	

The brush was employed in preference to the probang, as it is less painful, and where there is a pseudo-membrane does not produce hemorrhage by its detachment.

The small room in which the child was treated was also filled, as far as possible, with steam. As steam or water softens the epidermis, so I believe it softens and aids in the removal of the pseudo-membrane, which is mainly epithelial, more effectually than any other local measure. In each of the shallow pans from which the steam was generated, a small lump of quicklime was placed, so that the steam was charged with particles of lime, which were quite perceptible in the breath. If much lime be added, the water becomes too thick or syrupy, so as to diminish the evaporation, and therefore render the quantity of steam insufficient. The spray of lime-water, whatever may be its solvent effect, certainly renders the respiration in a close and hot room more tolerable, perhaps from its rapid absorption of carbonic acid.

Croton Chloral Hydrate.

The recent experiments of Dr. Yeo, of King's College Hospital, London, have directed the attention of medical men once more to croton chloral as a therapeutic agent of extraordinary power. Professor Liebreich, who had already won the lasting gratitude of the profession by his study of the medicinal virtues of chloral hydrate, some two years ago pointed out some remarkable peculiarities in the physiological action of this compound, then newly discovered, and gave to it the name which it now bears. Croton chloral is one of the products of the reäction of chlorine upon aldehyde. It was discovered accidentally by Drs. G. Kramer and A. Pinner, whose experiments were made with a view to utilize an impure spirit containing aldehyde, in the manufacture of chloral. When dry chlorine is passed over pure aldehyde ($C_2 H_4 O$), a violent reaction takes place, resulting in the formation of hydrochloric acid, chloral ($C_2 H Cl_3 O$), croton chloral ($C_4 H_3 Cl_3 O$), together with a variety of other products. By treating the residue with sulphuric acid and subjecting it to fractional distillation, the croton chloral is obtained as a dense oily liquid, boiling at about 328° F. It resembles in its physical properties common chloral, and, like that compound, unites with water, though with some difficulty, to form a crystalizable hydrate. The hydrate forms beautiful silvery white crystals, having a sweetish, melon-like flavor, readily distinguished from chloral hydrate by their very slight solubility in cold water. It is soluble in hot distilled water, and still more so if the water contain 25 per cent. of glycerine. A permanent solution may be made with the latter menstruum, containing thirty-two grains of the hydrate in the fluid ounce, and will greatly facilitate the dispensing of the drug.

The conclusions arrived at by Dr. Yeo (*Lancet*, January 31st, 1874), are that in croton chloral we possess a remedy of remarkable efficacy in some cases of neuralgia of the branches of the nervus trigeminus, and that it also has the power of affording relief in other obstinate forms of neuralgia; that it is of use in certain cases of diffused muscular pain; that there is scarcely any remedy that is likely to prove more valuable for the relief of the distressing night cough of chronic phthisis; its efficacy in procuring sleep seems very variable in moderate doses; its effects in purely rheumatic cases are scarcely appreciable, while for hysteria it is of little or no use. In regard to the dose Dr. Yeo says: "The effects produced on different individuals vary so greatly that an unusually wide range must be given to the dose. In strong males a dose of ten grains may be required to produce an appreciable effect, while two grains may suffice for susceptible females." He, therefore, recommends that the remedy be given in moderate and frequently repeated doses, until the amount of tolerance of the medicine in each case is discovered. In severe neuralgias from two to five grains may be given every hour, until fifteen grains have been taken. A larger quantity than this the doctor does not consider safe with our present imperfect knowledge of the power of the remedy.—*Detroit Reveiw of Medicine and Pharmacy.*

Chloral Hydrate and Camphor: Croton-Chloral.

I.

Last year (*London Medical Record*, May 7, 1873), attention was drawn to the fact that the intimate mixture of equal parts of chloral hydrate and camphor will produce a clear fluid, which is of the greatest value as a local application in neuralgia. I have now employed this preparation for several months, and have induced many professional friends to use it also. Having in every case found great, and often instantaneous relief follow its application, I think the members of the Association may be glad to have the opportunity of adding to the very uncertain stock of antineuralgic remedies which we have already at our disposal. Its success does not appear to be at all dependent on the nerve affected, it being equally efficacious in neuralgia of the sciatic as of the trigeminus. I have found it of the greatest service in neuralgia of the larynx, and in relieving spasmodic cough of a nervous or hysterical character. It is only necessary to paint the mixture lightly over the painful part, and to allow it to dry. It never blisters, though it may occasion a tingling sensation of the skin. My friend Mr. George Wallis allows me to say that he has found it of great service as a remedy which patients can apply themselves for the relief of toothache; and to its success in this respect I can also personally testify. In the original article, the compound was recommended for arresting the progress of incipient boils and carbuncles. I have no experience of its value for this purpose.

The question of an "An American Inquirer" in the JOURNAL of last week, as to the dose of croton chloral, is one on which there is very considerable and general doubt, since the practitioners have frequently confused the dose prescribed by Dr. Oscar Liebreich for sleeplessness with that which should be given simply for the relief of neuralgic pain; and even for these two purposes the amount advised by different physicians varies considerably. Dr. Liebreich thinks that sixty grains may be safely administered as a single dose; while Dr. Burney Yeo (*Lancet*, January 31, 1874) does not consider it safe in any case to go beyond fifteen grains, and advises that this amount be administered in doses of two to five grains every hour or half-hour until the desired effect be produced or the maximum be reached.

Considering croton-chloral as a hypnotic, I do not find that it has any advantage whatever over chloral hydrate, while it is from ten to fifteen times as expensive. I have occasionally found the effect of chloral hydrate increased by addition of croton-chloral, in the proportion of five grains of the latter to fifteen of the former. This combination is especially serviceable in cases of spasmodic asthma occurring during sleep. The sleep produced by the combined drugs is much deeper than that produced by ordinary chloral; but on awaking, there is frequently considerable stupor and headache. I have observed these same symptoms after administration of smaller doses of this combination, when taken for the relief of spasmodic cough, while the simple chloral hydrate has produced no such effect in the same patients, whether taken in the smaller or larger dose. One of the greatest disadvantages of croton-chloral is the uncertainty with which it acts, since it is decidedly most serviceable in cases of neuralgia and spasmodic cough—cases in which speedy relief is of the greatest importance. Thus, while hourly doses of one grain will produce the best results in one case, in another frequent doses of five grains will produce no effect; while again, as in Dr. Falconer's case (JOURNAL, Feb. 28), disagreeable head-symptoms may be experienced after a single dose of two grains. I yesterday saw the prescription of an eminent physician ordering five grains every hour until pain was relieved, eight doses being prescribed. This appears a full dose; but certainly most practitioners will do wise to hesitate before giving the very large quantity in one dose, as advised by Dr. Liebreich. Croton-chloral is very slightly soluble in water, and glycerine does not largely increase its solubility. Probably the best way to prescribe it is in the form of pills. It mixes exceedingly well with a glycerine of tragacanth; and, when silvered or varnished, the pills are quite tasteless.

LENNOX BROWNE, F. R. C. S. E., Welbeck Street.

II.

A boy aged 15, the son of a waterman, had suffered for two or three months from intense facial neuralgia, rendering him at times almost frantic. Four teeth had been extracted without relief. Ordinary remedies, including large doses of quinine, having signally failed, one grain of croton chloral hydrate was given three times a day. After two days, the pain was greatly mitigated, and in three days more it had entirely left him. The remedy left anæsthesia of the left side of the face and tongue, so that he was quite insensible to touch and the presence of food on that side of the mouth. The vision was unaffected. The anæthesia passed off in a few days, and he had no return of the neuralgia.

In another equally severe case, the remedy utterly failed. This was a young woman who had been deserted by her husband, and whose mind, of course, was much depressed. As I have said, the croton chloral signally failed.

Query: What was the differential condition of nerve-tension in these two cases?

C. M. DURRANT, M.D., Ipswich.

III.

Having seen several inquiries in the BRITISH MEDICAL JOURNAL respecting the dose of croton-chloral hydrate in different diseases, I beg to state that I have employed it lately in three cases of severe neuralgic dysmenorrhœa with remarkable benefit, the dose being five grains twice during the day. All pain ceased in each case after two or three doses.

LOUIS LEWIS, M. R. C. S., Albert Street, Regent's Park.

IV.

I have prescribed half-drachm doses of the croton-chloral every night for above three weeks in a case of insomnia. During the whole of that period, only about three good nights of calm sleep were obtained. The effects produced were very unsatisfactory. In another case I gave half a drachm to procure sleep in neuralgia. The pain was removed, but sleep was not procured. This is the whole of my experience in the use of the above medicine; but I certainly have not found it, so far, of very much value in cases of sleeplessness.

H. A. ALLBUTT, L. R. C. P., Sheepscar, Leeds.

British Medical Journal.

Besnier on the Combination of Opium with Chloral-Hydrate in the Treatment of Threatened Abortion.

I.

In the *Bulletin de Thérapeutique*, vol. lxxxiv., p. 284, is summarized a case by M. Martineau in which uterine contractions occurring in a pregnant woman (seven months), treated unsuccessfully by opium, were immediately arrested by administration of chloral in the dose of one gramme night and morning. M. Besnier (*Union Médicale, Gazette des Hôpitaux*, No. 122), relates in connection with this case, that of a primipara pregnant six months, and urgently threatened with abortion. Opium in high doses and under all forms not having produced any good effect, M. Besnier had recourse to chloral hydrate in enema (2 grammes). The effect was rapid and very satisfactory, and each time the pains reappeared they were set at rest by the repetition of the enema; but, as they did not finally disappear, M. Besnier, by advice of M. Tarnier, returned to the opiate treatment, which had to be continued for two days, it had no bad effect whatever, and the patient was saved from her threatened death. Investigating the mode of action of the chloral in these circumstances, M. Besmer concludes (with MM. Bourdon and Martineau), that chloral exercises different effects on the uterus, according as it is administered during accouchement or after a threatening of abortion. In the first case it augments, and in the second it diminishes, and, even suppresses the contractions. According to Besnier, the myosthenic or amyosthenic effects produced must severally be referred to the different conditions of the uterus at the time of administration of the chloral hydrate. In accouchement there is to be considered the excitation of the cervix uteri by the head of the infant, which keeps up its contractions; these are even augmented as the consequence of the rest given to the womb by the cessation of pain, due to the administration of chloral. In threatened abortion, excitation of the cervix is absent: pain plays the chief part. Thus chloral suppresses the principal cause of the contractions. The whole importance of the drug lies in the analgesia which it produces. The action of the opium must also be taken into account in the case above cited. M. Besnier concludes that chloral is an excellent auxiliary to opium, when the latter proves inefficacious.

The Pathology and Treatment of Typhoid Fever.

Prof. Lindwurm, in a essay on typhoid in the hospital on the left bank of the Tsar, observes that it is generally believed that those who have been once affected by typhoid fever enjoy an immunity from subsequent attacks. He has, however, not unfrequently observed cases where the patients have been affected some years or even decades previously. Of course there can be no doubt that in such cases a new infection and a new introduction of typhoid into the system has taken place. Cases are also met with in which in the course of typhoid fever, after a longer or shorter remission of the symptoms, an exacerbation, or, more properly speaking, a relapse, takes place, with reappearance of symptoms that have already passed away (enlargement of the spleen, diarrhœa, roseola). In two cases sudden death occurred; and on examination, besides completely cicatrized typhoid ulcers, some perfectly fresh infiltration of the mesenteric glands and Peyer's patches was observed. As regards the etiology of typhoid, Prof. Lindwurm points out the great difference between typhoid and the acute exanthema in reference to infection *in* the hospital. Amongst 135 young persons lying in the same rooms with others suffering from typhoid fever, only one appeared to have become affected, and that was a doubtful case. The germs of typhoid are imbedded in the soil, and are more or less exposed or concealed with the rise and fall of the water level, but they may accumulate in the cracks of boards, interstices of stone floors, &c. From these localities they rise in the air and are inhaled or swallowed. That the dejections are carriers of the germs there can be no doubt, but whether the typhoid poison is reproduced and multiplies in the human economy is not satisfactorily made out. The rules for treatment are, to lower the fever, to give tone to the nervous system, and to strengthen the failing powers of the heart. To effect the first, the methodical application of cold baths is most important, whilst the other indications are met by the administration of quinine dissolved in hydrochloric acid, moderate doses ot which should be given every two hours. A little white wine may be given to remove the taste. When the heart's action is very feeble, quinine should not be given in very large doses. As an excitant, Prof. Lindwurm recommends the subcutaneous injection of the officinal oleum camphoratum; from 15 to 30 grains of camphor can thus be introduced in the course of the day.—*Der Praktische Arzt*, No. 9, 1873.

Treatment of Snakebite and Hydrophobia.

The newspapers report that cases of hydrophobia are frequent in some parts of Texas. Our readers will find among the excerpta the subjoined extract upon this subject. While the existence of spasm is a prominent event in this disease, yet its mode of producing death differs so widely from that of affections usually classed as spasmodic, that we must remember that a cure of the malady involves something more than the simple relief from spasm. In our present state of knowledge, the employment of measures for the relief of the abnormal excitability always manifested, is the leading indication ot cure. But when we recal the fact that no well-authenticated instance of recovery has been reported under this mode of treatment, it is very plain that our energies must be directed towards the discovery of some other as yet untried therapeutics. Whether it results from the general confession on the part of the medical profession that there is no known remedy for canine madness when once developed, or whether it results from an innate disposition on the part of man to appeal to the supernatural for aid, whenever surrounded by phenomena of whose nature he is ignorant, and over which he possesses no control, it is still true that many utterly worthless and superstitious remedies are resorted to for the prevention of hydrophobia. About the beginning of the present century, one John Crons sold a secret remedy to the State of New York too preposterous for serious consideration.* Near the same date, some citizens of Virginia made up a company of stockholders and paid a certain Micon $2000 for a mad-stone. About this period, there also flourished at Hagerstown, in Maryland, a man by the name of Ketchum, who was in possession of a mad-stone, and who could boast, no doubt with truth, that General Washington had sent one of his negroes to him for treatment. It may be safely affirmed that mad-stones are totally inefficient, since the only manner in which they can act beneficially, is by the very problematical outgoing currents which their porosity and property of imbibition may be supposed to establish in the vicinity of the wound. Their reputation, in common with that of some other modes of prevention, is due to the fact that in only a percentage of cases of bite does rabies occur. As long ago as in 1798 John Hunter writes: "I know where there were twenty-one people bitten by one dog. Nothing was done for any of them, and only one was taken ill; if they had taken medicine, then it would have been said that they had only lost one out of twenty-one." The experience of Youatt fully confirms that of Hunter.

Undoubtedly the "proper treatment of hydrophobia is prevention." Besides the measures suggested in the extract, the application of carbolic, nitric, muriatic, or sulphuric acid, has been advocated. It may also be found that the practice pursued by Dr. Watkins, of this city, in a case reported in the March number of this JOURNAL is an efficient one. That is, to surround the bite with a zone of hypodermic injections of tinct. iodine, *ten* mimims to each puncture, instead of two minims, as was erroneously printed in the JOURNAL.

Dr. Donald Buller, Honorary Inspector-General of Hospitals, Bengal, states that he has had extended experience of snake-bites. The sufferers, chiefly spahis, were generally brought to him at night from five to twenty minutes after the accident happened. In one or two cases the only symptoms were a very weak circulation, coldness of the surface; nausea and giddiness; but in most of them these symptoms were accompanied by insen-

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* Take one ounce of the jaw bone of a dog, burned and pulverized; the false tongue of a newly foaled colt, dried and pulverized; one scruple of verdigris. A teaspoonful a day.

sibility and difficulty of swallowing, and occasionally by violent spasms of the back and complete syncope. Dr. Buller's first care was always to apply two turns of a stout cord round the limb, immediately above the wound, so as to arrest the circulation through the superficial veins. A drachm of laudanum (100 drops) and an ounce of brandy (two table-spoonfuls) were then administered in two or three ounces of water, warm when procurable, with a little sugar and essence of peppermint, and this dose was repeated according to the urgency of the symptoms, till the returning circulation and heat of the surface indicated a favorable change, which was, he thinks, in all cases accelerated by making the patient walk about supported by two men. In severe cases the patient was, in addition, exposed to a large fire, and his throat, chest and extremities, were rubbed with laudanum, ammonia, and sulphuric ether. When the symptoms subsided the ligature was removed, and an ounce or two of Epsom salts administered. The proper treatment for *hydrophobia*, he contends, is *prevention*, and should consist in washing the wound immediately with hot water, then blackening it with Indian ink, and washing this out again completely; then to apply lunar caustic over the whole ot the wound, *to keep the wound open* for two months by the application of lunar caustic as often as the wound begins to heal, and to keep the system slightly under the action of mercury for that period.—*Pamphlet*, 1873.

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*The Depressants of the Circulation and their Use.**

Our experience in the use of Aconitum Napellus, however little, is yet sufficient to convince us that American Physicians have been too slow in introducing it in common practice. This conviction has induced as to republish some very interesting remarks of J. M. Fothergill, M.D., on the subject of "The Depressants of the Circulation and their Use."

The most important matter, however, connected with our subject was the introduction of a vegetable depressant agent into the treatment of pyretic conditions. In 1844, Dr. Fleming published his Inaugural Thesis for graduation at the University of Edinburgh, entitled "An Inquiry into the Medicinal Qualities of the Aconitum Napellus," and struck the key note of a new treatment. Certainly aconite had been studied before, so early indeed as by Störck, in 1763; but Fleming made the subject his own. His conclusions were, that aconite is a powerful antiphlogistic, and that it is calculated to be of great service in all cases where there is inordinate activity of the circulation. The data on

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* Read before the Medical Society of London.

which these conclusions are founded were, the lowering of the pulse, its alteration of character, the effect upon the fever along with the action upon the cutaneous vessels, produced by the administration of aconite. The reduction in the frequency of the pulse was marked, amounting even to thirty-six or forty beats per minute; a reduction which must exercise a marked influence upon the circulation and the chemical interchanges. The cutaneous exhalation was increased with much itching, and not unfrequently an eruption of vesicles indicated its powerful action upon the skin. Thus we see that aconite acts in a manner very similar indeed to antimony. The immediate dangers in the use of both are much the same, but the after effects of aconite are less objectionable. The use of aconite as an antipyretic agent has maintained its position, and indeed is gaining ground. Its empirical use has been the sheet-anchor of homœopathic practice in pyrexiæ; and though we cannot credit that body of irregular practitioners with a very scientific administration of such an agent, we cannot withhold from them their just claim to have demonstrated on a large scale the practical value of aconite in the treatment of pyretic conditions, especially in inflammatory and simple febrile affections.

In 1872, Ringer, in his well known work on *Therapeutics*, writes in a manner which vindicates the expectations of Fleming. He says, "Aconite is to be most esteemed for its power, little less than marvellous, of controlling inflammation and subduing the accompanying fever. It will sometimes at once cut short an inflammation. It will not remove the products of inflammation, but by controlling the inflammation it prevents their formation, so saving the tissues from further injury. When given in the earliest stages of the commoner and milder pyrexiæ, the skin dry, hot, and burning, becomes in a few hours comfortably moist, and in a little time longer is bathed in a profuse perspiration, often to such an extent that drops of sweat run down the face and chest. With the sweating comes speedy relief from many of the distressing sensations, as restlessness, chilliness, heat, and dryness of the skin, aching pains and stiffness; and at the same time the quickness of the pulse becomes much reduced in frequency, and in a period varying from twenty-four to forty-eight hours, both pulse and temperature reach their natural state."

Finally, Ringer sums up: "It has been shown that aconite lessens the rapidity of the circulation. It may, therefore, be used in all cases where it is needful to subdue vascular excitement; in fact it may be given in precisely those cases which were formerly treated by bleeding."

Thus we see that after thirty years, and those years, too, during a most sceptical era, a time almost of eclipse as regards faith in therapeutics, the predictions of Fleming have been endorsed, and the line of treatment inaugurated by him developed into a scheme which includes many of our new remedial agents, and shadows out the practice of the future.

The depression of the heart, and with it the lowering of the circulation and the chemical changes, on the one hand, and the dilatation of the peripheral vascular area on the other, including the consequences of cutaneous exhalation, are the two grand factors in the modern treatment of pyretic conditions, co-equal with the direct use of cold. Not only so, but they afford efficient aid in the relief and treatment of several other conditions shortly to be alluded to. Indeed, it is not merely the effect produced on an inflamed area by the depressant action of the agent used, though that is a great matter; but the questions of the effect of high temperature, and the induction of sleep, are involved in this inquiry as to the action and use of the depressants of the circulation.

As to the inflamed area itself, it may be said that to dilate the blood-vessels generally will affect the vessels of the inflamed area, and so aggravate the mischief. But as a matter of fact, the vessels of this area are already paralysed, and so removed from any effect exercised by the agent administered. The impression produced on the circulation generally reduces the blood-pressure and the supply to the inflamed area, and so moderates the inflammatory action. Then as to the effect of a high temperature upon the system, the action upon the nerve-centres, the tissues, and the excretory actions, the accumulation of waste products in the blood and the production of the typhoid condition or uræmia, often constitute the great danger of a pyretic condition.*

And now, as to the production of sleep. The relation of cerebral anæmia to sleep has attracted much attention of late, since the publication of Mr. Arthur Durham's well known paper; and though cerebral anæmia may not be all that is requisite to sleep, it is a most important factor in its production; without it, indeed, sleep is impossible. Thus hydrate of chloral is a good hypnotic, because it dilates the blood-vessels. A good dinner near a warm fire after long exercise against the wind, especially in cold weather, is an irresistible hypnotic, because the vessels of the skin and the muscles, as well as the visceral vessels, are now all dilated, and sleep cannot be resisted. The blood is so drawn away from the brain that cerebral activity is no longer possible. The relation of the depressants of the circulation to sleep is very important.† Thus we find opium, especially in combination with antimony, a good hypnotic, as also hyoscyamus, conium, the secondary effects of alcohol, chloral, etc., probably as much by their effect on the vascular system as by any narcotic action. So in a cold, with a dry skin, chloral loses much of its hypnotic power, even with those in whom, under other circumstances, it produces sleep with certainty.

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* For further information on this important matter, readers may consult an article by the writer in the *Edinburgh Medical Journal* for September, 1873, on "The Typhoid Condition."

† The delirium of opium-poisoning is converted by sleep into a dream; but in belladonna-poisoning the raised blood tension will not permit of sleep, and the delirium is waking, though no memory of it remains after.—*John Harley.*

Very important matters, indeed, are involved in the question of the action of the depressants of the circulation, and form a sufficient apology for my bringing the matter before this venerable Society; and I trust that none of us will be worse practitioners for knowing a little of the means by which these agents, in all probability, exercise their apyretic action, or for having a theory of how they act. There is room for hope, indeed, that a more general recognition of the mode of their action will lead to a more extensive use of them, and that the constituents of fever mixtures will be selected by the light of physiology as well as by the practised grouping of empiricism, without detriment to their efficiency.

But, while we can see the additions to our armamentarium in the treatment of conditions where inflammation, a high temperature, and insomnia are leading factors; conditions, as we have seen above, often found together, and alleviated by the same remedial agent—conditions which frequently demand the attention of the profession; we may cast a glance at the effects of the depressants of the circulation over other than the before mentioned states.

Thus aconite can be used in the relief of non-febrile conditions. A friend of mine is subject to fits of congestive headache with great cotemporary coldness of the hands and feet. Various lines of treatment were tried without effect, when a non-professional person advised him to try aconite Ere doing so, he asked me about it, and I advised him to try it, as it might do him good. He did so with entire success. The peripheral blood-vessels being dilated, the blood was enabled to return to its wonted channels, and the headache was relieved by the removal of the cerebral hyperæmia. The improvement is permanent. In many cases ot local hyperæmia, aconite has been found very useful.

A word, however, *en passant*, as to the dilatability of the blood-vessels. Ludwig Schift (*La Nazione*, August 9th, 1872), and others, have been led to the conclusion that the vascular system is normally in a state of semi-contraction, and that, in full dilatation, it can hold twice the normal amount; or, in other words, that it took the whole of the bulk of blood of an identical animal to raise the blood-pressure again to the height at which it had stood ere full dilatation was induced.

Goltz found that the intestinal veins would hold all the blood of the animal experimented upon.

This dilatability of the blood-vessels permits, then, of most effective bleeding after the manner of Rasori; indeed, an amount of blood may be so withdrawn from the circulation far beyond what could be safely done by withdrawal of it from the system altogether. And the list of agents by which this can be done comprises mercury, antimony, iodide of potassium, hydrate of chloral, nitrite of amyl, Calabar bean, aconite, veratrium, and, to a less extent, opium, acetate of ammonia, alcohol, guiac, ipecacuhanha, and a host of others.

Mercury is a direct cardiac depressant; and George Harley (*Proceedings of the Royal Society*, 1864) found that the injection of corrosive sublimate into the femoral vein of a dog produced paralysis of the heart beyond the power of a feeble galvanic current to excite it long before the vermicular action of the intestine had ceased. Such action should not be forgotten in its administration. As to its action on thé skin and other emunctories, we are all familiar with it, and utilise it at times. But its use in consecutive doses for such a purpose is now only found in antiquated practice alongside the moxa and the strengthening plaster.

Antimony, especially in the form of tartar emetic, has long been used for its depressant action. Twenty grains of tartar emetic was considered a capital measure to lower the violence of a maniac in past times; and it, indeed, formed an effective measure. Unfortunately, however. acute gastritis and pustular inflammation of the intestines often followed such doses, ending fatally; which led to its abandonment. Such action of tartar emetic is still utilised by the cotton-spinners' wives in Lancashire, in order to control the violence of their drunken spouses on Saturday nights. It is purchased at the druggists under the name of "quietness," and administered in the cup of tea offered to the riotous inebriate. (Bucknill and Tuke's *Psychological Medicine.*)

Iodide of potassium is a depressant of the circulation acting powerfully upon some persons (Ringer), and by its action, especially upon the cutaneous vessels, is admirably adapted to the treatment of the early stages of catarrhal fever, or thoracic inflammation. Combined with ipecacuanha and acetate of ammonia, it is most serviceable in the early stage of bronchitis, when the bronchial membrane is turgid and swollen with congested vessels, and the secretion almost totally arrested. Here the turgescence must be relieved, and secretion established as the first st p in the treatment. This combination is very useful where mercury or antimony are contraindicated.

Alcohol is often useful for its effects upon pyretic conditions, and is often given to lower the temperature, which it probably does by its effect upon the skin. While acting upon the heart by increasing its contractions, there is such a current established through the skin, the blood being rapidly driven through the dilated vessels, that the temperature is lowered (Binz). Alcohol and opium both act readily upon the vessels of the head, and so are at first excitants; but, as the other peripheral vessels become dilated, the brain becomes anæmic and sleep ensues. When coma comes on, then there is congestion (Hammond).

Having briefly disposed of our old therapeutic friends, let us look a little more carefully into the action of our new acquaintance on the list of depressants of the circulation. We may take chloral hydrate first.

Hydrate of chloral is a depresser of the temperature, as well as a hypnotic; and, though possibly possessing, like opium, an action on the nerve-centres—some unknown narcotic action—still t; effect upon the vascular system probably accounts for much of its action. There is some evidence that chloral depresses the heart, but it acts upon the cutaneous vessels very markedly. Liebreich, B. W. Richardson, Tay, Hammond, and others, found that it is not at all uncommon for the temperature to fall three or four degrees, or even more after a full dose (40.80 grains of chloral-hydrate).

Hammond found the retina to become pale and exsanguine at the oncome of sleep, its natural colour coming back as sleep wore off. My friend Dr. Lander Brunton has made some very interesting experiments as to the action of chloral. He finds that, after large doses, the temperature falls till it can no longer be measured by ordinary clinical thermometers. Having found out what dose would kill an animal when exposed to the air, he gave this quantity to two similar animals, wrapping one up in cotton-wool. The one so wrapped up survived, while the other died. Then he found out the dose which was lethal after wrapping up in wool, and gave that to two similar animals, wrapping one up in wool and putting the other in a warm chamber. The one in wool died; the other recovered. A larger dose still was fatal to the one in the warm chamber. These experiments throw much light upon the action of chloral hydrate. After this, we can no longer feel surprise at the concomitance of sleep and a free perspiration with its fall of temperature in the crisis of malarial fever. They are alike the result of dilatation of the cutaneous vessels; and are not uncommonly the combined result of the administration of a single agent.*

Dr. Theodore Williams has also found hydrate of cholrál useful in spasmodic asthma.—*British Medical Journal*, Oct. 25th, 1873.

Lime-Sugar Glycerine.

Latour had occasion to try this new lime liniment on a number of patients, wounded by an explosion at Mont Valérien, and with especially good results. Eutasis's saccharate of lime is almost equally soluble in water and glycerine, in the latter in the proportion of about 36 per cent.; but the aqueous solution is coagulated by heat, which does not take place with the glycerine solution. Instead of using the dry saccharate of lime, Latour makes a nearly saturated solution of the saccharate in the following manner:

Calc. oxid. hydrat............	gram.	200
P. sacchar....................	"	400
Aquæ..........................	"	2,000
Glycerini.....................	"	400

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* The effect of a feverish cold and a dry skin over the action of chloral has been noticed before.

The lime and sugar are well mixed in a mortar, and water slowly added till a clear homogeneous paste is obtained. The mixture is placed in a well-corked flask, and allowed to stand for twenty four hours. It is then filtered, the glycerine added, and evaporated to one litre. The glycerine does not coagulate by boiling unless it has been diluted with four volumes of water. Placed on the skin the mixture forms a sort of varnish, and causes a pleasant sensation of coolness on the inflamed surfaces.

The new lime liniment is prepared by mixing one part of the above mentioned dilute solution before evaporation, with two parts of olive oil. A mixture which is not so thick is obtained by using almond oil in place of olive oil. Where there is considerable suppuration, camphor oil may be added to diminish the fetid smell.

Dr. Lagarde has found the liniment useful for burns, and Dr. Müller, for erysipelas of the face. Latour maintains that it may be advantageously used in other cases, where the skin is the seat of more or less severe inflammatory symptoms, as in erythema, frost-bite, variola, and various eruptions.—*Report de Pharmacie and Hospitals, Tidende*, Jan. 14th, 1874.

Chilblains and Coryza.

The following is a very convenient, economical, and efficacious application for chilblains and chaps: Alcohol at 85°, 100 parts; glycerine, 25 parts; and phenic acid, 1 part. Powdered camphor sprinkled with tincture of iodine, and inhaled by the nostrils, constitutes one of the most prompt and certain of remedies in coryza or "cold in the head."—*Révue Médico-Photographique*, February.

Pathognomonic Sign of Pertussis.

The practitioner may be sometimes consulted on a case of hooping-cough without having the opportunity of witnessing a paroxysm. In such a case M. Bouchut recommends him to examine the frænum linguæ, which he will always find the seat of a small ulcer in children the subjects of pertussis, or who are on the point of becoming so.—*Révue Médico-Photographique*, February.

Abdominal Section for Intussusception.

A successful case of abdominal section for intussusception was reported by Mr. Hutchinson at a late meeting of the Royal Medical and Chirurgical Society. He appended to the report the following observations:

1. That it is by no means very uncommon for intussusception to begin at the illio-cæcal valve, and to progress to such a length that the invaginated part is within reach from the anal orifice, or even extruded.

2. That it is of great importance in all cases of suspected intussusception to examine carefully by the anus.

3. That in almost all cases of intussusception in children, and probably in most of those in adults, the diagnosis may be made certain by handling the invaginated part through the abdominal wall.

4. That the prognosis of cases of intussusception varies much; first, in ratio with the age of the patient, and, secondly, with the tightness of the constriction.

5. That in a large proportion of the cases in which children under one year are the patients, death must be expected within from one to four or six days from the commencement.

6. That in the fatal cases death is usually caused by shock, or by collapse from irritation, and not by peritonitis.

7. That in many cases it is easy by estimating the severity of the symptoms (vomiting, constipation, &c.), to form an opinion as to whether the intestine is strangulated or simply irreducible.

8. That in cases of strangulated intussusception, whilst there is great risk of speedy death, there is, also, some hope that gangrene may be produced, and spontaneous cure result.

9. That in cases in which the intussuscepted part is incarcerated and not strangulated, there is very little hope of the occurrence of gangrene, and it is probable that the patient will, after some weeks or months, die, worn out by irritation and pain.

10. That the chances of successful treatment, whether by the use of bougies, or by the injection of air or water, are exceedingly small, except in quite recent cases, and that if the surgeon does not succeed by them promptly, it is not likely that he will succeed at all.

11. That the cases best suited for operation are those which have persisted for some considerable time, and in which the intestine is only incarcerated; and that these cases are also precisely those least likely to be relieved by any other method.

12. That in the cases just referred to, after failure by injections, bougies, &c., an operation is to be strongly recommended.

13. That the records of *post mortems* justify the belief that, in a considerable number of the cases referred to, the surgeon will encounter no material difficulty after opening the abdomen.

14. That the circumstances which might cause difficulty are—(1) the tightness of the impaction of the parts; (2) the existence of adhesions; and (3) the presence of gangrene.

15. That, in selecting cases suitable for operation, the surgeon should be guided by the severity of the symptoms to an estimate of the tightness of the strangulation, and as to the probability of gangrene already set in.

16. That, in cases in which the patient's symptoms are very

severe, or the stage greatly advanced, it may be wiser to decline the operation, and trust in the use of opiates.

17. That the operation is best performed by an incision in the median line below the umbilicus.

18. That, in cases of intussusception in young infants (under one year of age), the prognosis is very desperate, scarcely any recovering, except the few in whom injection treatment is immediately successful, whilst a large majority die very quickly.

19. That the fact just mentioned may be held to justify, in the case of young infants, very early resort to the operation.

20. That it is very desirable that all who, in the future, have the opportunity for *post mortem* examination of intussusception cases, should give special attention to the question as to whether an operation would have been practicable, and should record their results.—*The Doctor.*

Incontinence of Urine.

Dr. Thomas Kennard, of New York, uses the following ointment in the treatment of this disease:—Sulphate of atropia, ten grains; veratria, ten grains; hog's-lard, twelve drachms. By rubbing the perineum three times daily with the ointment. in three cases of paralysis accompanied by incontinence of urine, Dr. Kennard obtained a complete recovery at the end of a few days.—*The Clinic.*

Deep Injection of Chlorform in Tic Doloreaux

Dr. J. B. Mattison, of Chester, N. J., reports to the Meigs and Mason Academy of Medicine, Feb. 19th, a case of tic doloreaux in which various agents has been used with very trifling benefit. The man had in former years been trubled with a trigeminal neuralgia, and afterwards with sciatica, which had continued for many years, during which time he had acquired the habit of using morphia hypodermically and in large quantities. This however afforded no relief from the facial pain.

December 22, 1873. One-third drachm of chloroform was injected near the infraorbital foramen by passing the needle beneath the upper lip, and carrying the point to near the emergence of the nerve, where the chloroform was discharged. A severe paroxysm followed, but much lighter and far less frequent. After the 27th, no recurrence of the paroxysm took place. During this time he was placed on good general tonics, and also received three times a day hypodermically 1-48th gr. strich. sulp. and 1-60th gr. atropia sulp., which was continued for some time. No morphia being used after the 22d inst. In three weeks all desire for the latter agent had been dissipated. Six weeks later the man had entirely recovered his health and returned to "his vocation."

(The deep injection of chloroform seems likely to result in great benefit in this class of cases. Prof. Bartholow, who I believe was the originator of this method of treatment, relates three cases, in all of which it afforded relief, and that two, after prolonged trial with other agents accounted valuable, had failed. It occurs to my mind that a similar application of this method would prove highly beneficial in sciatica, by injecting the chloroform deeply, and as near as possible to the origin of the nerve affected.—Ed.)—*Southern Medical Record*, Mar. 1874

Bromide of Potassium in Gonorrhœa.

Dr. John W. Bligh, in the *Practitioner*, gives the following directions: As soon as a patient complains of gonorrhœa, the bromide of potassium should be immediately commenced, and continued throughout the duration of the disease. As it is said to increase the acidity of the urine, a condition not at all desirable, some alkaline bi-carbonate should be combined with it, to counteract this tendency. The following formula has been found useful:

℞. Potassæ bicarbonatis......gr. lx,
Potassii bromidi..........gr. xc-cxx,
Tincturæ hyoscyami.......fl ʒss,
Aquæ camphoræ..........fl ℥vss.
Mis. fiat misturu.

One-sixth part of this mixture is to be taken three times a day, and once during the night, should the patient happen to be awake.

Care should be taken not to administer a dose whilst a meal is in process of digestion in the stomach, as it may, by neutralizing the gastric juice, interfere with the conversion of food into chyme.

If the disease is in the first stage, an injection of the salt is ordered and recommended to be used as frequently as opportunities allow. The following is the usual form and strength in which I employ it:

℞. Potassii bromidi........ ... gr. cxx,
Glycerinæ...................fl. ʒss,
Aquæ destillatæ.............fl. ℥vss.
Mis. fiat injectio.

One syringeful is to be used every four hours.

When the discharge has assumed the form of gleet, a similar injection, associated or not, as may be thought advisable, with some astringent, will be found useful. In addition, I am accustomed to administer, during this latter stage, from fifteen to twenty grain doses, three times a day, combined with fifteen minims of the tincture of the perchloride of iron, and dissolved in some suitable menstruum.

There are certain accessories which should not be neglected in this any more than in any other plan of treatment. The bowels should be carefully regulated, the proper diet prescribed, and a total abstinence from beer and other stimulants insisted on. Rest should be enjoined, and over-exertion strictly avoided. The testicles should be supported by a suspensory bandage, and the genitals bathed from time to time, especially before retiring to rest. The flow of urine may be increased by the free use of diluents, as linseed tea, barley water, etc.—*Medical and Surgical Reporter.*

Sulphate of Quinine in Uterine Hemorrhage.

Dr. Bonqué in the *Presse Médicale*, of Belgium, as quoted in the *Medical Press and Circular*, says:—

For two years past I have frequently employed the sulphate of quinine both in cases of uterine hemorrhage and in hæmoptysis, as also in the early stages of retinitis. In both of these cases, if the theory of Dr. Monteverdi were true, I ought to see, under the influence of excitation by the sulphate of quinine, those muscular fibres which lie in the walls of the vessels contract and diminish the afflux of blood. In cases of hemorrhage, the loss of blood ought to lessen and cease; in cases of retinitis, the vessels should contract, the hyperœmia and the serous transudation diminish.

I have conscientiously studied the facts which have passed before my eyes in great numbers, as well in my own practice as in the ophthalmological clinique, and I believe that I can say that they have fully justified the assertions of the Italian physician. I have published some of these facts; and might have published more, but thought it useless to fatigue the reader's attention by almost identical observation.

With regard to uterine hemorrhage, the action of sulphate of quinine rises in my eyes to the height of an axiom. In a crowd of cases, I have in a few hours arrested losses which even presented a disquieting character. And I wish it to be noticed that I employed no other remedy which might have aided the action of the quinine. In most cases I permitted the women to go on with their usual avocations.

It is known that at the menopause menstruation often takes on a hemorrhagic character. Some ladies among my patients are at this age, and have recourse to my advice, either when the flow becomes too abundant, or when it lasts too long. In all such cases I prescribed 1.25 grammes of sulphate of quinine, in fifteen pills, to be taken at hourly intervals.

I have carefully interrogated all these persons, for I mistrust the therapeutic illusions both of patients and physicians. But they are unanimous in declaring that the flow of blood diminishes in intensity after taking a few pills; this diminution becoming more and more marked until the hemorrhage completely ceases, The action of the sulphate of quinine is thus felt at once. I have always seen it to be powerful and decisive.—*Medical and Surgical Reporter.*

Iodid Acid in Tumors.

Dr. Luton, of Rheim's School of Medicine, has drawn attention to the remarkable success he has had in the dispersion of glandular and other tumors by the use of iodid acid applied hypodermically. Goîtres have been so treated. The solution he uses is one part of the acid to four of water. A sharp local reaction but no material inconvenience follows.—*Medical and Surgical Reporter.*

Nocturnal Incontinence of Urine.

M. Surmay advises the use of the catheter in such cases, as leading to positive good results and to cure. M. Tauvelle advises, in children more especially, the following pill at night: Ext. belladonna, camphor and castor, proportioned to the age of the patient.—*Medical and Surgical Reporter.*

Treatment of Cerebro-Spinal Meningitis.

Dr. Dowse, of the Central London Sick Asylum, after giving a good account of the etiology, symptoms, and post mortem appearances of this disease as it affects the base of the brain, observes that there is no disease requiring more constant watching or careful medical interference than this. He has seen an acute meningitis and myelitis treated with those drugs which produce congestion; for instance, opium and strychnine. Nothing can be productive of more harm than this administration in the first or acute stage.

1. It has to be considered how to relieve the vessels of the cord and to equalize the action of the vaso-motor system of nerves. Nothing appears to be of greater service in effecting this than the ergot of rye and belladonna. The former he has prescribed in decided doses, such as half a drachm of the powder every four hours, and the latter he has applied to the spine in the form of a belladonna paste, made by mixing the extract with one-third its weight of glycerine.

2. To check the reflex vomiting, small pieces of ice must be swallowed, not sucked, as the full effect of its sedative influence upon the stomach is then attained.

To relieve constipation, Dr. Dowse prefers the administration of a pill of the watery extract of aloes, for the reason that it acts upon the mucous membrane of the rectum, and dilates the hæmorrhoidal veins.

4. To relieve sleeplessness, both chloral and bromide of potassium have proved ineffectual; but what he found of most service was a suppository of eight grains of the extract of henbane, with four of the extract of conitum.

5. One essentially practical point must not be forgotten, namely, to keep the paralyzed bladder constantly free from urine. It is not sufficient to draw off the water night and morning, which is the course usually adopted, but a self-retaining catheter must be kept continually in the viscera.

6. In reference to diet, it ought to be both nutritive and stimulant from the first.

7. There is a stage in the treatment of this disease when quinine in large doses becomes of the most signal value—at that crisis when exhaustion appears imminent; the skin covered with sweat; sudamina and bullæ over the body; temperature 102° to 105°; pulse small, weak, and over 120. But more especially is quinine invaluable when rigors supervene; it never fails to have a good effect. But it must be given in ten or even twenty grain doses; and if the stomach cannot tolerate it, it must be introduced into the system by the rectum.

8. The detraction of blood, either local or general, is not advisable.—*Medical Times and Gazette*, Feb. 7, 1874.

Acute Articular Rheumatism Treated by Acids.

Acute articular rheumatism is a puzzle to both the pathologist and therapeutist. After having determined, in so far as the majority of our profession are concerned, that the morbific agent was an excess of an acid, and using alkalies in its treatment—after all the laborious statistics gathered to show the lessened mortality of the disease under alkaline treatment, here appears Dr. Wilks in support of a treatment precisely opposite to that which has for several years been generally pursued. For six years the writer has been in the habit of teaching and practicing a treatment which may be considered a departure from recent ideas in regard to the therapeutics of acute rheumatism. The remedy chiefly relied upon has been opium in very positive doses. During the winter of 1866 and 1867, an English sailor came under observation suffering from an attack remarkable for its violence, and its intense pain and fever. In the course of four days' treatment seventy grains of solid opium were exhibited. The cure was rapid and complete. No other drugs were administered except three ten-grain doses of sulphate quinine during the first twenty-four hours of treatment. Lemonade was allowed at will during the progress of the case. Since that date the writer's reliance has been principally upon these measures of treatment, especially if the cardiac structures are involved, and the addition of new observations only serves to strengthen his convictions that this mode of treatment merits the highest confidence.

In recently making some comments at Guy's Hospital on the treatment of acute rheumatism, Dr. Wilks expressed a considerable distrust of the ordinary methods. He remarked that we do not yet possess an accurate knowledge of the essential cause of the disease, nor of the mode of its operation. We are, in fact, ignorant of the natural history of the disease. Medical practitioners are too apt to be credulous in matters of therapeusis, and are not sufficiently careful always to differentiate between effects and coincidences. Usually, for instance, the diagnosis of acute articular rheumatism is regarded as a sure and certain indication for the exhibition of alkaline remedies, and these remedies are persisted in in every condition or modification of the disease, without the slightest evidence of a beneficial influence resulting therefrom. Nay, it frequently happens that the more severe the disease the stronger does the belief in the particular remedy become, and medical men not uncommonly allege in support of the efficacy of the treatment that the complications were of the most serious nature. If the patient recover after having had severe heart disease or symptoms referable to an affection of the nervous system, it is regarded as proof positive of the value of the remedy. Whereas we can not only not be certain that recovery did take place as a result of the treatment, but that it did not occur in spite of the vaunted remedies. On the other hand, some have asserted that there is no known cure for acute rheumatism, and that mint-water will answer every purpose. This is Dr. Wilks' opinion, and it was merely to strengthen this view that he gave mineral acids in the subjoined case, never supposing that they would do good or harm. Dr. Wilks maintains that, until we know everything concerning the disease, and especially the relation between the joint affection and the internal complication, we have no scientific basis for the selection of remedies. It is even doubtful whether the subsidence of the arthritic inflammation during the course of the disease is desirable, for in all fatal forms of rheumatism this is usually seen to occur. It may be remarked, however, that sometimes, in cases of internal complication, it does seem as if large doses of potash or of quinia have some influence in arresting the disease. In several cases treated by quinia Dr. Wilks has noticed the urine to become alkaline on recovery, as if this were the natural process of cure; as it seen also in typhoid fever. The same thing occurred in the present case.

G. W——, a well-nourished man, aged thirty-five, was admitted on January 14. A week before this he began to suffer pain in the hip-joint; subsequently both knees, and the right shoulder, wrist, and hand were affected. The pain in the joints was preceded by a feeling of coldness, but there was no actual rigor.

On admission the left knee was swollen from the presence of fluid within the joint. The right hand also was swollen and painful. A systolic bruit could be distinctly heard over the base of the heart, and extending a short way along the aorta. A venous hum was audible at the root of the neck. Perspiration was acid; temperature 101°; pulse 96; repiration 24. Tongue moist and covered with a white fur. The urine was acid, and contained a large quantity of lithates.

Ordered fifteen drops of dilute nitrohydrochloric acid every four hours, and a diet to consist of milk, bread, and beef-tea.

January 16. Temperature 101.8°.

19*th*. Joints previously affected are better, but the right hand and both knees are still painful. Systolid basic bruit still very loud.

20*th*. Temperature 102.8°. Perspires freely.

23*d*. Hands and knees almost well. Temperature 101.2°.

28*th*. None of the joints are swollen, but some feel stiff and sore. Bruit hardly audible. Urine alkaline.

February 2. Bruit almost entirely gone. The patient is convalescent.—*Lancet*, Feb. 14, 1874.

NOTICES OF NEW BOOKS.

A Practical Treatise on the Diseases of Children. By J. Forsyth Meigs, M.D., etc., etc., and William Pepper, M.D., etc., etc. Fifth edition, revised and enlarged. Philadelphia: Lindsay & Blakiston; 1874.

The publication of a book on the diseases of children is always a matter of interest to practitioners of medicine. The diseases incident to children furnish such a large proportion of cases they are called to treat, and such difficulties attend their diagnosis and treatment, that the earnest physician desires to avail himself of every new and valuable aid to this portion of his duties. We are glad to be able to congratulate our readers upon the practical advancement of this branch of medicine by the publication of Drs. Meigs and Pepper's treatise. The volume opens with an introductory essay on the clinical examination of children, which contains a good many suggestions likely to be of advantage to the young practitioner.

We cannot give the space required by an extended review, and will therefore limit our critical examination to those chapters which treat of some one or two of the most grave of children's diseases. Starting first with Pneumonia, we find that the first paragraphs of the chapter upon this subject are devoted to the discussion of the difference between "lobular" and "lobar" pneumonia. The opinion of the authors may be obtained from the following extracts.

The researches of MM. Legendre and Bailly have caused a great revolution in the views of a large number of medical observers and writers. These authors first pointed out (as stated in the article on atelectasis) that the very large proportion of the cases previously described under the title of lobular pneumonia, generalized lobular pneumonia, pseudo-lobar pneumonia, marginal pneumonia, and the carnification of MM. Rilliet and Barthez, were in fact cases of bronchitis variously associated with congestion and collapse of the tissue of the lung. They themselves described these supposed different forms of pneumonia under the title of *catarrhal pneumonia.* But, though they were opposed to the opinion of lobular pneumonia being a true inflammation of the lung, they did not assert that children were not subject, like adults, to regular inflammation of the pulmonary parenchyma. They described, in fact, as nearly all others have done, a *lobar* pneumonia, which exhibits the same anatomical characters, and very nearly the same train of symptoms, both rational and physical, as the pneumonia of the adult life; and a *partial* pneumonia, in which the inflammation, instead of invading a large part of a lobe or a whole lobe, attacks isolated small portions of the parenchyma, so as to present an appearance of nodules of inflammation scattered here and there through the healthy tissue.

Assisted by these combined means of forming a conclusion upon the subject, we have been led to the belief that the former method of dividing the pneumonia of children into the two forms of lobular and lobar is incorrect, and we have determined to substitute for the term lobular that of *partial*, which is the one employed by M. Legendre and also by Dr. Alois Bednar (*Die Krankheiten der Neugebornen und Sauglinge*, Dritter Theil, Wien, 1852, p. 65), while we shall describe the other form of the disease under its usual title of *lobar.* Of these two forms, the latter is much the most frequent, though it was formerly thought that the lobular was more common than the lobar variety, simply from the fact that bronchitis attended with lobular collapse (the conditions heretofore almost always described as lobular pneumonia) is much oftener met with in children than true pneumonia, either lobar or partial.

Expectant treatment is that which is most strongly recommended.

A *purgative* dose is useful at the beginning of the attack, when the child is constipated, and when the abdomen is tumid and hard. A teaspoonful of castor oil, or two teaspoonfuls of simple syrup of rhubarb, will answer every purpose. After this period cathartics need be used only so as to keep the bowels moderately soluble. If they are moved spontaneously every two or three days, there is no occasion to give purgative doses. If they do not move, a simple enema, or the doses mentioned, will be sufficient. Violent or frequently repeated doses of purgatives are injurious, by exhausting the patient through the disturbance of the stomach which they occasion, or by setting up diarrhea.

It seems somewhat strange these experienced authors should dismiss the whole subject of external applications with the following paragraphs.

MM. Rilliet and Barthez were of opinion that neither blisters, Burgundy pitch, nor tartar-emetic plasters, exerted the least influence upon any one of the symptoms of pneumonia, but that, on the contrary, they increased the fever. Dr. West gave up the use of blisters entirely, in consequence of the irritation and fever they occasioned, and because of the disposition to sloughing which he observed to follow their use amongst the poor. At one time we thought we had observed great benefit from the use of a blister when other means had failed to produce some moderation of the symptoms after four or five days. If they are used at all, it ought to be with great care, especially in very young and feeble children, whose nutrition is depraved. In children of less than two or three years old, a blister should never remain on the skin longer than two hours. As a general rule, the mother should be told positively to remove it at the end of one hour and a half, even though the surface be still unchanged. A warm bread-and-milk poultice is then to be used as a dressing. and this rarely fails to cause vesication in a few hours. Employed in this way, we have had but once the misfortune to see a blistered surface slough, and this occurred in a child whose skin had been very much irritated by friction with amber oil and ammonia.

Since the spring of 1845, however, when we were led to make frequent use of mustard poultices and foot-baths in the treatment of the bronchitis and pneumonia of measles, we have rarely employed blisters, but have preferred the employment several times a day of the remedies just indicated. Two parts of Indian meal and one of mustard, for young children, and for those who are older equal parts of each, are to be mixed with warm water, and spread thickly like a poultice on a piece of flannel or rag five or six inches square. This is to be covered with fine muslin, linen, or gauze, applied first over the back and then the front of the thorax. It may remain from fifteen to forty minutes, or until the child cries or complains, or until the skin is reddened. The mustard foot-baths may be employed at the same time with the poultices. These applications are useful whenever the oppression is very great, and, when resorted to in the evening, they often allay irritability, and dispose the child to sleep. The number of applications to be made in a day must depend on the urgency of the symptoms. We have employed them from once a day to every two or three hours.

Dr. Chambers (*loc. cit.*) strongly recommends the use of linseed-meal poultices as a "direct restorative means, about the use of which also anywhere you need have no manner of hesitation." He claims that it allays the pain; relieves dyspnœa; induces moisture and activity of the skin; and promotes the absorption of the exudation. He directs the poultice to be spread half an inch thick on a cloth or flannel as broad as the circumference of the thorax, and deep enough to cover the whole chest, from the collar bones to the hypochondria. In adults this will usually keep in place of its own accord, but in children you should have a tape stitched on in front, and a tape behind, which you can tie over the shoulder in the manner of a shoulder-strap.

There are certainly no measures of treatment whose soothing influence is more to be sought after, than the continuous application of flannel bands wrung from warm water and swathed around the chest, and then covered with gutta percha cloth to prevent too rapid evaporation. Under the head of "General Management," the authors give such excellent directions, that it is better to allow them to speak for themselves, in respect, at least, to one important point—that of feeding the patient.

The patient ought not to be allowed to go entirely without food, even in the early days of the disease, neither should there be any effort made to stuff the child with large quantities of nourishment. The appetite is nearly always in great measure abolished, at first, and food is unwillingly taken except in very small quantities. A nursing child must not be allowed to nurse as heartily as usual. If it attempts to do so, it is probably from thirst and not from hunger. Water, therefore, should be offered to it from time to time, and the breast be allowed only every three or four hours for short periods. Weaned children should have only milk, always reduced by the addition of half or a third water, and pure water ought to be given frequently. The thirst in this disease is intense, and the physician should himself see that the patient has water freely. We have seen the most violent and obstinate screaming and painful restlessness quieted at once by a copious draught of cold water. In children over two and three years of age, milk and water is still the best food; but when this is refused, thin chicken or beef tea may be given in doses of a wineglassful or a gill every four hours. After three or four days have passed by, the administration of food is a very important part of the treatment. The child should now be induced, by persuasion and even gentle force, to take a little food at least three or four times in the twenty-four hours. As the severity of the symptoms subsides, the food ought to be increased in quantity.

In regard to diphtheria, the authors are decided contagionists. They, however, seem disposed to limit this property in the following statement: "But the evidence adduced convinces us that diphtheria is both contagious and infectious also, though to a moderate degree only." While their remarks in regard to the nature and symptomatology of diphtheria are quite full and explicit, it appears to our mind that sufficient prominence is not given to the discussion of the various modes in which this malady may produce death. The wide range of mortality, and the number and variety of lethal causes, form the most wonderful distinctive peculiarity of this disease. In all dissertations upon diphtheria, this part of the subject should be exhaustively considered.

As is usual, the treatment of this affection is divided into "local" and "general." They favor a solution of nitrate silver, 10 or 20 grs. to the ℥j, also hydrochloric acid, either pure or diluted with from one to ten parts of honey. With regard to their use of other forms of local treatment, the following paragraphs will explain their views.

Applications of powdered alum, tannic acid, and chlorinated lime, are recommended by writers of high authority. In slight cases, in which the disease shows but little disposition to extend, such applications may answer very well; but when the attack is threatening, and especially when the exudation is spreading, we should neglect these minor remedies, and resort at once either to nitrate of silver, dilute muriatic acid, or the tincture of the chloride of iron. If, however, these powders are employed, they may be applied by means of a throat brush, or by causing a sufficient quantity to adhere to the forefinger of the right hand, and conveying it upon this to the diseased surfaces.

The astringent and caustic preparations of iron have lately been introduced in the treatment of this affection with much benefit. They cause the pseudo-membranes to contract and shrivel, and thus favor their separation, while, at the same time, they modify the action of the mucous membrane, and also tend, as does the sol. sodæ chlor., to correct the fetor arising from the putrefaction of the false membranes, and to prevent poisoning of the system by absorption.

The tr. ferri chloridi and the ferri perchloridum are among the best preparations, and may be applied, either pure or diluted, several times in the course of twenty-four hours. Monsell's salt, in powder, has also been highly recommended by Beardsley, of Connecticut. and possesses the same mode of action, though somewhat more escharotic.

Carbolic acid, diluted with glycerine and water, applied by a mop to the throat, appears to possess almost équal virtue in causing the separation of the pseudo-membranes, and preventing their re-formation.

Various applications have also been recommended from the fact that they exercise a direct solvent power over the pseudo-membranes, and thus promote their removal. Among those which have been thus recommended are solutions of lime, potassa, and soda; solution of chlorinated lime; of chlorate of potash or soda; of permanganate of potash; of bromide of potassium; of pepsin; and of dilute lactic acid.

Dr. Jacobi (*Amer. Jour. of Obstet.*, May, 1868, pp. 13 65), has published an analysis of the relative value of these solvent applications. According to him, lime-water requires four to ten hours to thoroughly liquefy soft diphtheritic exudation; while for firm pseudo-membranes, it requires from thirty to seventy-two hours. Potash and soda, and their salts, act more slowly; and the one other application which he recommends as equally rapid in its action is a solution of bromine gr. j, bromide of potassium gr. j, in f℥vj of water.

We have carefully tested the latter solutions, as well as those mentioned above, and from the results of repeated tests, have concluded that lime-water is the most powerful in its solvent action upon pseudo-membraneous exudations. We have frequently found, when fragments of firm white exudation have been placed in lime-water at a temperature even lower than that of the buccal cavity, that the exterior began in a very short time (half an hour) to undergo disintegration, and that the whole fragment was reduced in a few hours to a granular putrilage. It is, however, undoubtedly true that this effect will be produced with very different rapidity upon different specimens of pseudo-membrane.

Their instructions with regard to general treatment will certainly meet the approbation of all experienced physicians.

Among the best internal remedies, however, are the various preparations of chlorine, iron, and bark, which may be given singly, or, preferably, in combination.

Thus, there are no remedies of more uniform and marked advantage than sulphate of quinia and tincture of chloride of iron, given in full doses at short intervals. Hydrochloric acid or chloric ether may be added to these tonics, and this combination is strongly recommended by West and other high authorities.

The Sanitary Commission, in London, reported very strongly in favor of a mixture containing tincture of the chloride of iron, with chlorate of potash, chloric ether, and hydrochloric acid, sweetened with syrup; full doses being employed according to the age of the patient, and frequently repeated. This combination, has been, by Gibb, rendered still more stimulating by the addition of muriate of ammonia.

We are not able to obtain either the space or time requisite for a more full notice of this book, but heartily commend it to our readers.

"*The Sphygmograph," and Its Physiological and Pathological Indications.* Edgar Holden, M.D. Philadelphia: Lindsay & Blakiston; 1874. 163 pp.

This book is an excellent monograph on an important subject, the investigation of which promises to elucidate many obscure points in pathology and the action of remedies. The Sphygmograph, an instrument to record minutely the peculiarities of the arterial pulse, was invented by Prof. Marey, and on account of some imperfections in its construction had dissappointed the almost unbounded hopes of its inventor and others interested. Dr. Holden has improved the original instrument of Prof. Marey in four important particulars: 1st. The pulse spring or lever which rests on the artery has, in Holden's instrument, a concave surface in place of a flat surface, which gives the former greater surface touching the artery, and thus gives a better defined tracing in case of a soft, compressible pulse. 2d. In Holden's instrument the weight of only one lever rests on the artery, instead of two. 3d. The second or tracing lever working horizontally, a pen fixed at its extremity writes with ink the tracing on ordinary smooth writing paper. 4th. The pulse spring or lever is attached at one end to a watch spring, on an axis which can be wound up with a key to make any given pressure on the artery; the amount of pressure being an important part of the observation.

The sphygmograph belongs to that class of instruments which increase the range and delicacy of the human senses, and gives exact records of the condition of the arteries, heart, vaso-motor nerves, as well as of all the other factors which make up an arterial pulsation. It is more complicated than the thermometer, and requires long experience in using to make correct records; and also in comparing the records made by it, to get useful deductions; on this account we think that it will never be a much used diagnostic instrument, but for investigating the laws of diseases, the organs first and chiefly affected, we think that it will be of greater use than the thermometer: it will be of great value in investigating the action of medicines and the useful application of new remedies. Dr. H. has examined the action of a few remedies which are usually considered to have about the same therapeutical action, and he has discovered important differences; for instance, gelseminum and aconite both reduce the frequency of the pulse, and they are frequently used indiscriminately as arterial sedatives: the sphygmograph shows that gelseminum causes a great increase in arterial tension, while aconite reduces the frequency of the heart's action without increasing the arterial tension. There is in this direction a mine of therapeutical knowledge ready to be opened and to yield its treasures. We think that much valuable knowledge could be obtained by the investigation of yellow fever by the sphygmograph. Dr. Holden's sphygmograph is tolerably simple, and costs in New York about $22.

The book is well printed and free from typographical errors, and the subject is presented in a very interesting form. P.

The Physician's Dose and Symptom Book. Containing all the Doses and Uses of all the Principal Articles of the Materia Medica and Officinal Preparations; also Table of Weights and Measures, Rules to Proportion the Doses of Medicine, Common Abbreviations Used in Writing Prescriptions, Table of Poisons and Antidotes, Index of Diseases and Treatment, Pharmaceutical Preparations, Table of Symptomology, Outlines of General Pathology and Therapeutics. By Joseph N. Wythes, A.M., M.D., etc. Eleventh Edition, revised. Philadelphia: Lindsay & Blakiston; 1874.

If the reader will picture to his mind a volume of 236 pages, each page measuring about four by three inches of matter, printed with large type, he will be able to form some idea of the brevity with which the important subjects mentioned on the title page are treated. The rapidity with which the book has reached its eleventh edition certainly indicates a high degree of appreciation by the profession. But upon what recommendation this appreciation is based, we are unable to inform our readers. The multiplication of "handy-books" in medicine is advantageous to the profession, if their use is restricted in such a manner that they shall not displace, or replace, the thorough treatises of our great masters. Their only use should be that of a simple reminder to the busy practitioner.

Why are Not all Physicians Homœopathists? By William H. Holcombe, M.D., Member of the American Institute of Homœopathy.

A most remarkable query this would be, indeed, if, as we presume is not the case, it were addressed to the medical reader rather than the dear, gullible people.

If we are wrong in this surmise we will rejoice to be corrected, but it seems not unlikely that visions smacking of the real rather than the ideal, "milk and honey of the homœopathic Canaan" had somewhat to do with the production of this paper.

The most proper direct answer would be, that when all physicians become homœopaths there will no longer be any physicians. The true physician is catholic, and adopts any and every mode of cure which the accumulated experience of his profession and his own observation teach him to regard as most appropriate to the case. We can with as much justice retort by asking, "why all preachers are not Swedenborgians or spiritualists?" Or, if we were very strict believers in the "similia similibus carantur," why all preachers do not advise their hearers that the best way to become pious is by committing sin? Or, by asking again, why all politicians do not teach that the best way to bless a republic with good laws is by enforcing bad ones, like that great absurdity in politics, who has openly advocated this deluding doctrine. Alas! alas for the belief in coming human perfection or progress! The bye-ways that lead off from the paths of truth seem to diverge to one common assembly ground, to which each individual errorist repairs with his rotten brick, in the vain hope that Heaven may yet be scaled by the Babel it is to aid in erecting—"falsus in uno, falsus in omnibus." We presume that Dr. George Johnson, in his recent comments upon three cases of poisoning in homœopathic practice by concentrated essences, gives a not incorrect account of the present state of homœopathy, when he says the "homœopaths have lately made a change of base, passing from the irrational and ludicrous extreme of infinitesimal dilutions to the dangerous extreme of the greatest possible concentration of active and poisonous drugs." The *British Medical Journal*, in commenting upon this exposure, finds additional evidence "that homœopathy, which had begun as a delusion, is now rapidly ending as a fraud."—*Boston Journal*, Feb. 1.

A Universal Formulary. Containing the Methods of Preparing and Administering Officinal and Other Medicines, The whole Adapted to Physicians and Pharmacentists. By R. Egglesfeld Griffith, M. D. Third edition, carefully revised and much enlarged by John M. Maisch, Phar. D., Professor of Materia Medica and Botany in the Philadelphia College of Pharmacy. Philadelphia: Henry C. Lea; 1874.

Our readers are well aware that Griffith's Formulary has for a long period been justly regarded as the best in the English language. The improvements made in this edition are set forth in the following extract from the preface. "The numerous improvements in manipulations and processes have been carefully noted, and the new remedies of acknowledged merit and importance duly noticed, while quite a number of antiquated formulas have been dismissed from the present edition. Notwithstanding this, the increase in the formulary alone amounts to considerably more than one hundred pages, and in order not to increase the work beyond proper limits, the plan has been adopted to state the forms in which many remedies are best exhibited in extemporaneous preparations, instead of copying prescriptions adapted to special cases."

Catalogue of the Library of the Surgeon General's Office, United States Army. In three volumes. Government Printing Office; 1873.

It must be a matter of intense gratification to all lovers of their country, as well as to all physicians, that the medical profession is united in genuine efforts for the promotion of human welfare. Amid the din of the political clamor which both specializes and disgraces our national capitol, some noble members of our profession are incessantly working for the advancement of our highest aims. In carrying out these purposes, one great object has been to establish a medical library which, in course of time, should become a matter of utility and pride to the profession of the whole country. How far this purpose has been successful up to the present time, the following extract from Assistant Surgeon J. S. Billing's report, will show: "The library now contains about 25,000 volumes and 15,000 single pamphlets, and the present catalogue gives about 50,000 titles exclusive of cross-references."

Annual Report of the Board of Health to the General Assembly of Louisiana. 1873.

Third Annual Report of the Board of Health, of the Health Department of the City of New York, April 11th, 1872, to April 30th, 1873.

Believing, as we do most earnestly believe, that the promotion of human welfare in any one essential, tends to influence its promotion in other essentials, though seemingly disconnected, we are ready to give aid and encouragement to all systematic efforts looking to the improvement of human health. Even if these efforts contribute ever so little to the sum of health and life, and diminish to ever so small an extent the sum of disease and death, they should be protected and encouraged, in order that they may gather strength from observation and experience, and thus enlarge their range of usefulness and beneficence to man.

If Boards of Health accomplished nothing beyond the collection and publication of the statistics comprised in their annual reports, they would still offer a fair return for the expenses they involve, by showing us the forms of disease which the grim destroyer is employing to depopulate different communities. The highest citizen in the land, and the most humble, have an equal interest in knowing what arrows are being launched from death's bow. When this information is had, the next inquiry is "how may I avoid the danger?"

The offices performed by Boards of Health are, to disseminate information in regard to the prevalence of disease—to employ all means known to human science to limit or prevent the occurrence of disease, and to teach the lay members of the community what course each is to pursue to diminish personal risk or receptivity to any prevailing sickness. The two volumes whose titles head this notice contain a large mass of information worthy of careful attention.

For purposes of more ready comparison, we have arranged computed statements of the mortality from several important diseases in New York and in this city. The computations have been based upon an estimated population of 200,000 for this city and of 1,000,000 for New York. The annual death rate in New York city was 32.6 per 1000, or 326 for every 10,000 living inhabitants; the annual death rate of new Orleans was 37.5 per 1000, or 375 for every 10,000 inhabitants. The report of this city accounts for the extraordinary death rate by imputing it to the occurrence of an epidemic of small pox. It is certainly a very remarkable fact that while the death rate greatly exceeds that of New York city, the percentage of total mortality in this city due to "miasmatic" disorders is actually less than appears in the tables of mortality of New York. In New York the number of deaths ascribed to miasmatic affections is 11,096, being 33.99 per cent.; in New Orleans the deaths due to these disorders were 2,314, being 30 83 per cent. of total mortality. Some allowance must be made for slight differences in classification, but it is only in respect to one assigned cause of death that attention need be particularly urged in this connection. While in New York the number of deaths ascribed to various forms of congestion amount to 1.38 of total mortality, in this city they sum up to 3.51 per cent. There is no kind of doubt that in a considerable number of these cases the congestion was due to malarial influences, and therefore, in so far as it becomes possible to make the correction, the transfer of mortality should be made to its proper list. Apart from the well known tendency of the zymotic diseases to give rise to congestion, we believe it may be safely asserted, that there is no greater liability to its occurrence here than in New York. The percentage of deaths from small pox in New York was 2.85, while in this city the figure mounted up to 6.72. This is a sad record, but it is not likely that any city possessing the large proportion of negro population that this does, will be long exempt from similar experiences.

There is one point in connection with the comparative percentage of mortality from miasmatic affections in this city and in New York, to which we feel it our duty to call especial attention. Every physician is well aware that the climatic and terrene influences affecting this city are more favorable to the spread of most of the zymotic diseases than the same influences as it respects New York. In what manner then shall we account for the fact that our percentage of mortality is less from these causes than in New York? The circumstances that affect the spread of all air-borne diseases, are as yet but imperfectly understood. Barometric and hygrometric states of the atmosphere have an admitted effect upon them. So have particular conditions and alterations of temperature. These circumstances must all be taken into account, and accorded some degree of influence. Especially is it proper to consider them now, when a new school of patho-genetic philosophers are endeavoring to explain epidemic diseases by referring them to physico-chemical causes, originated by peculiar meteorological conditions. States of the atmosphere as it respects the presence of volatile impurities, or substances of any description whatever, or as it respects interference with free circulation, must also be included. Another important factor in begetting or preventing epidemics is the state of the population in regard to personal receptivity or powers of resistance.

When we have summed together all these points, we are better prepared to discuss in a calm and appreciative manner the advantages and disadvantages of those measures usually employed to avert the spread of epidemic affections which, with more complacency than either past successes, or any present scientific formulations warrant, we term, processes of "disinfection." We mean by this statement to affirm, that it is not yet known that carbolic acid, or any other agent, if we except intense heat or cold, is capable of destroying any air-borne zymotic poison. Even admitting its capability of rendering these poisons inert in close chambers, there is no instance establishing a similar effect upon them while floating in the unconfined atmosphere.

We are scarcely able to defend our resort to "disinfectants," except by assuming a belief in the parasitic origin of diseases against which we employ them. Upon this point it has recently been well stated, that in so far as any knowledge has been obtained in reference to the destruction of minute organisms by any form of disinfectant, this end cannot be accomplished short of rendering the air altogether irrespirable for human beings.

But even with an avowal of such a degree of skepticism, we hold that it is proper to continue our attempts at disinfection, until all rational forms of experimentation have been exhausted. The spread of yellow fever is marked by some characteristics which, speaking hypothetically, specially indicate that the disease may be limited, if not entirely stamped out, by disinfectant measures. These are, first, the almost uniformly deliberate and steady rate of its spread; second, its mode of diffusion is by infecting localities rather than by direct communication from the sick to the well. The yellow fever germ is conveyed to, or developed at, some given point, and if certain unknown conditions are favorable, it undergoes increase by some kind of multiplication; if these conditions are unfavorable, no such results ensue, and no epidemic follows. These circumstances point it out as a disease against whose propagation we should anticipate the best results from the use of so-called disinfectants. One difficulty in utilizing such measures is, that although we speak of a quality of yellow fever poison which limits the indications of its active presence to definite localities, and which gradually extends the boundaries of these localities, we are utterly ignorant as it respects the surface, or substance to which this poison appears to attach itself. What shall we attempt to disinfect, the surface of the ground, our houses, our clothing; or is it a poison which breeds in impure air, and whose ponderability gives it all the phenomena of a localized growth? But admitting that we have learned what is to be disinfected, it remains yet to ascertain enough in respect to the nature of the poison to be able to formulize agents for its destruction. Let us, however, still encourage continued investigation, and continued efforts at "disinfection;" it may be that good may come of it, and we certainly know, that when prudently applied, no harm can follow beyond expenditure of time and money. In truth, while we should be slow to advocate such a belief, the most skeptical reader of this report of the Board of Health is not able to affirm that the efforts of the Board at "Disinfection" did not give us immunity from yellow fever, and some other zymotic affections during the past year.

The deaths from consumption are 11.32 per cent. of total mortality against 13.09 per cent. in New York. From cancerous affections 1.23 per cent., and 1.20 per cent. in New York.

If we take into consideration the many disadvantages under which the Board of Health has had to labor, if we remember that they have to deal with a class of people large in numbers, and not only helpless in their ignorance and insanitary habits, but in morale even a few steps further removed from "evangelization" than when, several years ago, the great national duty of "evangelizing four millions of negroes," was proclaimed to an expectant world—after having made these allowances, we must give them credit for much efficiency and earnestness in their work.

Galvano-Therapeutics, A Revised Reprint of a Report made to the Illinois State Medical Society, 1873. By Dr. Prince. Philadelphia: Lindsay & Blakiston; 1873.

We are scarcely able to judge of the merits of this little volume; nor do we know anything of the author, except that he inserts on a fly-leaf, a card from Professor Gross complimenting a work that he had previously written on orthopedics. The book abounds with cases illustrating the successful application of galvano-therapeutics. We give our readers the benefit of one of them.

Miss N., aged 19, attending school and expecting to graduate, was overtaken in the winter by a pulmonary inflammation which confined her to bed for weeks.

The convalescence was incomplete when she resumed her studies, and her graduation exercises were performed as if no interruption of health had occurred.

June 30. Exhaustion, palpitation, pain in the chest, headache, anorexia, constipation, and excessive menstrual flow are the heads of the case. The details may readily be imagined. The most grave apprehension of approaching consumption was haunting the parents' anxieties.

Stethoscopic examination showed a slight catarrhal pulmonary complication, but no organic disease could be discovered.

Cathartics and tonics, including iron and quinine, had been taken with only temporary effect. Without change of the tonic medicine the galvanic current of 100 cells positive, to back of neck, and negative to hypogastrium, was employed continuously 20 minutes; then 90 cells, interrupted 10 minutes. Next morning the bowels moved without cathartic medicine. Several sittings, at intervals of 2 and 3 days, removed the troublesome symptoms, and improved the appetite, so that all medical treatment became unnecessary.

The primary influence in this case was the improvement of the function of the ganglionic nervous system.

The immediate result was the emptying of the colon, and the secretion of the gastric juice. With the grist well ground out below, and the hopper filling above, the working of the mill became all right. Good moral feelings and healthy intellectual action followed the physical improvement.

We do not hesitate to acknowledge that in reading this case our estimation of the value of the book was somewhat lessened.

The book is gotten up in the excellent style usual to the publishers.

Lectures on the Clinical Uses of Electricity. Delivered in University College Hospital, by J. Russell Reynolds, M.D., F. R. S., etc. Second Edition. Philadelphia: Lindsay & Blakiston; 1874.

The Cis-Atlantic reputation of this author is as well established as that he enjoys at home; this is, therefore, a sufficient guarantee of the merits of his lectures upon the above mentioned subject.

Contributions to the Study of Yellow Fever. A. The Distribution and Natural History of Yellow Fever in the United States; with Chart Showing Elevations of Localities where it has appeared from A. D. 1668, to A. D. 1874, by J. M. Toner, M.D. B. The Yellow Fever Epidemic of 1873; Reports from Medical Officers, U. S. Marine-Hospital Service, with Note by the Supervising Surgeon. John M. Woodworth, M.D.

This is a pamphlet of 51 pages, designed to exhibit the points of occurrence, and dates of occurrence, of yellow fever in the United States, together with the elevation above the sea level of every locality where yellow fever has prevailed.

Dr. Toner believes with Humboldt, Drake and others, that any considerable elevation above the sea level is a bar to the prevalence of yellow fever. He fixes the maximum altitude to which it may reach at 500 feet. A chart is inserted in the pamphlet, which shows every locality at which yellow fever had prevailed in the United States, with dates of occurrence, and elevation of each locality above the sea level.

Dictionary of Elevations and Climatic Register of the United States; containing, in addition to Elevations, the Latitude, Mean Annual Temperature, and the Total Annual Rain Fall of Many Localities; with a Brief Introduction on the Orographic and other Physical Peculiarities of North America. By J. M. Toner, M.D. New York: D. Van Nostrand, publisher, 23 Murray and 27 Warren Streets; 1874.

To our mind this is one of the most interesting and valuable publications of the day. The purpose of the book we leave its author to explain in his own words.

The work of compilation has been a labor of love, and undertaken chiefly for the purpose of placing within reach of the medical profession a record that may enable and induce professional men in different localities in the United States to observe, record, and contrast the influence of elevation, if it has any, on health and disease. Hitherto latitude and longitude have been the chief and almost the only conditions modifying climate, that have been taken into account in considering the influence of localities on health.

Physicians and travelers have observed in all ages and in different parts of the world, that particular diseases are much more prevalent in certain cities and countries than in others, and that diseases common in the lowlands with a high temperature are almost unknown at high elevations with a low temperature in the same latitude. These facts suggest that altitude to some extent controls the type of diseases. Of course it is necessary for the observer to keep in view the influences not only of latitude and longitude, but also of a dry or a humid atmosphere; and of a high or a low barometer.

When it is considered how completely altitude in every part of the world controls the natural productions of a region, and modifies or limits the types and species of animals and plants that exist and thrive there, it will not be thought strange, that elevation should powerfully affect the health, vigor, habits, pursuits and longevity of man.

Our purpose in this work has been to furnish exact data, and as far as practicable to call the attention of the profession and of scientific observers to the influence of altitude upon the natural productions and the cultivatable crops and fruits, and upon human health, and we have therefore carefully avoided obtruding any theories of our own.

The spirit of inquiry, so characteristic of the present age, will not rest satisfied without questioning the wisdom of every usage and condition that in any way affect man's well being. We opine that there are no fields more worthy of study and promising in important results, than those that have for their aim the prolongation of human life.

The future of the medical profession is largely identified with measures that can in any way prevent disease.

We feel hopeful that as the knowledge and means multiply for improving the sanitary conditions of cities and rural habitations, and of contrasting the birth rate and the death rate of different localities with each other, increased longevity will be more and more marked. Where the population, the altitude of places, and their physical and hygienic surroundings that in any way modify climate and salubrity, are known, the problem of improving the public health will make much more rapid strides than it has in the past. Hygienic improvements affecting a nation are to be made through the accumulation of facts and vital statistics, so presented as enables the minds of the many to contrast the conditions and treasure the results obtained in one place with those of another. To collect these facts and arrange them in a comprehensive form is the duty of the scientific and educated who really desire to benefit humanity.

In the introduction is found a table which gives "the average elevation above sea level of the sites and density of population within corporate limits of each of the cities and towns of the United States, of over 5000 inhabitants, with their actual population in 1870. Also the number of persons to a dwelling, and the number of persons to a family, in fifty of the most populous cities, arranged according to rank in population."

It appears that very few of the towns found in this table occupy sites over 1000 feet above the level of the sea.

The following are most worthy of mention :

Virginia, Nevada	6200 feet.
Salt Lake, Utah	4350
Springfield, Mo.	1360
Staunton, Va.	1350
Council Bluffs, Iowa	1200
Madison, Wisconsin	1050
Atlanta, Georgia	1050

The last on the list is the only city in the United States which contains a large and rapidly increasing population, situated so far above the sea level.

Manual of the Botany of the United States, including the District East of the Mississippi, and North of North Carolina and Tennessee, Arranged According to the Natural System. By Asa Gray, M. D., Fisher Professor of Natural History in Harvard University. With twenty plates illustrating the Sedges, Grasses, Ferns, etc. 8vo., pp. 703. Fifth Edition. New York : Ivison, Blakeman, Taylor & Co.; 1870.

Introduction to Structural and Systematic Botany, and Vegetable Physiology. Being a Fifth and Revised Edition of the Botanical Text Book. By Asa Gray, M.D., etc, With more than thirteen hundred Wood-cuts. 8vo., pp. 554. New York: Ivison, Blakeman, Taylor & Co ; 1871.

School and Field Book of Botany. Consisting of "Lessons in Botany," and Field, Forest, and Garden Botany bound in one volume. 8vo., pp. 600. By the same. 1872.

Lessons in Botany and Vegetable Physiology. Illustrated with over 300 Wood Engravings, to which is added a copious Glossary. 8vo., pp. 240. 1872. By the same.

Botany for Young People, Part I. How Plants Grow. A Simple Introduction to Structural Botany, with a Popular Flora, etc., etc. With five hundred Wood Engravings. 8vo., pp. 233. By the same. New Issue. 1873.

Botany for Young People, Part II. How Plants Behave; how They Move, Climb, Employ Insects to Work for Them, etc. 8vo., pp. 46. With Numerous Wood-cuts. By the same. 1873.

Flora of the Southern United States. Containing Abridged Descriptions of the Flowering Plants and Ferns of Tennessee, North Carolina, Georgia, Alabama, Mississippi, and Florida ; arranged according to the Natural System. By A. W. Chapman, M. D. The Ferns. By Daniel C. Eaton. 8vo., pp. 620. New York : Ivison, Blakeman, Taylor & Co.

The several works of Professor Gray, the titles of which are here enumerated, have, with one exception, been so long and so favorably known, that it seems almost an act of supererogation to parade them before the public with the view of calling attention to their many good qualities and their peculiar adaptation to both teacher and pupil. But as one of the number called "How Plants Behave" has been only recently recruited and added to the company, and some of the others claim the distinction of new dress, it affords opportunity of making a short speech in their praise to all who may be attracted to the inspection. Not to press the military figure any further, we take the liberty of saying that no botanical author has more reason to be proud of his labors in the department to which he has devoted himself, than Professor Gray. He has received not only the hearty and the *material* approval of his countrymen of all the four quarters of the Republic, but the highest commendation of the large body of botanical teachers and writers in Great Britain. The "First Lessons in Botany and Vegetable Physiology" is frequently referred to by the educational and scientific periodicals of England as unsurpassed in simplicity of plan and completeness of detail, by any other elementary work on the same subject in any language. It is, indeed, a model book, and deserves to be imitated by those engaged in writing upon other branches of natural history for the benefit of students and amateurs who are just entering upon a scientific course.

The volume entitled "School and Field Book of Botany," consists of the "First Lessons" bound up with "Field, Forest, and Garden Botany." The latter, comprising nearly four hundred pages, is intended to furnish botanical classes and beginners generally, with an easier introduction to the plants of this country than is the *Manual*, and one which includes the common cultivated as well as the native species. The arrangement is admirable, and we commend the work to the teachers and superintendants of all our high schools, in which, in our humble judgment, botany should constitute one of the principal studies. And just here we desire to enter our solemn protest against the merely technical instruction upon this subject which is generally attempted in our academies for young ladies. If teachers have not a practical knowledge of this beautiful science—and how few have—better lay it aside altogether. But, on the other hand, we insist upon it, that it is the duty of the directors and principals of such institutions to provide competent instructors, and thus furnish their pupils with a fair introduction to a study which few of them will fail to prosecute in after life if they are properly taught at the outset.

The "Structural and Systematic Botany," is a text book of structural and physiological botany, and is intended for classes which have passed through the preceding volume. As the author states, "it is a convenient introduction to systematic or descriptive botany," and should not therefore be taken up until the "First Lessons" have been mastered.

The "Manual," as everybody knows, "is designed as a compendious Flora of the Northern Portion of the United States," and is therefore the culminating volume of the series. As it comprises, however. the plants of only one half, or less than one half of our country, it cannot be looked upon as complete, but only an installment of that grander work promised by the author—a work which shall embrace in its scope the vegetable world lying between the two oceans, and extending from the Gulf of Mexico to the Great Lakes. In the mean time Professor Gray tells us of the South, that we can find most of what we desire to know of our own local flora in the admirable "Flora of the Southern States" by the late Dr. Chapman of Florida.

The two remaining works whose names are here given, "How Plants Grow," and "How Plants Behave" are intended mainly to interest young people and children in some of the functions and habits of plants, and thus beguile them along a pleasant way, out into the fields of botanical science. Two more attractive books of the kind cannot be found anywhere, and having perused them more than once with instruction and peculiar gratification, we can sincerely recommend them to children of larger growth, who desire to know something of the beauties and wonders over which they are unconsciously stepping every day of their lives. We would gladly extract many pages from the latter in illustration of this statement, but we fear to encroach further upon the pages of a strictly medical journal. We take the liberty, however, of giving the titles of some of the chapters, to let our readers know what a rich store of pleasant information is in reach of all young people who are able to master "Robinson Crusoe" or the "Arabian Nights." Chapter I. *How Plants Move, Climb, and Take Positions. II. How Plants Employ Insects to Work for Them. III. How Certain Plants Capture Insects.*

Let it not be supposed by the uninitiated that these works comprise all of Professor Gray's published volumes. They do not represent one half of his contributions, and are rather the results of his *leisure(!!)* hours.

The remaining work on the list is one of which we of the South have reason to feel proud. Dr. Chapman is a Floridian, a citizen of Philadelphia, and the only author who has given us anything like a reliable work on Southern Botany. The work is not new, having been published in 1860, and no new edition, properly so called, has been issued since then. Nevertheless, we have reason to believe that it is a faithful flora of all the Southern country east of the Mississippi, and is referred to as such by Professor Gray in his preface to the Botany of the Northern States.

These books may all be obtained in New Orleans.

The Student's Guide to Surgical Anatomy, etc.; being an Introduction to Operative Surgery. By Edward Bellamy, F. R. C. S., etc., etc. With illustrations. 12mo., pp. 300. Reprint from the London Edition. H. C. Lea: Philadelphia; 1874.

We are not of those who attach any very great importance to books on topographical, or, as it is ordinarily called, surgical anatomy. It is impossible for any one to follow the ordinary methods of dissection, with a text book on descriptive anatomy as his guide, without becoming acquainted with the relations which the several structures and organs bear to each other in any given region; and a book on surgical anatomy can teach him but little more than this. Such books therefore are not suitable for students, and are not required by accomplished anatomists. They are of service, however, when well illustrated, but more on account of their illustrations, when they are good, than their letter-press descriptions. In the book before us the descriptions may be very good, and it is fortunate that they are, but we are compelled to say that the illustrations are very poor indeed.

In making these remarks, however, we may be doing the author an injustice; for, in the first place, as we are informed in the preface, the work is especially intended for those who are about to offer for graduation, and who are therefore supposed to require a little cramming. And, secondly, the author living in Margaret Street, Cavendish Square, London, cannot be supposed to have the selection, or rather the rejection of the old battered wood-cuts which the American republisher may require to do duty for him in this country. We do not mean to say that all the wood cuts here employed belong to the class of worn-out things generally denominated reverentially "old soldiers," but we do mean to say that very many of them would be of more service in the fire-place than in the printer's form. Look at Fig. 1, for instance. Did anyone ever see such a monstrous middle meningeal artery? And Fig. 8—could even a skillful anatomist guess what it is intended to represent, without first referring to the description? Do not Figs. 9, 10 and 11 rather confuse than assist the mind in its attempt to form a picture of the parts supposed to be represented? But we forbear.

The New Orleans Monthly Review. Daniel Whitaker, L.L.D., Editor and Proprietor. Vol. I., No. 1—April 1, 1874.

There is perhaps no more important feature in the Literature of the nineteenth century than the growth of its periodicals. From 1802–1809–1817, the dates respectively of the establishment of the *Edinburgh Review*, the *London Quarterly Review*, and *Blackwood's Magazine*—those patriarchs of their race, to our own day, seems but a little while—scarcely the life time of a man—yet how prolific has it been in Reviews, Journals and Magazines! Every shade of religious opinion, every school of scientific belief, every branch of art, every phase of political theory, has its own especial organ. In these we may find the events of the day, the discoveries in science, the speculations in philosophy, and the most inviting topics of general literature collected, and so presented to the busy, overworked man of the day, as to require least exertion on his part. Tired and exhausted from the ceaseless demand on his strength and his watchfulness, he has no means to keep up with the current, which flows as swift through the royal grounds ot science as over the well worn path of daily life, otherwise than through these monitors of his thoughts. No unimportant, and irresponsible position, therefore, does he fill, who thus assumes to guide and assist public opinion. His is a power I can compare to nothing more fitly than to that sort of personal influence one of stronger mould exerts on those around him; an influence of which he may be quite unconscious till some moment of trial and weakness—some evidence of false judgment, and misguided conscience, in those he has taught and moulded, comes back to him, and laying a skinny finger on his forehead, claims him as a parent with an "I am thy work." It is perhaps partly on account of my belief in this editorial responsibility, that I notice with such pleasure the rise in our midst of a Southern Review. We have been for a long time forced, through absolute lack, to apply to the North for our American magazines, often for the whole, from cover to cover, often for extracts, tales, criticisms, and facts. Taking, along with the information and amusement we sought, much we did not seek, such as misrepresentations, prejudices, and a plentiful sprinkling of "isms." Now it is not pleasant to be ever on the alert for these things, ready at each moment to tilt a lance with the writer you would select as the genial companion of your quiet hours, or, at the instant you admit his intellectual worth, to guard yourself from moral pitfalls he has placed before you. He is your guide through a vast extended country. He is the royal purveyor whose industry and care provide the feast you are to enjoy. Surely, in such men we should have confidence. In the case before us, we have also the satisfaction of knowing this is no maiden effort on the part of Prof. Whitaker. Experience and skill were doubtless gained by him in his long control of the *Southern Quarterly Review*. Surely it is no "prentice hand" he brings to his work.

The contents of the present number of the *N. O. Monthly Review* are varied and interesting, while a promise is made of still further entertainment in the ensuing number, when new publications will be up for review.

The contributions of poetry are especially fine. "Sacrifice of Iphigenia" will be particularly pleasing to minds that have learned to draw their sweetest draughts from classic fountains. There are two other little poems characterized by much sweetness and grace. But the gem of the book is Xariffa's "My Lady." The exquisite purity of the conception, its oneness, its delicate finish of detail, but detail as it strikes a poet's mind, its loveliness of expression, combine to make it almost perfect, and force even those to acknowledge her great merit, who had before been tempted to find this writer too vague and rhapsodical.

For my own part I can scarcely explain: even to myself, the strange fascination this woman by the sea,

"A scarlet blossom in her quiet hand,"

has over me. She steals my soul away, and, closing my eyes, I yield to her soft enchantments with a sort of dreamy wonder if I have not known her long ago—and where? With the love story, "Atala," I was not so favorably impressed, and feel, as I admit it, that I confess to great ingratitude for the almost Herculean effort to please. The unhesitating sacrifice of a pattern father, the "strife of elements," the putting in imminent peril, two fine steeds, a footman, a coachman, and a noble son of said noble father; all this compressed, like sweetmeats in a conserve jar, within the short space of one chapter, ought to make one grateful.

Finally, we regard it as a most hopeful sign, that in such days of darkness, when depression in business, the even now threatening flood, the oppression of wicked men, fill so many hearts with gloomy forebodings of the future, there should yet be one brave enough to make an effort toward the right. To sit in supine submission, and sigh, "the fates are against us, the time unpropitious, and even high Heaven's frown upon us, and our struggles all in vain," is to prove our right and title to the contempt of man and God.

Let us do with our might, and let us do *now whatever* offers room for high and lofty human effort, and I think we will find how many nooks there are, even in the humblest human life, large enough to hide a hero in. After that, if we fail, let us *endure* with "hearts of oak"—these two words, to do and to bear, summing up within themselves all the grandeur possible to man.

E.

Second Bienn'al Report of the State Board of Health of California, for the Years 1871, 1872 *and* 1873. Sacramento: T. A. Springer, State Printer, 1873.

Transactions of the Medical Association of the State of Alabama, Annual Session of 1873, *held in Tuscaloosa, March* 25, 26, 27.

The first named rep rt does very small credit to the medical profession of the Golden State. It contains some information of interest to the general reader, and but little that will forward the great objects of the sanitarian philosopher. In the first place the Permanent Secretary treats us to his opinions, and an account of his efforts, in relation to the establishment of a National Sanitary Bureau. "Let us have," says he, "a Secretary of Public Health, as well as a Secretary of War." The juxtaposition is not well chosen. We are afraid that in the present state of anarchy and corruption the two heads of departments would get their respective duties muddled and intermixed.

But even putting the best face upon the matter possible, what guarantee would the medical profession have, that even an average good man would be placed in the position of "Secretary of Public Health?" We want no such overseers or guardians as the present Government would be likely to appoint. "Sed, quis custodiat custodes ipsos?"

Nearly the whole pamphlet of 232 pages is occupied with matter so irrelevant to a report touching the great sanitary questions for whose elucidation State aid is solicited, that it seems indeed remarkable that a State Board of Health should recommend such material to be printed at the public expense. For example, thirteen pages are taken up in an exposé by a Dr. Kunkler, of Placerville, of his professional opinions upon insanity, especially, it would seem, in reference to the Mrs. Fair trial. The said Doctor favors his readers, with a number of his own cases, with treatment. Now, we do contend that all this sort of thing is out of place in a State document. The whole report considered in a scientific point of view, has but little more to recommend it than those pamphlets issued from various imaginary towns, out West, which stand so much in need of immigrants that they go to the expense of sending abroad printed vouchers of their wonderful healthfulness, and wonderful productions.

The transactions of the Alabama Medical Association comprise a number of carefully prepared and interesting reports, and exhibit a most commendable industry and zeal on the part of the profession of our sister State.

A Treatise on Therapeutics, comprising Materia Medica and Toxicology, with Especial Reference to the Application of the Physiological Action of Drugs to Clinical Medicine. By N. E. Wood, Jr., M.D., etc. Philadelphia: J. B. Lippincott & Co.; 1874.

A Manual of Toxicology, including the Consideration of the Nature, Properties, Effects, and Means of Detection of Poisons, more especially in their Medico-Legal Relations. By John J. Reese, M.D., etc. Philadelphia: J. B. Lippincott & Co.; 1874.

We are indebted to Messrs. Kain & Co., 120 Canal Street, for copies of these two very recently published books. They have been received too late for any expression of opinion in regard to their merits based upon a critical examination. It may, however, be a sufficient guarantee of practical worth, to many of our readers, if we inform them that both authors are teachers in the University of Pennsylvania. The volumes are gotten up in the very best style of the publisher's art.

A Clinical History of the Medical and Surgical Diseases of Women. By Robert Barnes, M.D., London, etc. With one hundred and sixty-nine illustrations. Philadelphia: Henry C. Lea; 1874.

A gynecologist, fully qualified by experience and learning, is preparing a critical review of this book for our July issue. The reader, however, need not fear to order it, lest his expectations should be greater than his realizations upon obtaining the book. It, together with others whose titles are found among these notices, may be ordered of James A. Gresham, No. 92 Camp street.

CORRESPONDENCE.

NEAR CLARKSVILLE, TENN., March 4, 1874.

Dr. S. M. Bemiss, New Orleans:

The great mortality of yellow fever at Shreveport and Memphis during the past season has created a desire to trouble you with some remarks on the subject. It is an unsettled question among medical men whether yellow fever is identical with bilious remittent fever. Dr. Fenner says (Vol. 7th, Trans. Amer. Med. Association, page 536): "We do not assert, with Rush and others, that yellow fever is *nothing but a high grade of bilious fever.* * * * It is certainly a little remarkable that the advocates of the *specific nature* of yellow fever are seldom able to distinguish it from bilious remittent, until it reaches its fatal termination in black vomit; and not always then. This was the case, both here and elsewhere, during the late epidemic, as appears in this report." There is no limit to the evidence that might be adduced on both sides of the question.

If the similarity of the two diseases is so great, and both occurring in malarial districts, why should not the same treatment be applicable to and successful in both? Having the utmost confidence in my treatment of intermittent, remittent and typhoid fevers, I propose to give a very short account of it, then to ask why it is not applicable to yellow fever.

Taking the hint from Dr. Lind's use of opium, described in his work on hot climates, I have made very free use of it in fevers for more than thirty years. If I should see a fever in the cold stage, I should attempt at once to produce sweating by ample covering and the very free use of some *hot* drink—lemonade, water, or any tea the patient may relish. This is sufficient for the cure of intermittent or remittent fever in most cases, but quinine should be given to obtain greater security. If I find the patient in the hot stage, I give half a grain of morphine, or its equivalent in some preparation of opium, with a teaspoonful of nitre and hot drinks. In about an hour perspiration appears, and all suffering is over; then a sufficient quantity of quinine completes the cure, though it is sometimes necessary to repeat this course. In typhoid fever the paroxysms of fever may be moderated by this plan used daily. When there is maniacal delirium requiring force to keep the patient in bed, I give four or five grains of opium, followed by hot drinks. This has never failed to produce sleep and permanent quiet, and a reduction of twenty beats in the pulse.

I have not given a purgative in any fever for thirty years. Dr. Fenner, many years ago, gave large doses of opium and quinine to jugulate typhoid fever; but he abandoned it as everybody else did, for large doses of quinine in that disease have been found injurious. He tried similar treatment in yellow fever: he says (Vol. 7th, Trans. Amer. Med. Association), "From 1847 to 1853, I succeeded in doing this (that is, cutting short the disease) myself, as did several other physicians in New Orleans, in a very satisfactory manner, by large doses of sulph. quinine and opium, at *the outset,* followed by moderate doses of calomel or blue mass" In the epidemic of 1853, Dr. Fenner found this plan not to succeed. The disease was much more malignant. I never should have given quinine in the hot stage.

Having controlled all the fevers I have encountered with my plan, I should not hesitate to try it in yellow fever. I hope these remarks may induce some gentleman to give it a fair trial.

N. S. THOMAS, M.D.

EDITORIAL.

The Journal.

The present number completes Vol. I. of the new series of the New Orleans Medical and Surgical Journal. It is a proper occasion for a sufficient degree of retrospection to enable us to speak of our failures and successes.

In the first place, it is to be admitted that the proprietor is not chargeable with any failure in the performance ot his part of the work. The Journal has been carefully and substantially gotten up, and mailed with regularity to its subscribers.

The Editor would have a source of the the most unmixed self-congratulation, if he were able to state as much with regard to the discharge of his own duties in the premises. While he is free to admit that in many things he has fallen short of his own wishes, and it may be, yet more so, of the expectations of others, it may be that he has still some reason to feel encouraged, in having, in any manner, surmounted some of the many difficulties in his pathway.

One of the most perplexing of an editor's duties, is that relating to the "purveying" department of a medical journal. This is especially true of every new journal which is commenced without a previous arrangement for material, to fill its columns for some time to come. This was the case in the present instance. The medical profession of our country have sustained us in regard to this weak point, far better than we have had any right to expect. For the most part, our original communications are quite worthy to be put forth as an exponent of the advancement of Southern medicine. If some of them have fallen below a rigid standard erected upon such a basis, the pressure and haste under which some of the authors were obliged to perform their work afford a competent explanation.

Medical journals should be conducted upon the plan of paying a fixed price for the contributions furnished them and appearing in their columns. This plan relieves editors of much of the embarrassment attending the selection of material to fill their columns. Every one will concede to the editor of a journal conducted on this method, the usual privilege of choosing that for which he designs to pay.

We do not feel that there is any cause of complaint on our part, of either the quality or quantity of material offered for the use of our JOURNAL. On the contrary, we have been so well furnished, that, for reasons scarcely necessary to be mentioned here, we have found it necessary to exclude from Nos. 4 and 5 the usual excerpta from other medical periodicals. No such irregularity will be permitted in the future.

But to return once more to the question of compensation for contributions. Neither the Proprietor nor Editor, in entering upon this enterprize, had expectations of realizing pecuniary profit directly therefrom. The Proprietor simply hoped that he would be secured against loss, by obtaining a number of *paying* subscribers sufficient to meet the expenses of printing and publishing the JOURNAL, he looking for his profits only to that publicity which would be given to his name among the medical profession of the South, and that patronage they would in turn naturally bestow upon his book and publishing house. We believe that his liberality fully merits the character of return he was led to anticipate. It is a matter of encouragement and cheer, that these anticipations have been already realized to such an extent, that we are authorized to make the following announcement. The Proprietor and Editor agree that any excess in the payments made for subscriptions to this JOURNAL, over and above the actual expenses attending its issue, shall be applied to paying for original communuications. The *pro rata* of payment is to be determined by the amount of surplus realized, until it becomes equal in amount to that paid by the leading journals of the United States.

As an earnest that the date is not likely to be far removed when the proposed arrangement can go into effect, we may further state, that the Proprietor, even now, holds himself ready to advance from his private funds liberal payment for such contributions as may be adjudged to possess striking merit, as soon as the friends of the JOURNAL decide favorably as to the expediency and probable permanence of such a course on his part.

We most earnestly invoke the aid and coöperation of those who feel an interest in the cultivation of medicine in this part of the Union, and hope that our future will yield full fruition to all the hopes and expectations we have ventured to express. In the mean time, the Editor has made such arrangements for the supply of material for the coming volume, that it is altogether within the bounds of his competency to promise that it shall excel its predecessor in interest and value. The Editor further trusts that those, if such there be, who have been aggrieved by any circumstance connected with the past conduct of the JOURNAL will allow themselves to become propitiated by time—that surest of all mollifiers of human wrath. We bring to the performance of our editorial duties no personal feeling beyond a most earnest ambition to obtain, and merit, for this JOURNAL the confidence and high estimation of the whole profession.

Cremation.

"The world is for the living, and not for the dead."

In all ages of the world human affection, and human repugnance, to utter dissolution and annihilation, have caused man to expend his skill and his treasures in the vain attempt to set aside that inexorable edict which reads, "dust thou art, and unto dust thou shalt return." But throughout all history, the manner of disposal of the dead has varied with differing circumstances of climate and population to such a degree, that we possess an assurance that these conditions have often overruled abstract sentiment, and have dictated the philosophy which determined the mode of human sepulture. When none of these stern necessities arising from superfluous population, or other inevitable surroundings, prevail, then human love asserts its ascendancy, and the bodies of the dead are placed in positions considered the most available and efficient to effect their preservation. Thus, inhumation, either in pits artificially made in the earth, or in natural caverns, seems to have been man's earliest and most natural impulse. No one can read the xxiii. chapter of Genesis without a gush of sympathy for the bereaved old patriarch, when he is providing a place wherein to deposit the body of the once wonderfully beautiful Sarah—"out of his sight." The earth was new then, and had many spare beds in her bosom to offer for man's last sleep, when his demands for the support of the living body had terminated. In after times, vast populations accumulated in various centers, and with the multiplication of human life to an excess inevitably comes its cheapening, until, as a recent writer has said of China, "human beings are but as weeds"—an incumbrance. These overgrown aggregations of human beings are not able to spare any of that soil which is capable of yielding sustenance for their own support, to the bodies of their dead. It is with them as with persons on the raft which leaves a sinking ship—a contest for life, and their necessities overrule all law, or ordinary affection. No just criticism or censure should attach to them, if the sentiment contained in the cold sentence heading these reflections should dictate their rule of action. They cannot even continue to use the grounds which their predecessors had consecrated to the purposes of burying their dead, for the soil of these old cemeteries has already become so saturated with animal material, that bodies placed in it no longer undergo ordinary putrefactive changes, while the emanations therefrom imperil the lives of all who are brought in close relation with them. No one is able to assert that any such experiences as these apply to this country, or that they need apply to it for a century to come. We therefore believe, that the discussion of cremation is premature and inopportune.

The telegraphic reports state that in one of our Eastern cities a physician has, within the past few days, erected a furnace in his cellar, and practised cremation upon the body of one of his children. What motive actuated him in thus sacrificing his instinctive parental feelings? Did he immolate them in view of the example he offered to others, in order that a general adoption of the custom should promote sanitary purposes and save the lives of his species? Surely, no thought of personal notoriety and consequent increase of patronage, was present to influence his actions. If this physician did really hope to offer himself for an example to others, that the sanitary state of the living might be improved by burning the bodies of the dead, he chose that side of the question which is most invulnerable to attack. That the earth of cemeteries in its natural state—that is, when not saturated with animal matter—is a reliable disinfectant, we all know; that fire is a far more efficient agent for this purpose, all physicians must admit. With this doctrine in full view, we published an opinion some years ago,* maintaining that the rapid decompo-

* Sanitary laws, unlike civil and moral laws, are not universal in their application, but have grown out of the necessities of localities differing radically as to the circumstances affecting the health of their respective populations. On this account, very little of what has been legislated or written, in regard to intramural sepulture is applicable to the mode of burial in this city. There is no reason to doubt that ill-health to the occupants of such houses, has frequently followed their erection upon soil that had nearly or quite reached the point of saturation, or in other words, soil which from repletion of animal remains no longer retained its powers of disinfection and deodorization. But no such facts can properly apply to the mode of sepulture practised in this city. Here the bodies of the dead undergo such rapid disintegration and volatilization, that within a very few months, only the ashes remain. Some very few exceptions occur, a portion of which are attributable to the

sition of human remains which takes place in the stone or brick chambers, built above the ground in this city, greatly lessened, if it did not entirely remove, the liability to the emanation of poisonous miasms from our cemeteries. The rapidity and character of the changes in organic matter subjected to the heated air of these vaults, bear a close correspondence with those of actual cremation. With us, therefore, who inter our dead in these small stone structures built above the ground, and exposed to the rays of an almost tropical sun, a *quasi* cremation already obtains. We know of no probable event which in the future is likely to render an appeal to a more rapid mode of combustion necessary.

Let us turn from this revolting subject; but before dismissing it, let us express a hope that our Northern brethren will suffer the bodies of their dead to be laid in the beautiful but silent cities they have prepared for their reception—at least until direful necessity compels a resort to some other method of disposing of them. The practice of cremation involves the stifling of a sentiment which, through all ages and conditions of man, has been held to be among the most pious and sacred of his heart. Its repression, or, in truth, the repression of any sentiment so unselfish and pure, is in some degree, an approach to barbarism. As a people we have already accomplished so much in this direction, that it is about time to check our downward career. The "facilis descensus Averni" of the old poet is among our present experiences; the remainder of the quotation is an inevitable consequence—

"Sed revocare gradum, hic labor, hoc opus est"

American Medical Association.

Our National Medical Congress will meet in Detroit, on Tues-

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fact that the burial cases are hermetically sealed, and thus the process of decomposition is retarded, in another portion partial dessication and mummification take place. But these latter examples are so few, that the question is mainly in reference to contaminations of the atmosphere by the volatilized elements of dead bodies undergoing extremely rapid decomposition, but enclosed with carefully constructed walls of stone or brick. The very elevated temperature to which the air of these vaults must be brought by the almost tropical heat of the sun, is not favorable to the life of the germs of zymotic diseases, so that I presume these affections are seldom or never communicated by emanations from our tombs. Moreover, the process of destruction is so rapid and complete, as to resemble combustion more than ordinary decay; the period therefore must be brief when any form of organic effluvia will continue to escape.

In the absence therefore of all proof or information to the contrary, I conclude that our method of interment is not prejudicial to the health of inhabitants, even living in the immediate vicinity of cemeteries, in any other manner than in adding to the amount of organic matter floating in the atmosphere, and thus increasing its aggregate impurity.

day, the 2nd day of June. The delegates from Southern Medical Societies and Institutions, who have it in their power to attend this meeting, may feel assured that a cordial greeting will await them in the beautiful city in which it is to assemble. They should without delay address letters of inquiry to Dr. Wm. Brodie, of Detroit, the chairman of Committee of Arrangements, and obtain information in regard to the most convenient and economical routes of travel, as well as to any other matters relating to their comfort *en route*, or while in Detroit. We insert the following notice from the Permanent Secretary.

☞ SECRETARIES of all medical organizations that have adopted the Code of Ethics are respectfully requested to forward to the undersigned a complete list of their Officers, with their Post Office addresses, and the number of their members in good standing. This is the only guide for the Committee of Arrangements in determining as to the reception of delegates.

It will also enable the Permanent Secretary to present a correct report of the medical organizations in fellowship with the Association.

WM. B. ATKINSON, M.D., *Permanent Secretary*,
1400 Pine Street, Philadelphia, Pa.

Proposed Meeting of Ex-Confederate Surgeons.

The following notice has been received, with a request for its publication.

We accord it a place, and commend the objects for which the meeting is called. A modern school of political philosophers is becoming afflicted with a dread of newspapers, and of the printer's art generally, which bodes only evil for the truth of the political history of the present times. The medical profession, both North and South, are united in the desire to elicit and publish for the benefit of mankind every fact connected with the Medical and Surgical history of the recent civil war, and can freely co-operate in meetings called for this purpose.

We most deeply regret that the evils and calamities which are now pressing heavily upon almost all whose unfortunate lots are cast in this land, will keep large numbers away who would otherwise be present.

TO THE SURGEONS (FIELD AND HOSPITAL) OF THE ARMIES OF THE LATE CONFEDERATED STATES.

For the advancement of Science—to rescue from oblivion all the important Medical and Surgical facts developed within the Armies of the "Confederated States," during the late War—it has been determined to call a Convention of the "Confederate Surgeons" (Field and Hospital), to meet at Atlanta, Ga., May 20, 1874.

Immediate action is considered absolutely necessary—since the war many of the most talented of the "Medical Staff" have died, and yearly others are added to the list—their valuable Medical and Surgical experience entirely lost to the profession.

For the success of this great Scientific and Historical Association, it is earnestly recommended that the ex-Confederate Surgeons of each of the Southern States, at once, take such steps as will secure a large delegation.

The co-operation of the Medical Staff of the late Confederate Navy is respectfully solicited.

Besides the contributions to Science, the social features of this organization—the revival of old Army Associations—will be of no secondary interest.

The Railways of the South, with their usual courtesy, will no doubt grant "Excursion Tickets" for this most important occasion.

S. P. Moore, Surgeon General, C. S. A.; Hunter McGuire, Medical Director, "Jackson's Army;" S. H. Stout, Medical Director, Hospitals, Army of Tennessee, and many others.

ATLANTA, March 28, 1874.

Preparatory of the convention heretofore called by the above circular, a meeting of the physicians of Atlanta was held this day, J. P. Logan in the chair, and E. A. Flewellen, Secretary.

The following resolution was offered and adopted:

Resolved, That W. F. Westmoreland, J. J. Knott, V. H. Taliaferro, Charles Pinckney and E. A. Flewellen be appointed a committee of arrangements to prepare for the convention of Confederate States Surgeons to assemble in Atlanta on May 20th, and to inform the surgeons whose names are attached to the call ot their action.

J. P. LOGAN, M.D., Chairman.

E. A. FLEWELLEN, Secretary.

Newspapers of the late Confederate States, favorable to the convention, will please copy.

"*A Doctor Needing Reconstruction.*"

Some of our contemporary medical periodicals are belaboring a poor South Carolina doctor to a degree of cruelty sufficient to justify the interference of the tender hearted phil-brute-ist Bergh. To kick the prostrate form of this poor unfortunate seems to be a luxury akin to that enjoyed by Falstaff at Shrewsbury.

It is said that every "heart knows its own bitterness" Who is able to say that some irreparable loss or incurable grief has not driven this physician to assume a position which no one seeks to justify?

But we submit, that whether he has the least extenuation for his rude conduct, or not, the threat of the Editor of the *Buffalo Medical and Surgical Journal* is fully as uncharitable and blameworthy. He appears willing to accept a letter, which is published with neither date nor signature, and which was probably never written for publication, as an exponent of the sentiments of a whole people, and threatens to withdraw his sympathy from such a people. While we believe it to be highly probable that the original sum total of sympathy invested was not enough to cause it to be missed when removed, we do hold that a spirit of christianity and magnanimity should have brought a softer answer and less censure, if it was thought wise to bestow any notice whatever on the communication. But even if we place these somewhat antiquated sentiments entirely out of view, the friends of those who have manipulated the processes of "reconstruction," under which the said doctor is living, should certainly feel called upon to require a display of the *greatness of soul* which distinguished the noble Pistol on the field of Agincourt, "Tell him my fury shall abate, and I the crowns will take."

A New Medical Journal.

The *Virginia Medical Monthly* is the title of a new journal, edited by Landon B. Edwards, M.D., and published in Richmond. The subscription price is $2 00 a year, in advance. The number issued is worthy of the highest commendation, and we hope the enterprise will prove a success.

Alumni of Albany Medical College.

We have received a copy of the Constitution and By-laws of this Association, and publish their request that all graduates of this school shall send their present addresses and those of other graduates known to them to the Secretary, Dr. W. G. Tucker, Albany, N. Y.

V

METEOROLOGICAL REPORT FOR NEW ORLEANS.

Table I---March.

Day of Month.	Temperature. Maximum.	Minimum.	Range.	Mean Barometer Daily.	Relative Humidity—Mean.	Rain fall—inches
1	73.5	63	10.5	30.07	82	
2	70.5	54	16	30.10	72	
3	77.5	55.5	22	29.93	81	
4	81.5	68	13.5	29.89	79	
5	80 5	69.5	11	29.90	78	
6	79.5	67	12.5	29.78	74	.60
7	69	60	9	30.08	56	
8	66	53	13	30.20	53	
9	71	52	19	30.20	65	
10	77.5	56	21.5	30.05	73	.11
11	71	55	16	29.96	78	
12	61.5	51	10.5	30.07	61	
13	67.5	50	17.5	30.15	68	.01
14	57	53	4	30.09	89	.70
15	74.5	55.5	19	29.94	72	.17
16	77	67	10	29.87	93	.79
17	78	71	7	30.00	91	.11
18	80.5	71.5	9	30.01	84	
19	81	70.5	10.5	29.97	80	
20	81.5	71	10.5	29.99	81	
21	82	69.5	12.5	30.02	80	
22	84	69.5	15.5	30.05	81	.02
23	74	52	22	30.08	88	.30
24	66.5	51	15.5	30.29	64	
25	68	50.5	17.5	30.16	77	.97
26	73.5	59.5	14	30.10	83	
27	79.5	62	17.5	30.10	82	
28	79	67	12	30.13	93	1.60
29	77	63	14	30.11	89	1.03
30	77	61.5	15.5	30.06	88	
31	82.5	67	15.5	29.94	80	1.72
Mean..	67.805 F.			30.041	78.59	Total. 8.13

NOTE. The mean temperature for March was 6.135 F., an increase of the mean temperature for the corresponding month of 1873.

Table II---April.

Day of Month.	Temperature. Maximum,	Minimum.	Range.	Mean Barometer Daily.	Relative Humidity—Mean.	Rain fall—inches
1	66	54	12	30.07	88	.56
2	62.5	49.5	13	30.21	64	.70
3	69	51	18	30.23	61	
4	72.5	52.5	20	30.10	61	.86
5	73	60	13	30.00	81	.59
6	80	67	13	30.01	84	
7	82	65	17	29.95	86	
8	80.5	63	17.5	29.69	87	
9	62	50	12	29.82	67	
10	64.5	46	18.5	30.08	63	
11	67.5	49.5	18	30.20	59	
12	72.5	52.5	20	30.18	64	
13	77	60	17	30.12	80	.07
14	80.5	65.5	15	30.09	82	
15	82	69	13	29.98	85	.71
16	67	64	3	29.87	95	3.00
17	69.5	61	8.5	29.87	95	4.28
18	75	63	12	29.91	90	.10
19	75	67	8	29.89	93	1.60
20	78	60	18	30.05	72	
21	77	63.5	14.5	30.09	78	
22	81	69.5	11.5	29.93	78	.50
23	78	70.5	7.5	29.89	74	
24	63	56	7	29.83	88	1.61
25	69	51.5	17.5	30.08	63	
26	79	57	22	30.19	67	
27	78.5	63	15.5	30.17	69	
Mean..	00.00	00.00	00.00	00.00	00	Total. 14.58

Mortality in New Orleans from February 23d, 1874, to April 26th, 1874, inclusive.

Week Ending	Total Mortality.	Whites.	Colored.	Consumption.	Small-pox.
Mar. 1......	106	54	52	13	16
Mar. 8......	109	50	59	16	27
Mar. 15.....	108	63	45	14	13
Mar. 22.....	138	90	48	13	25
Mar. 27.....	97	47	50	9	21
April 5.....	121	62	59	13	23
April 12....	111	68	43	11	18
April 19....	124	80	44	24	15
April 26....	130	72	58	14	23
Total.......	1044	586	458	127	181

OBITUARY.

At a meeting of the physicians of Hopkinsville, at the office of Dr. Dryden, Dec, 24th 1873, there were present, Drs. R. M. Fairleigh, James Rodman, Oscar Newland, P. W. Dryden, R. W. Gaines, F. Cahn, J. M. Dennis, W. H. Hopson and L. B. Hickman. P. W. Dryden was called to the Chair.

The death of Dr. Webber was announced, and the following Resolutions were presented and unanimously adopted:

Resolved, That whilst the death of our esteemed friend did not surprise us, owing to his advanced age, and though for some time past he has not been a citizen of our city, yet calling to mind the pleasant intercourse many of us enjoyed with him in the years long past, we feel sensibly his loss.

Resolved, That in the relations of life, whether as a citizen, father, friend, neighbor, a physician, we never knew a better man in each and all, and especially in the professional department he was the highest standard of perfection known to us.

Resolved, That a copy of these Resolutions be handed to each of our city papers, with the request to publish them, together with the obituary notice herewith attached.

P. W. DRYDEN, Chairman.

MEMORIAL NOTICE.

Dr. Augustine Webber was born in Virginia, on Feb. 9th, 1790. At an early age his father with his family removed to Kentucky, and settled in Jefferson, now Shelby county, where he grew up to manhood; studied medicine—did some practice as a physician. In 1813 he settled in the then young town of Hopkinsville, which was but just emerging from the condition of an inconspicuous village, and assuming the importance of a considerable town for that time in the history of the State. Opportunities for the prosecution of medical studies were of the most limited character, except to those whose fortune allowed them to seek the schools of distant cities, or those of foreign countries, and one's hope of a thorough medical education was to be realized only by the most patient and persistent plodding, the oral teaching of the practitioner in whose office the student was pursuing his course, and an occasional inspection of a case at the bedside. Books were few; anatomical and other plates and drawings were rare, and of pathological specimens, there were none; the "shops," as they were commonly called at that day, were barren of nearly all that is now considered indispensable for the student's use. Such, however, were the energy and determination of purpose, coupled with a mind naturally inclining him to medicine as a profession, that what were insurmountable obstacles to some, were only incentives to young Webber to renewed and constantly increasing efforts. How well he succeeded in gaining a knowledge of his profession, the history of more than fifty years of active and successful practice eloquently speaks. What he, in common with most of his contemporaries, lacked in the way of appliances was more than compensated for by a purpose to succeed, and to this end he bent the energies of his mind, all the faculties of which were absorbed in the one object, success, a success to be accomplished by increased knowledge.

An intimacy of more than twenty years gives the opportunity for a correct estimate of the character of our dear old friend, and it can be said truthfully that as a Christian he was to be followed; as a physician, he was faithful, conscientious and competetent, as a friend he was constant. and as a citizen, enlightened and liberal.

BELLEVUE HOSPITAL MEDICAL COLLEGE,

CITY OF NEW YORK.

SESSIONS OF 1873-1874.

THE COLLEGIATE YEAR in this Institution embraces a preliminary Autumnal Term, the Regular Winter Session, and a Summer Session.

THE PRELIMINARY AUTUMNAL TERM for 1873-1874 will commence on Wednesday, September 17th, 1873, and continue until the opening of the Regular Session. During this term, instruction, consisting of didactic lectures on special subjects and daily clinical lectures, will be given, as heretofore, by the entire Faculty. Students designing to attend the Regular Session are strongly recommended to attend the Preliminary Term, but attendance during the latter is not required. *During the Preliminary Term, clinical and didactic lectures will be given in precisely the same number and order as in the Regular Session.*

THE REGULAR SESSION will commence on Wednesday, October 1st, 1873, and end about the 1st of March, 1874.

FACULTY.

ISAAC E. TAYLOR, M. D.,
Emeritus Professor of Obstetrics and Diseases of Women and Children, and President of the College

JAMES R. WOOD, M. D., LL. D.,
Emeritus Prof. of Surgery.

FORDYCE BARKER, M. D.,
Professor of Clinical Midwifery and Diseases of Women.

AUSTIN FLINT, M. D.,
Professor of the Principles and Practice of Medicine and Clinical Medicine.

FRANK H. HAMILTON, M. D., LL. D.,
Professor of Practice of Surgery with Operations and Clinical Surgery.

LEWIS A. SAYRE, M. D.,
Professor of Orthopedic Surgery and Clinical Surgery.

ALEXANDER B MOTT, M. D.,
Professor of Clinical and Operative Surgery.

W. H. VAN BUREN, M. D.,
Prof. of Principles of Surgery with Diseases of the Genito-Urinary System and Clinical Surgery.

WILLIAM T. LUSK, M. D ,
D. WARREN BRICKELL, M. D.,
Professors of Obstetrics and Diseases of Women and Children, and Clinical Midwifery.

EDWARD G. JANEWAY, M D.,
Lecturer on Materia Medica and Therapeutics, and Clinical Medicine.

AUSTIN FLINT, JR , M. D.,
Professor of Physiology and Physiological Anatomy, and Secretary of the Faculty,

ALPHEUS B. CROSBY, M. D.,
Professor of General, Descriptive, and Surgical Anatomy.

R. OGDEN DOREMUS, M. D.,
Professor of Chemistry and Toxicology,

PROFESSORS OF SPECIAL DEPARTMENTS, ETC.

HENRY D NOYES M. D.,
Surgeon to the Charity Hospital, etc , Professor of Ophthalmology and Otology.

EDWARD L. KEYES, M D.,
Surgeon to the Charity Hospital, etc.; Professor of Dermatology, and Assistant to the Chair of Principles of Surgery, etc.

EDWARD G. JANEWAY, M. D.,
Physician to the Bellevue Hospital, etc. ; Professor of Pathological and Practical Anatomy. (Demonstrator of Anatomy.)

A distinctive feature of the method of instruction in this college is the union of clinical and didactic teaching. All the lectures are given within the Hospital grounds During the Regular Winter Session, in addition to four didactic lectures on every week-day, except Saturday, two or three hours are daily allotted to clinical instruction. The union of clinical and didactic teaching will also be carried out in the Summer Session, nearly all of the teachers in this Faculty being physicians and surgeons to the Bellevue Hospital and the great Charity Hospital on Blackwell's Island

The Summer Session will consist chiefly of Recitations from Text-books. This term continues from March 17th to July 1st. During this Session, there will be daily recitations in all the departments, held by a corps of examiners appointed by the regular Faculty. Regular clinics will also be held.

FEES FOR THE REGULAR SESSION.

Fees for Tickets to all Lectures during the Preliminary and Regular Term, including Clinical Lectures	$140 00
Matriculation Fee	5 00
Demonstrator's Ticket (including material for dissection)	10 00
Graduation Fee	30 00

FEES FOR THE SUMMER SESSION.

Matriculation (Ticket good for the following Winter)	$ 5 00
Recitation and Clinics	50 00
Dissecting (Ticket good for the following Winter)	10 00

For the Annual Circular and Catalogue, giving regulations for graduation and other information, address the Secretary of the College, Prof. AUSTIN FLINT, Jr., Bellevue Hospital Medical College.

MEDICAL DEPARTMENT

OF THE

UNIVERSITY OF LOUISIANA,

NEW ORLEANS.

FACULTY:

A. H. CENAS, M.D.,
Emeritus Professor of Obstetrics and Diseases af Women and Children.

JAMES JONES, M.D.,
Professor of Obstetrics and Diseases of Women and Children.

SAMUEL M. BEMISS, M.D,
Professor of the Theory and Practice of Medicine and Clinical Medicine.

STANFORD E. CHAILLE, M D,
Professor of Physiology and Pathological Anatomy.

T. G. RICHARDSON, M.D.,
Professor of General and Clinical Surgery.

FRANK HAWTHORN, M.D.,
Professor of Materia Medica and Therapeutics, and Clinical Lecturer upon Obstetrics and Diseases of Women and Children.

JOSEPH JONES, M D,
Professor of Chemistry and Clinical Medicine.

SAMUEL LOGAN, M.D.,
Professor of Anatomy and Clinical Surgery.

EDMOND SOUCHON, M.D.,
Demonstrator of Anatomy.

The next annual course of instruction in this Department (now in the fortieth year of its existence) will commence on Monday, the 17th day of November, 1873, and terminate on the third Saturday of March, 1874. Preliminary Lectures on Clinical Medicine and Surgery will be delivered in the amphitheater of the Charity Hospital, beginning on the 20th of October, without any charge to students.

The means of teaching now at the command of the Faculty are unsurpassed in the United States. Special attention is called to the opportunities presented for

CLINICAL INSTRUCTION.

The Act establishing the University of Louisiana gives the Professors of the Medical Department the use of the great Charity Hospital, as a school of practical instruction.

The Charity Hospital contains nearly 700 beds, and received, during the last year, more than six thousand patients. Its advantages for professional study are unequalled by any similar institution in this country. The Medical, Surgical and Obstetrical Wards are visited by the respective Professors in charge daily, from eight to ten o'clock A. M, at which time all the Students are expected to attend, and familiarize themselves, *at the bedside of the patients*, with the diagnosis and treatment of all forms of injury and disease.

The regular lectures at the hospital, on Clinical Medicine by Professors Bemiss and Joseph Jones, Surgery by Professors Richardson and Logan, Diseases of Women and Children by Professor Hawthorn, and Special Pathological Anatomy by Professor Chaille, will be delivered in the amphitheater on Monday, Wednesday, Thursday and Saturday, from 10 to 12 o'clock, A. M.

The Administrators of the Hospital elect, annually, *twelve resident Students*, who are maintained by the Institution.

TERMS:

For the Tickets of all the Professors	$140 00
For the Ticket of Practical Anatomy	10 00
Matriculation Fee	5 00
Graduation Fee	30 00

Graduates of other recognized schools may attend all the Lectures upon payment of the Matriculation fee; but they will not be admitted as candidates for the Diploma of the University except upon the terms required of second course Students. All fees are payable in advance.

For further information, address

T. G. RICHARDSON, M.D., Dean.

IODO-BROMIDE

CALCIUM COMPOUND.

Cincinnati Lancet & Observer, June, 1873.

A NEW ALTERATIVE COMPOUND.

BY J. R. BLACK, M. D., NEWARK, OHIO.

The profession owes much to the Messrs. TILDEN, of New York, for introducing, for its convenience, fluid extracts of the various medicinal plants in common use. Their *disinfectant—Bromo-Chloralum*—is the best and most unobjectionable of which I have knowledge. As a deodorant, its power is really marvelous. I have at this time a case of *cancer of the womb*, with an extremely offensive discharge, which the *Bromo-Chloralum*, properly diluted and used as an injection, corrects in a very effective manner. In the case, also, of a very old, bed-ridden lady, whose urine was discharged involuntarily, and which was of a very offensive ammoniacal smell—so that it was not possible to keep her bed free from its disgusting odor, until I directed the frequent use of this *deodorant*, and with the most satisfactory results.

But it is not this preparation to which I wish to direct attention, but another one for internal use, which these gentlemen have ingeniously prepared. I allude to their "*Iodo-Bromide of Calcium Compound*."

But, at the outset, allow me to say that what I have written, and wish to write, is not from any desire to puff either this house or any of its preparations. To do this I have no sort of motive but, on the contrary, the heartiest dislike. But when a physician feels himself a debtor to any one, for putting a convenient and excellent remedy into his hands, it would certainly be playing the part of a professionally "prurient prude," not to feel himself free to make candid acknowledgment of the fact.

The Component Parts of this preparation are stated to be bromine, iodine, chlorine, calcium, magnesium, iron, sodium, and potassium. It is claimed, by a rival house, that the union is a chemical impossibility. But I do not know that the manufacturers claim that all these elements are chemically united, but only in solution. Almost the same union in a weaker and differently proportioned solution is not infrequently met with in some mineral springs, as at Leamington, England, and in the Spa of Belgium. And this leads me to write what I have often thought, that as the curative virtues of some mineral springs are undoubted, why can not the same ingredients be concocted in a concentrated form for the convenience of the physician in the laboratory of nature ? It seems that the Messrs. Tilden have done this in an admirable manner in this Compound of theirs—perhaps more strongly alterative than what nature usually generates. By putting a half a teaspoonful of the "Solution" (not the Elixir) in half a tumbler of water, a draught is at once prepared, which might deceive the *habitues* of some mineral springs. The taste is slightly sharp and acid, but these impressions on the palate are gone in a moment after swallowing. The primary effect, especially when taken in the morning before breakfast, is precisely that of some mineral waters—a quick, *pleasant*, aperient effect. This I have noticed on myself scores of times, and have had it reported to me by almost every one to whom I directed its free administration.

The Therapeutical Properties of this compound have proved, in my hands, to be *alterative, laxative, resolvent*, and, in a minor degree, tonic. In the epidemic, which recently passed over the country, of influenza—popularly known as the epizootic—one of its most common sequelæ in strumous subjects was an enlargement of the cervical glands. This I found to disappear in the most satisfactory manner under the use of the "*Iodo-Bromide Calcium Compound.*" In fact, it seems to have, as its composition would indicate, a special effect on the glandular structures of the neck. *Chronic irritation of the pharynx*, and recent enlargements of the tonsils are also promptly benefited by its use.

In some Cutaneous Diseases it is one of the most valuable of our preparations. A young lady, very fair to look upon, was exceedingly annoyed by a mild, yet obstinate spot of herpes on her face. Mercurial ointments, oil of cade, and other remedies of a like class, had failed to remove it. The "Solution" applied pure to the part affected, proved effectual, after only two or three applications.

In Prurigo, its beneficial action is no less apparent. This affection, as all know, is often very obstinate, and a not uncommon effect of eating freely of Polygala Fagopyrum cakes, swimming in Darwin's nectar. It is an annoying, disagreeable, and troublesome affliction. It is often as obstinate as lichen, which is so obstinate as to have received the name of seven-year-itch—a disease which a fat old gentlemen once assured me he had had seven years to a day.

For the Removal of Prurigo, twenty drops of the "Solution" well diluted and continued for two or three weeks, will cure in almost every case. Such at least has been my experience. Excepting for children and adults of very fastidious taste, I prefer the "Solution" to the "Elixir." It is more active, and when properly diluted, more readily absorbed than the "Elixir." Considering that when it is deemed desirable to administer an alterative other than the mercurials, we are almost limited to the Iodide of Potassium, this preparation should be welcomed as a valuable addition to the list. *It seems to be free* from some of the objections appertaining to the Iodide ; such as the occasional production of severe irritation of the Schneiderian membrane, frequent irritation of the stomach, and more or less of a general debilitating effect. *It is a common expression* of those who have taken the compound under consideration, and for appropriate disorders, that *they feel better and more buoyant*, without having experienced in the least any unpleasant effect, and this is more than can be said of the great majority of our remedies.

Recent Communications from other Physicians.

Impurities of the Blood.—Extract from letter of W. M. Cornell, M. D., Editor "*Guardian of Health*" Boston, Mass., Aug., 7, 1873.—"I have used in my practice the Elixir of Iodo-Bromide of Calcium Comp., and have found it one of the best *alteratives* met with in my experience. For all impurities of the blood manifesting themselves in the various forms of skin disease, I consider it not only excellent, but invaluable. I have recommended it to several of our city Physicians."

Gonorrhœa.—Extract from letter of J. F. Forman, M. D., Newport, Locke Co., Tenn., June 23, 1873.—"I consider the Iodo-Bromide of Calcium Comp., the best combination of remedial agents I have ever used. I have recently employed the Solution very much diluted, as an injection in an obstinate case of Gonorrhœa with remarkable success."

Rhus Toxicodendron.—Extract from letter of Dr. C. S. Lacy, Macedon, Wayne Co., N. Y., August 8, 1873 --" I wish to speak of the wonderful success I have had with your preparation of Iodo-Bromide of Calcium Comp. (Solution), in poisoning by Rhus Toxicodendron. I have had several cases of the kind this season and have used the Solution both externally and internally with marked results. I make mention of this, as I have not seen any account of the use of this preparation in the treatment of such cases."

Scrofulous and Cancerous Tumours.—Extract from letter of Dr. A. D. CRABTRE, 37, Tremont St., Boston, Mass., August 8, 1873.—"I have made the study and treatment of Scrofula and various taints of the blood a special branch of practice during sixteen years, and have ever been on the alert for the best remedies to meet such cases. I have been using the Iodo-Bromide of Calcium Comp., for some months with most remarkable success—and in fact before I knew of your admirable combination, I had used the articles composing the same, with great advantage, in curing scrofulous and cancerous tumours that have long resisted treatments heretofore known."

Extract from letter of Dr. S. HATHAWAY, Berkeley, Bristol Co., Mass., June 27, '73. "I have been using the Elixir Iodo-Bromide Calcium for two years—and it finds general favor with my patients. A thorough test of its curative power, warrants me in saying that it fully deserves the warm encomium so freely bestowed upon it.

Cancer of the Womb.—Extract from letter of S. S. OSLIN, M. D., Pleasant Hill, Talbot Co., Ga., August 5th, '73.—"I have used the Bromo-Chloralum in a malignant case of cancer of the womb with most gratifying results. When I began its use such was the terrible fœtor from the discharges that I could scarcely stay in the room long enough to examine my patient. It was simply horrible. But now that room is as sweet as the nicest parlor. The pain was severe, almost unendurable, but the pain is gone and the lady appears to be improving rapidly. Of course I do not expect her to get well—but the relief she has experienced is every thing to her. I use the Bromo diluted 1 part to 12 parts of water, as a vaginal enema, and administer the Elixir Iodo-Bromide Calcium Compound in teaspoonful doses 3 times a day. And my patient is so much improved that my fear is, the medicine will not last till I receive another supply. It is too much to expect a recovery, and whatever of relief she may experience is due to your preparations. I am treating other cases of different diseases, with good results.

Itch, Scald Head, &c.—Extract from letter of WM. B. HARRISON, M. D., Columbia, Tenn., August, 1873.—"I desire to say a word or two in praise of your preparations—the Elixir and Solution of Iodo-Bromide of Calcium Comp.

The first case I employed it in was a delicate girl of strumous habit, some 10 or 12 years of age, who had been affected with caries of the femur for several years. In a few days after commencing the Elixir internally the appetite was very much improved. She has used it continuously only about six weeks, and though the bone disease has not been entirely cured, it has been so materially benefited, as well as her general health, as to be exceedingly gratifying—and we hope in due time for an entire recovery.

The next case was Itch.—The remedy was here used both externally and internally and the disease cured in a few days.

The next was Scald Head.—Here again the Solution was used externally and the Elixir internally and though the case has been an obstinate one—the carbolic preparations, conjoined with blood-purifiers, having previously failed—it has yielded very readily to this remedy in the course of two weeks.

I might, if I had time and space, enumerate thirty or forty cases in which I have used these preparations during the last four months, embracing Constitutional Syphilitic, Chronic Rheumatic, Mercurialistic, Scrofulous and many other affections and in all of them have had occasion to be pleased with their effects, I have prescribed it so constantly that our druggists now keep a supply on hand. It is a good remedy and we have only to try it to be convinced of its powers.

Scrofula.—Extract from letter of S. C. LACEY, M. D., Orleans, Mich., August 13th, 1873.—I have been using your "Elixir Iodo-Bromide of Calcium Comp.," in a number of Scrofulous cases, with such pleasing results that I am delighted with its action. I have been particularly pleased with its action in two cases in my practice, which I will state: Case 1st. A young lady of Scrofulous diathesis. I had been treating her for over six months with all the remedies I could find, but with little benefit. The difficulty seemed to be all in the stomach—with spasms lasting for hours; after they were relieved there would be more or less fever for a number of days. The attacks were so frequent, she was unable to do anything. Since she commenced taking the "Elixir Iodo"—two months ago, she has had no spasms, and is able to attend to her duties as well as ever.

Case 2nd., a child six years old, predisposed to Scrofula. Had a discharge from the head and ear, resulting from Scarlet Fever. Three months after having had Scarlet Fever was attacked with infantile Remittent Fever; during convalescence from that, was attacked with a severe pain in the front of the head, which could only be relieved by the use of opiates. After trying various remedies from which no relief was obtained, I commenced giving the "Elixir Iodo-Bromide of Calcium Comp.," in half teaspoonful doses, three times a day. At that time the tongue was coated, complexion scrofulous, disposition irritable, could not sleep nights, &c. In six weeks time after giving the "Iodo," she rested well at night, tongue clean, complexion natural, disposition more cheerful; in fact, she presents all the indications of returning health, and I think will soon be entirely well.

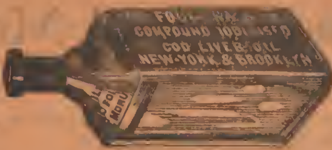
Scorbutic and Tertiary Syphilitic Diseases, Nasal Catarrh.—Letter from Walter M. Fleming, M. D., New York. In regard to the "Elixir and Solution of Iodo-Bromide Calcium Compound," I have been exceedingly gratified with the results of its use, primarily, as a prompt and efficient alterative, covering a large field of action and eminently qualified to fulfill all requirements where its component parts are indicated.

I have prescribed it largely both locally and internally in Scorbutic and Tertiary Syphilitic abscesses with the most encouraging results. I am now using it with the most unprecedented success in Nasal Catarrh, using the Solution diluted one to four or six, "pro re nata," as an irrigation or injection, from back of the mouth through the nares.

In severe and debilitating cases I use the "Elixir Iodo" full doses internally. In fact I know of no single remedy or combination, that promises so much.

Rheumatism.—Extract from letter of H. A. Spencer, M. D., Erie Pa.—I have been using the "Elixir and Solution of Iodo-Bromide of Calcium Comp." and am curing a case of Scrofulous diseases of all the glands of the neck, which have resisted all kinds of treatment heretofore adopted. I have also been pleased with the remedy in treating cases of severe Rheumatism. I believe the remedies are good, and should be used by every physician, in those cases where their use is indicated.

FOUGERA'S

COMPOUND-  IODINIZED

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Since the introduction of this Oil in 1858, it has been found to be superior to all other kinds of Cod Liver Oil, for the treatment of *General Debility, Consumption, Scrofula, Rickets, etc.*

It possesses not only all the *nourishing* qualities of the best Cod Liver Oil, but also the *tonic, stimulant and alterative* properties of *Iodine, Bromine* and *Phosphorus*, which are added in such proportions as to render it therapeutically five times as efficacious as pure Cod Liver Oil.

Through its *increased curative action*, FOUGERA'S COD LIVER OIL will be found to cure disease in a much shorter time than the pure Oil; while favorable results will be obtained by its use in many advanced cases, when the pure Cod Liver Oil would fail entirely.

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A Most Useful, Convenient and Desirable Preparation.

They are Prepared of Pure Mustard. They are always ready for use. They are not liable to change—Clean and Economical.

DIRECTIONS FOR USE.—Dip a Plaster of the required size into water at the ordinary temperature for a few seconds, then apply to the part, and cover with a bandage.

They are made of two strengths, and are sold in boxes containing ten Plasters each. Plaster No. 1, of pure mustard. Plaster No. 2, of one half mustard.

Fougera's Nutritive Preparations.

A series of new Tonic Remedies, containing LIEBIG'S EXTRACT OF MEAT, uniform in strength, each ounce containing the soluble constituents of two ounces of fresh beef. The series consists of:

NUTRITIVE WINE which contains the soluble constituents of beef, combined with pure Sherry Wine.

NUTRITIVE WINE, FERRATED, is the same as the preceding, with the addition of eight grains of ammonio-citrate of iron to each ounce.

NUTRITIVE ELIXIR OF CALISAYA. Each ounce represents fully thirty grains of the best Peruvian bark, and the soluble constituents of two ounces of fresh beef.

NUTRITIVE ELIXIR OF CALISAYA, FERRATED, contains, in addition, eight grains of pyrophosphate and ammonio-citrate of iron per ounce.

NUTRITIVE SYRUP OF IRON, contains sixteen grains of pyrophosphate and ammonio-citrate of iron, and the soluble constituents of two ounces of fresh beef.

NUTRITIVE FOOD. For invalids and convalescents. It is readily assimilated and borne by the stomach. It combines with the soluble constituents of beef all the elements which experience has proved valuable as nourishment.

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THE NEW ORLEANS

Medical and Surgical Journal,

TO ITS

Correspondents, Subscribers, Contributors, Advertisers, and Agents.

GENERAL INFORMATION.

1.—Office at No. 92 Camp Street. The publication of this, the oldest medical journal in the South-west, will be resumed July, 1873. It is to be published every two months. Each volume will contain about 1000 pages; and beginning with the July, ends with every May No. of the succeeding year.

TO CORRESPONDENTS.

2.—All business communications should be addressed to "N. O. MED. & SURG. JOUR., NEW ORLEANS, LA.," and should be legibly signed with the name in full, followed by the Post Office, County and State. If on their business, and not the Journal's, a postage stamp should be inclosed to secure a reply. A favor will be conferred by adding to letters a list of the physicians, with their Post Offices, in the county of the correspondent; also, any recent deaths and removals of physicians.

TO SUBSCRIBERS.

3.—TERMS.—$5 per annum, in advance; $1 for single copies. For 100 Extra Copies of articles, 8 pages in length, $10; every additional 100 copies $6.

4.—Money sent in letters registered "Valuable" is at the proprietor's risk, provided, that if such letter be lost, the Postmaster's receipt or certificate of the amount sent, and the date when mailed, be subject to the order of the proprietor for inspection. All payments are promptly acknowledged, by returning the receipt therefor. Payments should be made to no person representing himself as our agent, unless he is advertised in this journal as an agent, or possesses the proprietor's written authority to collect, etc. Payments made to agents should be at once reported to the Proprietor.

5.—The Proprietor is responsible to the subscribers for their numbers of the Journal, only so far as to insure their proper delivery at the post office. When, however, prompt notice is given, that the number due has not been received, a second copy of such number will be forwarded.

TO CONTRIBUTORS.

6.—Original Articles forwarded for publication should be written on one side only of each page, should be forwarded two months in advance of the number it is intended for, and must not be previously published in any other columns. Extra copies desired should be ordered with the contribution. Articles rejected are subject to the author's order. No anonymous articles will be accepted, nor any matter exclusively personal admitted, except as an advertisement.

TO ADVERTISERS.

7.—TERMS............One Page,	per annum,	$75;	for one insertion,	$15
One-half page,	do	40;	do do	10
One-quarter page.	do	25;	do do	5

No advertisement received for less than one-quarter page; nor one, on any terms, which encourages charlatanism, or tends to derogate from the honor and interest of the profession.

TO AGENTS.

8.—Booksellers, Druggists, Postmasters, and other responsible persons, will be allowed to deduct a liberal per centage for all money collected, whether from the sale of copies of this Journal, from subscription fees, or from advertisements. On application, with satisfactory references, written authority will be given the applicant to act as agent for this Journal. All agents must report promptly all payments, giving the name and address in full, the date and amount of the payment and the date *to which* receipt was given; and should furnish lists of the physicians in their own and adjacent counties.

To Book Publishers, Instrument Makers, Druggists, Etc.

Specimens of recent medical publications, instruments, drugs, etc., will receive such notice as they may merit.

PROSPECTUS.

Office NEW ORLEANS MEDICAL AND SURGICAL JOURNAL,
No. 92 Camp Street,
New Orleans, *May* 1*st*, 1873.

The undersigned have entered into an agreement to publish a Medical Journal in the city of New Orleans, to be styled "THE NEW ORLEANS MEDICAL AND SURGICAL JOURNAL." This Journal will be issued on the 1st day of every alternate month, beginning with the first day of July, 1873. Each number will contain 150 pages of reading matter. The subscription price will be Five Dollars.

The Editor assures all who are interested, that on his part every effort will be made to supply a periodical practically suited to the wants of the Medical Profession of the country; while the Publisher pledges himself to execute his part of the work with neatness and punctuality. They, therefore, respectfully appeal to the Medical Profession, and to the lovers of Science generally, to afford the enterprise a competent support,

S. M. BEMISS, M. D.
JAMES A. GRESHAM.

Subscriptions, Exchanges and Books for Review or Notice, Advertisements, and all Communications in regard to the business control of the New Orleans Medical and Surgical Journal should be addressed to the Publisher and Proprietor, JAMES A. GRESHAM,
92 Camp Street.

Contributions and Communications of any description, designed to appear in the Journal, should be addressed to the Editor,

S. M. BEMISS, M. D.,
Glass Box 2188, New Orleans.

N. B.—Neither the Editor nor the Publisher and Proprietor of the New Orleans Medical and Surgical Journal has ever had any interest or responsibility whatsoever in the financial concerns of any periodical previously published in this city.

PUBLISHER
New Orleans
Medical and Surgical
Journal.

Office of JAS. A. GRESHAM,
Bookseller and Stationer,
No. 92 CAMP STREET,

New Orleans, Novr 8 1873

Dr Billings
Asst Surgeon General
Washington D.C.

Dear Sir
I this day mail you the 3d No of the N.O. Medical & Surg Journal only a brief notice of the Book upon the Army of the U.S. appears in this No & the article in reference to the Medical Corps of the U.S. was crowded out of this issue I trust the delay will occasion you no disappointment With great respect
Your Obt Servt J A Gresham

ROBT. M. DeWITT'S MEDICAL PUBLICATIONS.

Scanzoni's Practical Treatise on the Diseases of the Sexual Organs of Women. Translated from the French of Drs. H. DORR and A. SOCIN, and annotated with the approval of the author. By A. K. GARDNER, A.M., M.D., Professor of Clinical Midwifery, &c., &c., in the New York Medical College. With numerous illustrations. In one volume, royal octavo; over 800 pages. Price $5.

It is almost unnecessary to speak of the merits of this work. Scanzoni has a world-wide reputation; on the continent of Europe he is considered as standing at the head of obstetrical science, being Professor of Midwifery in the leading College in Germany. From his great ability and well known experience it makes him the authority on this subject. The American Editor thus speaks of it:

"The editor has added more than 100 pages on practical matters, thus rendering it a compendium of the knowledge of both continents. * * * The Paris translation, of which the present is an English version, was subjected to the revision of the author. The valuable notes which the French translators have added are retained, with the initials of the writers, while those of myself are inclosed in brackets [ ], and have been incorporated in the text on account of their practical character."

Virchow's Cellular Pathology, as based upon Physiological and Pathological History. Translated from the Second Edition of the Original. By FRANK CHACE, B.A., M.A., Cantab., Licentiate of the Royal College of Physicians, &c., &c. With Notes and numerous Emendations, principally from MS. Notes of the Author, and illustrated by 144 Engravings. A handsome royal octavo volume. Price $5.

Prof. Virchow and his writings are well known wherever the science of medicine is studied. The work has been Selected by the Medical Bureau of the United States for general distribution in the hospitals and medical stations of the Army; recording, as it does, the researches in this branch of science down to the present time.

The importance of the subject, the new ideas advanced, and the well-known reputation of the Lecturer, compelled the publication of these Lectures in book form, and it is now considered the Standand Work throughout Germany on this subject.

Tyler Smith's Obstetrics. A Conise of Lectures. By WILLIAM TYLER SMITH, M.D., Physician, Accoucheur, and Lecturer on Midwifery and the Diseases of Females, in St. Mary's Hospital, Medical School, &c., &c. With numerous Illustrations. Edited by A. K. GARDNER, M.D., Fellow of the New York Academy of Medicine, &c., &c. In one volume, octavo. Price $5.

These Lectures were first published in the *London Lancet*, and after being carefully revised by the author, and with many additions, were republished in book form as one of *Churchill's Celebrated Manuals for Students*. The high character and reputation of the work caused its republication with numerous practical suggestions from the Editor. It has been received with much favor, and been adopted as a text-book in most of our medical schools and colleges.

The leading American Medical Journals speak in the highest terms, both of the original work, and of the able manner in which the Editor has done his part towards rendering it complete in every point.

Gardner on Sterility. Sterility, its Causes and Curative Treatment. With a Preliminary Statement of the Physiology of Generation. With numerous Colored and other Illustrations. By A. K. GARDNER, M.D., Fellow of the New York Academy of Medicine, and late Instructor of Obstetrics and Diseases of Females in the New York Preparatory School of Medicine, &c., &c., In one volume, octavo. Price $3,

This somewhat remarkable book has had quite a large sale; but few copies now remain in print, the plates having been recently destroyed by fire.

Copies of the above books will be sent, free of expense, on receipt of the marked price.

A Manual of the Dissection of the Human Body. By LUTHER HOLDEN, F. R. C. S., Assistant Surgeon of, and Lecturer on Anatomy at St Bartholomew's Hospital-London With Notes and Additions by ERSKINE MASON, M.D., Demonstrator of Anatomy at the College of Physicians and Surgeons, and Surgeon to Charity Hospital, New York. Price $5.

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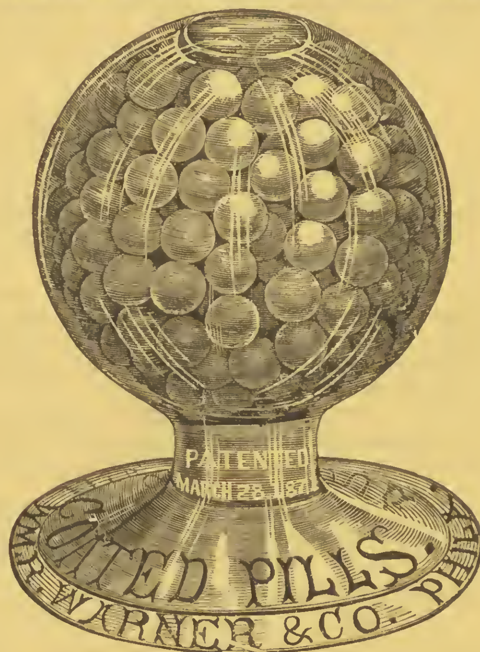

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UNIVERSITY OF PENNSYLVANIA,

Medical Department,

ONE HUNDRED AND EIGHTH SESSION,

No. 250 SOUTH NINTH STREET, PHILADELPHIA.

The Lectures of the Session of 1873-74 will commence on the First Monday, 6th of October, and close on the last day of February ensuing.

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JOSEPH CARSON, M.D , Professor of Materia Medica and Pharmacy.

ROBERT E. ROGERS, M.D., Professor of Chemistry.

JOSEPH LEIDY, M.D., Professor of Anatomy.

FRANCIS G. SMITH, M.D. Professor of Institutes of Medicine.

RICHARD A. F. PENROSE, M.D., Professor of Obstetrics and the Diseases of Women and Children.

ALFRED STILLE, M.D., Professor of Theory and Practice of Medicine, and of Clinical Medicine.

D. HAYES AGNEW, M.D., Professor of Surgery.

H. LENNOX HODGE, M.D., Demonstrator of Anatomy.

Clinical Instruction is given daily throughout the year in the Medical Hall by the Professors and Clinical Lecturers, and twice a week at the Hospitals. At the Philadelphia Hospital, and at the Pennsylvania Hospital, the instruction is free.

The Dissecting-rooms, under the superintendence of the Professor of Anatomy and the Demonstrator, are open from the first of September.

The Room for Operative Surgery and the Application of Bandages, etc., etc., is open early in September, and throughout the Session, under the supervision of the Professsor of Surgery.

Lectures are delivered by the members of the Summer Association annually during the months of April, May, and June, September, and the early part of October.

The Lectures of this Preliminary Course will this year begin on Monday, September 1, and continue until the opening of the Regular Session. These Lectures are free to all matriculates of the University, upon registering their names with the Secretary of the Association, who will furnish them with tickets.

EXPENSES.—Fees for the Course of Lectures, $140. Matriculating Fee (paid once only), $5. Graduating Fee, $30.

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University Building.

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OF THE

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NEW ORLEANS.

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Professor of Obstetrics and Diseases of Women and Children.

SAMUEL M. BEMISS, M.D.,
Professor of the Theory and Practice of Medicine and Clinical Medicine.

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T. G. RICHARDSON, M.D.,
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Professor of Materia Medica and Therapeutics, and Clinical Lecturer upon Obstetrics and Diseases of Women and Children.

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Professor of Chemistry and Clinical Medicine.

SAMUEL LOGAN, M.D.,
Professor of Anatomy and Clinical Surgery.

EDMOND SOUCHON, M.D.,
Demonstrator of Anatomy.

The next annual course of instruction in this Department (now in the fortieth year of its existence) will commence on Monday, the 17th day of November, 1873, and terminate on the third Saturday of March, 1874. Preliminary Lectures on Clinical Medicine and Surgery will be delivered in the amphitheater of the Charity Hospital, beginning on the 20th of October, without any charge to students.

The means of teaching now at the command of the Faculty are unsurpassed in the United States. Special attention is called to the opportunities presented for

CLINICAL INSTRUCTION.

The Act establishing the University of Louisiana gives the Professors of the Medical Department the use of the great Charity Hospital, as a school of practical instruction.

The Charity Hospital contains nearly 700 beds, and received, during the last year, more than six thousand patients. Its advantages for professional study are unequalled by any similar institution in this country. The Medical, Surgical and Obstetrical Wards are visited by the respective Professors in charge daily, from eight to ten o'clock A. M., at which time all the Students are expected to attend, and familiarize themselves, *at the bedside of the patients*, with the diagnosis and treatment of all forms of injury and disease.

The regular lectures at the hospital, on Clinical Medicine by Professors Bemiss and Joseph Jones, Surgery by Professors Richardson and Logan, Diseases of Women and Children by Professor Hawthorn, and Special Pathological Anatomy by Professor Chaille, will be delivered in the amphitheater on Monday, Wednesday, Thursday and Saturday, from 10 to 12 o'clock, A. M.

The Administrators of the Hospital elect, annually, *twelve resident Students*, who are maintained by the Institution.

TERMS:

For the Tickets of all the Professors	$140 00
For the Ticket of Practical Anatomy	10 00
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