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THE

NEW ORLEANS

MEDICAL AND SURGICAL JOURNAL.

JULY, 1875.

ORIGINAL COMMUNICATIONS.

AN INQUIRY INTO THE MODUS OPERANDI OF THE YELLOW FEVER POISON.

BY GEORGE M. STERNBERG, M.D.,
Assistant Surgeon and Brevet Major United States Army.

That the yellow fever poison acts primarily upon the blood, as a ferment (zymosis), is, I believe, the opinion of a majority of the profession, and is taught in the latest standard works upon medicine (Wood—Practice of Medicine, vol. i. p. 319; Reynolds—A System of Medicine, vol. i. p. 657; Ziemssen—Cyclopedia, etc., vol i. p. 505. See also Constitution and Changes of the blood in Yellow Fever, by Joseph Jones, M.D., *New Orleans Medical and Surgical Journal*, vol. ii. No. 2). That the phenomena of the disease was chiefly to be attributed to changes in the constitution of the circulating fluid, is commonly accepted as a necessary corrollary of the zymotic theory. The therapeutical indications deduced from this theory have been—the elimination of the poison by medicines acting, or supposed to act, upon the excretory organs, e. g., calomel; or its destruction in the blood by the so-called anti-zymotic medicines, e. g., quinine, the hyposulphites.

The success heretofore attained, in endeavoring to carry out these therapeutical indications, has certainly never been sufficiently apparent to give much support to the theory. Indeed,

it is generally admitted that we have no specific for yellow fever. Theories are only useful in so far as they furnish us useful indications as to prophylaxis or therapeutics.

This being admitted, it seems to me worth while to call to mind the fact that the theory of zymosis (my remarks are not to be taken as general, but only as applying to the disease under consideration) rests upon no substantial basis of chemical or physical demonstration, and is, in fact, but a theory. Any other hypothesis, therefore, which will as well or better explain the phenomena of the disease, is worthy of attention. It is certainly desirable that new elements for thought and new therapeutic possibilities be pointed out from time to time. The restless search after truth which prevails at the present day to so great an extent, in all branches of scientific investigations, is not to be restrained either by age, tradition, or authority. I desire however, to have what I shall say taken as suggestive, and not as advocating a theory at variance with the teachings of the great medical authorities of the day.

The proposition I make and propose briefly to discuss, is, that certain well known physiological investigations to which I shall call attention, considered in connection with the clinical history of yellow fever and its known pathology, tend strongly to give color to an hypothesis radically different from that commonly taught, viz., *that the first and essential effect of the yellow fever poison is to produce a disturbance of the functions of the sympathetic nervous system, and that the grave changes in the blood which occur in the course of the disease are secondary in their nature, and result from the arrest of vital processes* (nutrition, excretion, secretion) *presided over by the sympathetic.*

The elaborate and careful investigations of Prof. Joseph Jones (*New Orleans Medical and Surgical Journal*, No. 2. Vol. II) have demonstrated, that during the course of the disease, blood changes occur which may account for some of the symptoms characterizing its later stages. But I am not aware that any one claims to have discovered prior to the invasion, or at the very outset of the disease, changes in the blood which might be supposed to account for the pronounced and rapidly developed symptoms inaugurating an attack of yellow fever.

In a majority of the cases there are no prodromata to give warning of the profound disturbances of circulation, secretion and excretion, which so quickly take place. "The attack is

sometimes preceded by the usual preliminary symptoms of fever, but perhaps quite as frequently comes on abruptly, in the midst of ordinary health. It is said to occur very frequently in the night." (Wood—Practice of Medicine, vol. i. p. 307.)

This sudden invasion is in itself a strong argument against the supposition that the blood is primarily affected. The action of ferments out of the body and of blood poisons demonstrated to be such, is up to a certain point progressive. It may be claimed that the yellow fever poison, acting as a ferment in the blood, causes the formation of some substance the action of which upon the sympathetic nervous system, gives rise to the phenomena of the disease. But this is a gratuitous assumption, and if the symptoms and post mortem appearances can be as well explained upon the hypothesis of the direct action of the poison, this seems to me the more philosophical view, in the absence of all proof, chemical or physical, of blood changes occurring prior to the sudden development of the symptoms inaugurating the disease.

Prof. Jones says (loc. cit., p. 178): "*The changes of the blood appear to be continuous, from the time of the introduction of the poison till the fatal termination*; these changes being increased, and their character being modified, as the disease advances, *not only by the direct action upon the constituents of the blood by the poison*," (italics my own,) "but also by the addition of certain noxious substances, as bile, urea, carbonate of ammonia, sulphates and phosphates, and extractive matters."

How, I would ask, does the Professor arrive at the conclusion stated in the first of the italicized passages in the foregoing quotation? The period of incubation is variable, and all admit that a number of days may elapse after the introduction of the poison before the symptoms of the disease manifest themselves. What evidence then can the Professor have that a continuous change has been going on in the blood while the individual remains in his usual health? This seems to me to be an assumption made necessary by the previous adoption of a theory (the zymotic), but unsustained by observations.

The second italicized paragraph also contains a statement which may, or may not be true. The Professor's laborious investigations certainly do not, so far as I can see, establish the truth of this proposition. He has shown certain blood changes, which if they can not be accounted for in any other way, may be assumed to result from the direct action of the poison upon the

blood. While I am not prepared to deny the probability of this direct action, I consider the question still sub judice, and shall endeavor to point out another possibility in this case. But even admitting this direct action of the poison upon the blood, it does not follow that it acts as a ferment, or that the blood poisoning is the chief factor in the production of the phenomena of the disease. These phenomena we shall endeavor to show may be satisfactorily accounted for upon a different hypothesis. There are certain facts, to which I shall after a time call attention, which lead me to think that "while liability to the disease, and its severity when contracted, depend to a certain extent upon age, sex, temperament, previous habits and acclimation, they also depend to a great extent upon the degree of concentration of the poison—that is to say, the larger the dose the greater the probability of an attack and the greater its severity." (Vide article on "The Nature of the Yellow Fever Poison," *Am. Journal of the Medical Sciences*, No. 130, p. 399, by the present writer.)

If the poison acted as a ferment in the blood, and was capable of self-multiplication during the fermentative process (as is the yeast plant), a minute quantity should be as effectual in producing a severe attack of the disease as a larger dose. In this case it would be difficult to account for the great difference in the severity of the attack among individuals apparently on an equality as to age, previous health and susceptibility. During every epidemic it is noticeable that the disease is especially fatal in certain localities. This is probably due to local conditions favorable to the multiplication of the poison; and if so, the severe effects are to be ascribed to the large and concentrated doses taken. Finally, we have convincing evidence that "*the poison is capable of self-multiplication externally to the human body*" (loc. cit.); or in other words, that it is a "contagium vivum." But Prof. Jones says (loc. cit.): "No vegetable or animal forms were discovered in the blood even with the highest powers of the microscope." It is true that this is negative evidence; and the yellow fever germ may yet be demonstrated in the blood of those sick with the disease, as has been done in relapsing fever. (Vide Ziemssen's Cyclopedia, etc. vol. i. p. 241.) But it is possible that we must look elsewhere for it. There certainly are other possibilities in the case, as we shall hereafter point out (loc. cit).

Prof. Jones gives a summary of the results obtained by him as

to the alteration of the blood in yellow fever, under nine heads, which summary we shall quote and comment upon.

"1st. Such an alteration of the chemical and physical properties of the fibrin and albumen as leads to a transudation of the latter through the excreting structures of the kidney."

The supposition that the transudation of the albumen of the blood through the excreting structure of the kidney, is due to a change in the chemical or physical properties of the albumen, rather than to capillary congestion or some other cause interfering with the normal functional activity of the organs, will require strong proof before it can receive general assent. Niemeyer, in speaking of hyperæmia of the kidneys, gives a very different explanation of the presence of albumen in the urine—"A very different train of symptoms follows upon a moderate degree of obstructive engorgement of the kidney. Since, as we have just shown, in almost every case of obstruction of the renal veins the degree of tension within its arteries is very small, there is a diminution instead of an increase of the secretion of urine. On the other hand, the strain upon the capillaries becomes exceedingly severe, since they can not discharge their contents into the already overloaded veins until the pressure within them exceeds that within the veins. Hence, not only does plasma of the blood readily escape from the capillaries into the urinary tubules, so that the scanty, concentrated, dark-colored urine contains albumen, and the so-called fibrinous casts (or, more properly speaking, exudation casts), but the delicate walls of the capillaries give way before the strain, so that the urine is full of blood corpuscles." (Niemeyer, Vol. II, p. 11.)

"2d. Various degrees of alteration and diminution of the fibrinous element. In some cases there is an almost entire disappearance of the fibrinous element. This disappearance of the fibrinous element appears to be due not so much to the action of ammonia, which is so often present in abnormal amount in the blood of yellow fever, *but to the direct action upon this element of the febrile poison*" (italics my own).

I find nowhere in Prof. Jones' article any proof that the disappearance of the fibrinous element in the blood is due to the direct action of the poison. The origin of albumen and fibrin in the blood is thus stated by Flint (Physiology, Vol. Blood, etc.):

"The fibrin of the blood has its direct origin, in part at least, from albumen, by the catalytic transformation which so often takes place in principles of this class" (p. 80).

"The albumen of the blood has its origin from a catalytic

transformation of the products of digestion, of the albuminoid elements of the food" (p. 85).

During an attack of yellow fever no food is taken, and albumen escapes by the kidneys. May not these facts have something to do with the gradual diminution of the fibrin?

"3d. Whilst the colored blood corpuscles are very slightly diminished in yellow fever, they present under the microscope certain peculiar appearances, which appear to be referable to the action of certain extraneous matters in the blood."

"4th. Increase of the extractive matters of the blood."

"5th. Increase of the fatty matters."

"6th. Accumulation of bile in the blood, in consequence of the profound lesions of the liver induced by the febrile poison, and in consequence of the failure of the excretory function of the kidneys. Many of the changes of the blood, as well as certain cerebral symptoms, may be dependent upon the presence and action of the biliary constituents." * *

"7th. Accumulation of the urinary constituents, and especially of the urea and phosphoric acid, sulphuric acid, chloride of sodium, and carbonate of ammonia, in the blood, consequent upon the profound lesions induced by the febrile poison and its products upon the kidneys."

"8th. Rapid dissolution of the colored blood corpuscles after the blood is abstracted from the body, either during life or after death. The rapid alteration of the investing membrane." (Vide Flint's Physiology, Vol. Blood, p. 116.) "Of the colored blood corpuscles, in the blood of yellow fever, after the abstraction of the blood from the vessels, appears to be immediately related to, if not dependent upon, the physical and chemical action of the biliary and urinary constituents retained in the blood."

"9th. Rapid putrefaction of the blood of yellow fever, after its abstraction from the living body, or from the large vessels after death."

That several of the above enumerated changes in the blood are secondary in their nature, and dependent upon arrest of the excretory function of the liver and kidneys, is set forth by Prof. Jones in the above summary, and is demonstrated quite conclusively in a subsequent portion of his paper. So far as I can see, none of them require for their explanation a process of zymosis, or fermentation in the blood, or even the direct action of any poison other than those which in a state of health are constantly being removed by the excretory organs.

Prof. Jones' observations, so far as is shown by his paper, have been made upon the blood found in the veins of yellow fever patients after death. We are not likely to find any recent observations on the appearance of the blood at the outset of the

attack, as no one now thinks of abstracting it as a remedial measure. I find, however, in Wood (Practice of Medicine, Vol. I, p. 312), the following: "The blood drawn during the progress of the disease is almost always coagulable, and sometimes sizy." The fibrinous element must therefore be present at this time. It has also been noticed that the blood when drawn at the very outset of an attack of yellow fever "*is of a bright scarlet color.*" (Reynolds loc. cit., Vol. I. p. 665.) A similar change in color is seen after division of the sympathetic nerve in the neck of a warm blooded animal.

"It has also been observed in experiments on the horse, that the blood coming from the part is *red*" (after division of the sympathetic in the neck), "and contains very much more oxygen than ordinary venous blood." (Flint's Physiology, Vol. Secretion, etc., p. 430.)

That the specific poison which produces yellow fever is a "*contagium vivum*," which under favorable conditions *is capable of self-multiplication independently of the human body*, is now considered probable by many recent authorities. (Reynolds—A System of Medicine, Vol. I, p. 658; Ziemssen loc. cit., Vol. I, p. 493. See also article by the present writer in the *American Journal of the Medical Sciences*, for April, 1873.) That it is a vegetable fungus is a supposition which has in its favor many facts pertaining to the origin, spread, and termination of epidemics. Such facts are—the acknowledged necessity of a certain elevation of temperature for the increase of the poison, and its immediate destruction by frost; its being indigenous (endemic) only in latitudes where frost does not prevail, and appearing in colder climates when introduced during the season most favorable for vegetable growth; its altitudinal range being limited, and its habitat mainly on the sea-board; its germs remaining quiescent during the winter season, and (when not exposed to a freezing temperature) resuming their activity (i. e., reproductive power) when the season favorable to vegetable growth returns.

Dr. H. C. Wood, in his recent work on Therapeutics (p. 458), gives a concise description of the fungi as follows:

"Among the lowest vegetable organisms, and distinguished from all other plants by the absence of chlorophyll, are the fungi. There are in most cases two distinct states or stages in the life of a fungus. In the first of these, the vegetative period, it exists as a *mycelium*, a usually filamentous mass or flocculous, whose sole function is to grow or increase. In the second stage the thallus, or ordinary fungus or mushroom,

is formed; to it is assigned the function of developing reproductive bodies, after whose formation it perishes. Between these stages there is in some fungi an intermediate one, in which the plant exists as a sclerotium."

The poisonous action of certain of the larger fungi (e. g., ergot, poisonous mushrooms), has long been known. That various destructive diseases to which field crops are subject (e. g., smut in wheat), are due to minute fungi is now known to every intelligent farmer. But the two greatest achievements of modern microscopical science are still so recent as not to be so generally known. These are—the demonstration, by Lebert, of the *panhystophyton*, as a cause of the destructive silk-worm disease in France (Ziemssen loc. cit., Vol. I, p. 238), and the discovery, by Obermeier, of spiral *protomycites* in the blood of relapsing fever patients (loc. cit., p. 263).

I am aware that I have ventured upon difficult ground, and am not so vain as to think that I shall succeed in elucidating the modus operandi of the minute and deadly yellow fever fungus (assuming its existence); but I hope to point out certain possibilities which I believe to be worthy of consideration, and possibly to assist in turning the attention of investigators in a new direction, and the thoughts of those who think for themselves in a new channel, and which, I believe, can not well be followed without producing more profitable results than have heretofore been attained in the earnest and laborious efforts made to find atmospheric or telluric influences (the presence or absence of ozone, moisture, decomposing organic matters, etc.), competent by themselves to account for the phenomena of epidemics.

We are met at the outset of our investigation by the fact that after a person is exposed to the influence of the yellow fever germs, a variable period elapses, stated by LaRoche as from twelve hours to several months (LaRoche—Yellow Fever, etc., Vol. I, p. 511), before the characteristic symptoms of the disease are developed. To account for this variable period of incubation, if the poison acts as a ferment, is exceedingly difficult. The so-called zymotic diseases may be divided into two groups, in one of which there is a fixed and definite period of incubation (e. g. small-pox, measles), in the other an exceedingly variable and indefinite period (e. g., cholera, yellow fever). It may be that upon fuller investigation, it will be found that this fact of a definite or indefinite period of incubation, will prove to be a

characteristic by which we can distinguish between fevers that are truly zymotic and those which are not. In cholera, it is very generally believed that the germs of the disease may remain in the alimentary canal for a considerable time without giving rise to an attack of cholera, and that from time to time the individual may sow cholera seed, by means of his excretions, without giving any evidence of the deadly freight he carries, until such time as circumstances favorable to the rapid development of the germs, or to their poisonous effects being manifested, occur, when the attack takes place.

Dr. Woodhull (A. A Woodhull, Assistant Surgeon U. S. A.—Clinical Studies, with Non-emetic Doses of Ipecacuanha, *Atlantic Medical and Surgical Journal*) has recently suggested for the cholera poison a similar modus operandi to that which I deem probable in yellow fever, and has supported his view by evidence, anatomical, physiological and therapeutical, of a most convincing nature.

But, confining our attention to yellow fever, how shall we account for the variable period of incubation? In the light of our knowledge of the mode of growth of the minute fungi, the following seems to me to be the probable explanation. Yellow fever germs being introduced, and conditions as to heat, moisture, etc., being favorable to their multiplication, a locality becomes, as we say, infected. A person susceptible to the disease coming to this infected locality, may inhale a sufficient dose of the spores, or germs, to cause a speedy development of the symptoms of poisoning; and these symptoms are more or less pronounced, according as the dose has been large or small—subject, of course, to individual susceptibility. The development of the symptoms of poisoning is not immediate, but takes place within a few hours, or possibly within a day or two. Flint says: "The effects of stimulation or irritation of this system" (the sympathetic) "are not instantaneously manifested, as is the case in the cerebro-spinal system, but are developed slowly and gradually." (Physiology, Vol. Blood, etc., p. 239.)

This interval is also seen in poisoning by the known fungi. Taylor (Medical Jurisprudence, p. 184) says, in speaking of poisoning by mushrooms: "Several cases in which the poisoning did not appear for fourteen hours, are reported in the *Medical Gazette* (Vol. XXV, p. 210). In some instances, the symptoms

of poisoning have not commenced until thirty hours after the meal."

There seem to be but two channels through which the poison can be supposed to enter the system. *First;* germs floating in the air would enter the lungs during inspiration, or might be deposited upon the mucous membrane of the mouth and nares, and from there be carried into the stomach with the saliva, food, or drink. *Second;* articles of food or drink may convey directly to the stomach, germs which have developed in or been deposited upon them. Whether the poison acts directly upon the ganglionic centres, being conveyed to them by the blood; or indirectly, through an impression first made upon some area in the peripheral distribution of the sympathetic, it is at present impossible to determine. The latter seems to me, however, to be the most plausible hypothesis, and from various circumstances I deem it probable that this area will be found to be the mucous membrane of the alimentary canal, or some portion thereof. In cases where the period of incubation is more prolonged, we may suppose that a sufficient quantity of the poison has not been taken into the system to act immediately, but that the spores locate themselves in some favorable situation--probably some portion of the mucous membrane of the alimentary canal, or possibly in the lungs, where oxygen, heat and moisture, would furnish the essentials for vegetable growth—and there go through with the vegetative process, viz., the formations of a mycelium, and in time of thalli, which when mature give birth to innumerable spores, which speedily produce their characteristic poisonous effects.

In those cases, comparatively few in number, in which the period of incubation is apparently very much prolonged, I think we must seek a different explanation, and this is readily found in the well known fact that germs may be conveyed from an infected locality—in the clothing, or upon the person—which, retaining their vitality, when favorable conditions present go through the vegetative process exterior to the human body, and increase in number to such an extent as finally to enter the system in sufficient quantity for the production of their poisonous effects.

We have next to inquire as to the rationale of the protection resulting from an attack of the disease, and to a certain extent of what is commonly spoken of as acclimation. This tolerance

to the poison has its analogy in the tolerance which may be acquired to the effects of certain well known vegetable poisons, e. g., the alkaloids of tobacco and opium. The protection afforded by an attack of yellow fever is not absolute, and many well authenticated instances of second or even third attacks are to be found.

Acclimation is probably the tolerance acquired by the repeated introduction of small quantities of the poison into the system. It is not, however, generally protective, when the person supposed to be acclimated is subjected to the influence of large and concentrated doses, such as must be taken by every one during the prevalence of a severe epidemic. That residence in a southern climate does not in itself constitute acclimation or give protection, is shown by the fact that persons residing in the interior, but in the same latitude, are quite liable to take the disease upon visiting a seaport town where it is prevailing.*

I shall now proceed to take up seriatim the phenomena, clinical and pathological, which characterize the disease under consideration, and to inquire whether the theory of zymosis is necessary for their explanation.

In pursuing this inquiry, I shall quote extensively from standard authors, and shall bring in juxtaposition, facts, observations and experiments—anatomical, physiological, clinical and therapeutical—which in my judgment have a bearing upon the subject under consideration. To a great extent I shall leave the reader to judge ot the value and pertinence of my quotations, as a complete discussion of the subject would extend this paper to too great a length.

An attack of yellow fever is inaugurated as follows:

"While apparently in the most perfect health, while walking, while at work, or asleep, men will be attacked with SLIGHT CHILLS alternating with heat, OR, in fact, most frequently with a SEVERE RIGOR." (Ziemssen, loc. cit., Vol. I, p. 497.)

These symptoms are recognized as common to many diseases, and may result from a local injury or inflammation, or even from the presence of parasites (lumbricoid worms), or undigested food in the alimentary canal. We have therefore no reason for supposing a previous blood-poisoning necessary for their production.

"The TEMPERATURE is markedly elevated, and often reaches

* See Bennett Dowler, Tableau of the Yellow Fever of 1853, etc., p. 36.

102.5° Fahr. within a few hours after the beginning of the attack" (loc. cit., p. 497).

My own observations have shown a temperature of 105° and above, at the outset of the attack. (See *American Journal of the Medical Sciences*, for July, 1875—forthcoming number.) The following examples of variations from the normal temperature, produced by the action of well known vegetable products, are cited.

"In moderate doses, atropia causes a pronounced rise in temperature, but in very large decidedly toxic amounts, it lessens animal heat. Thus, in the dog, Meuriot has obtained an augmentation of from 1° to 3° C., and Dumeril, Demarquay, and Lecompt, of 4° C. * * * Harley has seen in man an elevation of 1° Fahr. * * * In full medicinal doses it produces a sort of febrile state, with dryness of the mouth, increased rapidity and force of the circulation, quickened respiration, elevation of temperature, and secretion of febrile urine." (H. C. Wood—Therapeutics, etc., p. 217.)

"It is very certain that toxic doses of digitalis lower the temperature in men and animals a number of degrees." (H. C. Wood, loc. cit., p. 122.)*

In this connection, the familiar experiment of dividing the sympathetic nerve in the neck has a place.

"It is well known that when the sympathetic nerves going to a particular part are divided, the arterial coats are paralyzed and dilated, the supply of blood is increased, nutrition is exaggerated and more or less modified, and the temperature of that particular part is increased by from five to ten degrees. An illustration of these facts in the ear of the rabbit after division of the sympathetic in the neck, is a very common observation, which we have often verified in public demonstrations. All of these unnatural phenomena disappear on galvanizing the divided extremity of the nerve. These local modifications in the temperature have been frequently observed pathologically in the human subject." (Flint's Physiology, Vol. Secretion, etc., p. 416.)

"*The countenance is decidedly flushed, the conjunctiva much injected.*" (Ziemssen, loc. cit., Vol. I, p. 497. See also Wood's Practice, Vol. I, p. 310.)

"In 1816, Dupuy removed the superior cervical ganglia in horses, with the effect of producing injection of the conjunctiva, increase of temperature in the ear, and abundant secretion of sweat upon one side of the head and neck." (Flint's Physiology, Vol. Nervous System, p. 431. See also Dalton's Physiology, p. 505.)

* See also Wood, loc. cit., p. 459 (Ergot); The Practioner, Vol VI, No. 2, p. 80—Reduction of Temperature by Physostigma Venenosum; New Remedies, Vol. III, No. 1, p. 8—Elevation of Temperature by Theine, Caffeine, etc.

In poisoning by atropia, "a peculiar bright red flush appears on the face and neck." (H. C. Wood, loc. cit., p. 207.)

In "a note on the paralyzing action of aconite on the sympathetic nerve," by Dr. Bagshawe (Braithwaite, Part 68, p. 61), the following summary statement is made.

"These and similar cases point to the fact that aconite applied to the skin in the neighborhood of the cervical ganglia and branches of the sympathetic, produces consequences similar to those brought about by section of the nerve in that situation in animals. In both cases a swollen and congested state of the conjunctival vessels, and abnormal warmth of the part, is the result."

"Fiery redness, with prominence of the eyes," is put down among the unfavorable prognostics in yellow fever. (Reynolds, loc. cit., Vol I, p 674.)

"The EYE HAS a peculiar lustre and A STARING LOOK." (Ziemssen, loc. cit., same page.)

I have no notes upon the pupil, and find no reference to it in the standard authors I have at hand. My recollection is, however, that it is at first slightly dilated and afterwards contracted. In a case of gun shot wound of the neck involving the sympathetic, reported by Mitchell.

"Among the phenomena observed, a few weeks after, were contraction of the pupil on the side of the injury * * * * * * *. Dr. Bartholow has reported several cases of unilateral sweating of the head, two observed by himself, in several of which there was probably compression of the sympathetic from aneurism. In those cases in which the condition of the eye was observed, the pupil was found contracted in some and dilated in others. * * * In a series of observations by Wagner, upon the head of a woman eighteen minutes after decapitation, powerful galvanization of the sympathetic produced great enlargement of the pupil." (Flint's Physiology, Vol. Nervous System, pp. 440, 441.)

"Division of the sympathetic nerve in the middle of the neck has also a very singular effect upon the muscular apparatus of the eye. Within a very few seconds after the above operation has been performed upon the cat, the pupil of the corresponding eye becomes strongly contracted, and remains in that condition." (Dalton—Human Physiology, p. 506.)

Dr. Bagshawe states in the article already cited, that in aconite poisoning the pupils are dilated. In an appended note by Dr. Anstie, a case is given in which the pupil was contracted.

"In conclusion, the action of atropia applied to the eye may be summed up as follows: the mydriasis is the result of a direct influence upon the peripheral nerve-fibres, those of the oculo-

motor being certainly paralyzed—those of the sympathetic, and its ally the trigeminus, being probably excited. (H. C. Wood, loc. cit., p. 221.)

"But the nervous symptoms are probably those from which the patient suffers most. There is almost always HEADACHE, generally in the forehead and eyes * * * the PAINS IN THE BACK AND LIMBS also, which often usher in the disease, continue after the fever has been fully formed, and are sometimes insupportably severe." (Wood's Practice, Vol. I, p. 307.)

"Passing to the researches of the more recent observers, we find that Flourens noted evidences of pain on pinching the semilunar ganglia in rabbits. * * In dogs, Longet noted distinct evidences of sensibility following irritation of the semilunar ganglia in the cervical and in the lumbar region, taking all precautions to avoid irritating the cerebro-spinal filaments." (Flint's Physiology, Vol. Nervous System, p. 427.)

"Sympathetic headache is exceedingly common, and associated with a great number of diseases. * * * As the direct result of vascular irritation of the brain, it is one of the most common symptoms of all febrile diseases." (Wood's Practice, Vol II, p. 680.)

"The RESPIRATION is very superficial, and much quickened." (Ziemssen, loc. cit., same page.)

"Small doses of atropia do not affect the respiration, whereas large doses accelerate it." (H. C. Wood, loc. cit., p. 216.)

"The PULSE is generally full and frequent." (Ziemssen, loc. cit., same page.)

"Often from the first—certainly after a short time in all cases—the heart's beats, after a large dose of the alkaloid" (atropia) "become excessively rapid, the pulse rising to 120, or even 160." (H. C. Wood, loc. cit., p. 207.)

"From what has been said, it is evident that the increase of the pulse seen in atropia-poisoning is in a measure due to paralysis of the cardiac inhibitory nerves, but that this is not the only cause, is shown, etc." (loc. cit.)

"A line *descending from the beginning* indicates it" (the pulse) "in all the cases * * *. We think that this diminution of the pulse while the temperature often goes on rising, can be explained only by attributing it to a *special action* of the fever producing principle itself upon the central organ of the circulation—*the heart.* * * * When, after having administered a sufficient dose of veratrum, or digitalis, we find that the number of the beats of the heart per minute constantly decreases, do we not conclude that these two poisons have the property of slackening the movements, or of reducing the number of beats of the heart per minute? The analogy is complete—the conclusion equally as legitimate on the one side as on the other." (Faget—Type and Specificity of Yellow Fever, pp. 25-34-35.)

"Digitalis in moderate doses stimulates the musculo-motor

portion of the heart—probably its contained gangha—increases the activity of the inhibitor apparatus, and causes contraction of the arterioles." (loc. cit., p. 121.)

"Viewing all these facts together, I am forced to give assent to the proposition that atropia, in not too large amounts, is a stimulant to the vaso-motor centres * * *. All observers agree that in the advanced stage of atropia poisoning, after the blood pressure has commenced to fall, there is dilatation of the capillaries." (loc. cit., p. 211.)

"The TONGUE is thickly covered with a whitish, often yellowish coat, *red on the edges, and marked with the impression of the teeth.*" (Ziemssen, loc. cit., p. 497.)

"It is only when the febrile reaction is taking place, or even some time after this has begun, that the tongue in general assumes its characteristic white coating, with red tip and edges." (Reynolds—A System of Medicine, Vol. I, p. 664.)

"*The mucous membrane of the soft and hard palate becomes of a bright red color*, soon followed by marked œdema of those parts." (Ziemssen, loc. cit., p. 497.)

"When the smallest physiological dose of atropia is administered to man, the only symptom induced is dryness of the throat and mouth, and possibly some disorder of vision. When a little larger amount is given, this dryness is more intense, and is associated with *redness of the fauces*, etc." (H. C. Wood, loc. cit., p. 207.)

"The EPIGASTRIUM *is extremely sensitive to pressure*, and painful even when it is not touched." (Ziemssen, loc. cit., p. 457.)

"It is very easy to observe the effects of dividing the sympathetic in the neck, but analagous phenomena have been noted in other parts. Among the most striking of these experiments are those reported by Samuel, who noted *an intense hyperæmia of the mucous membrane of the stomach and intestines following extirpation of the cœliac plexus.*" (Flint's Physiology, Vol. Nervous System, p. 433.)

In yellow fever, "the muscular and peritoneal coats" (of the stomach) "are usually sound; but the mucous coat is generally partially or universally reddened, sometimes thickened and softened, and sometimes, though rarely, eroded." (Wood's Practice, Vol. I, p. 313.)

In a case of poisoning by belladonna, reported by J. L. Molyneux, in the *London Lancet*, January, 1870, p. 60, the post mortem appearance of the stomach is given as follows: "The stomach presented externally slight discoloration, which corresponded to deep red colored patches internally; *its coats were much softened*, and easily torn."

"*All articles of food and drink introduced into the stomach are immediately vomited.*" (loc. cit., p. 498.)

"Irritation of some of the sympathetic nerves, particularly the

abdominal ganglia, will produce vomiting." (Flint's Physiology, Vol. Alimentation, etc., p. 306.)

It is generally agreed, that among the most successful therapeutic measures for the relief of vomiting and epigastric distress, are the frequent swallowing of small bits of ice and the application of sinapisms to the epigastrium. These remedies doubtless act through the nervous system, the ice producing contraction of the engorged capillaries by its direct stimulating action upon the paralyzed vaso-motor nerves—the sinapism producing the same effect by reflex action.

"The BOWELS are generally constipated—more rarely diarrhœa is present." (loc. cit., p. 498.)

The deficient flow of bile, together with arrest of secretion from the intestinal mucous membrane, accounts for the constipation.

"The URINARY SECRETION *is generally diminished in quantity from the outset of the malady, and in many instances becomes almost or altogether suppressed*, when the symptoms of uræmic poisoning may be developed." (Reynolds, loc. cit., Vol. I., p. 669.)

"Bernard, in following out his ideas with regard to the mechanism of secretion, supposes that there are certain nerves derived from the sympathetic system, the galvanization of which will arrest the flow of urine * * *. He has divided the sympathetic nerves that penetrate with the blood-vessels at the hilum, and galvanized them, producing an arrest of secretion during the entire period of the galvanization." (Flint's Physiology, Vol. Secretion, etc., p. 174.)

"In some recent experiments by Peyrani, it has been shown that the sympathetic has a remarkable influence over the secretion of urine. When the nerves are galvanized in the neck, the amount of urine and urea is increased, * *. When the sympathetic is divided, the quantity of urine and urea sinks to the minimum." (loc. cit., Vol. Nervous System, p. 434.)

"Poisonous doses of belladonna are said to provoke frequent micturition; but this could hardly have been possible in this case" (poisoning by three grains of atropia), "as I drew off fourteen ounces of urine ten hours after the taking of the drug, and more was found in the bladder after death. Retention of urine had possibly occurred (?) along with the suppression of the secretion from congestion of the kidneys." (Gross—*American Journal of the Medical Sciences*, No. 116, p. 405.)

"FEBRILE REACTION may continue for an indefinite period between a few hours and two or three days." (loc. cit.)

That the first or febrile stage of yellow fever has a definite duration, is shown by the writer in a paper "On the Nature and Duration of Yellow Fever, as shown by graphic Temperature Charts of Typical Cases," which will appear in the forthcoming

number of the *American Journal of the Medical Sciences* (July number).

"Should the SKIN have assumed its lemon yellow tint, it will remain all through the convalescence." (Reynolds, loc. cit., Vol. I, p. 661.)

"Inasmuch as yellowness of the skin or conjunctivæ, not merely from jaundice, but from the effusion of the hæmatine of the blood itself, as in yellow fever, sometimes occurs in the paludal remittent fevers of various countries, that character singly can not be pathognomic of yellow fever." (loc. cit., p. 662.)

"I have confirmed, by careful chemical analysis of the blood, and of the nervous structure and organs, the view held by some pathologists, that the yellow hue in jaundice, observed in many grave cases of yellow fever, is due to the presence of bile in the blood." (Jones, loc. cit., p. 197.)

"It is highly probable that the greenish-yellow hue is often due to the presence of bile. But, as I believe was first suggested by Warren, and subsequently by Sir G. Blane and others, the lemon yellow and orange tints are unquestionably owing to the solution and effusion of the coloring matter of the blood." (Reynolds, loc. cit., Vol. I, p. 664.)

"It is evident that certain changes in the blood, as well as certain nervous symptoms in yellow fever, are due to the retention of bile in the blood." (Jones, loc cit., p. 195.)

"According to this accurate observer" (Daniel Blair), "yellowness of the skin was always a sign of great intensity of the disease. Among the 2071 milder and graver cases, 385 had yellow skin, and of these, 178 died. Thus the proportion of cases in which the symptom appeared was 18.54 per cent." (loc. cit.)

"Frequent HÆMORRHAGES from the nose occur, and in rare cases from the stomach, too; the latter are wholly wanting in the slighter attacks—they often occur first at a later stage." (Ziemssen, loc. cit., Vol. I, p. 498.)

These hæmorrhages I believe to be mainly due to dilatation of the capillaries, and consequent weakening of their walls, and to loss by the mucous membrane of its epithelium. These hæmorrhages are commonly ascribed to physical changes in the character of the circulating fluid. I, however, find it difficult to believe that leakage could occur if the integrity of the capillaries were preserved, and the blood pressure normal. I imagine that the fluid blood from the veins of a yellow fever patient could be passed through the capillaries of a healthy stomach without any leakage occurring. A decrease in the amount of the fibrinous element of the blood would account for a continuance of hæmorrhage, if the capillaries were once ruptured, as the natural mode of arrest (by coagulation) would be interfered

with; but unless the capillaries were weakened or ruptured, hæmorrhage could not well occcur.

"The effect of absence or great diminution of the coagulability of the circulating fluid is exemplified in instances of what is called the hæmorrhagic diathesis—a condition in which slight wounds are apt to be followed by alarming, and it may be, fatal hæmorrhage. *This condition of the blood is not characterized by any symptoms excepting the obstinate flow of blood from slight wounds.*" (Flint's Physiology, Vol. Blood, etc., p. 153.)

I have now passed in review the essential symptoms of the first stage of yellow fever. A certain proportion of the cases present additional symptoms, to which I shall briefly allude.

Delirium, at the outset, probably results from hyperæmia of the brain or its membranes—later it is the result of toxæmia.

"It is evident that in many cases of yellow fever, the fatal issue is determined chiefly by the retention in the blood of the constituents of the urine. To this cause must be attributed, to a great extent, the restlessness, nervous agitation, intoxication, delirium, convulsions, and coma, characterizing the stage of calm or depression in many cases of yellow fever." (Jones, loc. cit., p. 193.)

BLACK VOMIT is not an essential of the disease, and is often absent in fatal cases.

It has, however, always attracted the especial attention of investigators, and very different views have been entertained as to its nature. The following quotation from the article on yellow fever, by MacDonald, in Reynolds (loc. cit.), is probably nearly correct as to the mode of its formation.

"When hæmorrhagic oozing begins to take place from the congested lining membrane of the stomach, the blood *ab initio* intermixes with the existing and concomitant acescent secretions of the organ. The blood globules aggregated in masses lose their colored contents by exosmosis, while they become distended with a thinner fluid, and blend together with a common connecting and finely granular substance, composed of coagulated albumen and the liberated hæmato-globulin. Dark madder-brown flocculi thus result, floating in a more or less homogeneously-tinted or colorless liquid, and this is probably the simplest definition of black vomit." (Vol. I, p. 668.)

"Hæmorrhages into the stomach, which occasion black vomiting, have been in former times regarded as the essential feature of the whole disease, and even now, in the tropics, we often hear it called from this symptom "black vomit." The efforts to discover something characteristic in the vomited matter have been fruitless. Under the microscope only blood corpuscles, epithelial cells, fat globules, muscular fibres, and other remnants of food,

sarcina ventriculi, and various crystals, have been ascertained to be present." (Ziemssen, loc. cit., Vol. I, p. 500.)

In mild cases of yellow fever, but a short interval occurs after the subsidence of the fever before reaction takes place, and the reactionary fever is often so slight as to escape notice. (See *American Journal of the Medical Sciences* for July, '75, Art. VIII, Chart 1.) In severe cases the stage of calm is more prolonged, and reaction when it occurs is marked by a pronounced rise in the temperature, which lasts often for a week, or longer, and is characterized by morning remissions and evening exacerbations. (Vide *American Journal*, etc, number and article cited, Chart 2.)

The, so-called, STAGE OF CALM is in reality a condition of more or less profound collapse, resulting, perhaps, to some extent from the blood changes which have already taken place, but probably depending mainly upon the continued paralysis, more or less complete, of the sympathetic, and consequent arrest or depression of vital processes over which it presides.

The symptoms of the REACTIONARY STAGE require no special explanation, as they are fully accounted for by the grave blood and tissue changes which have previously occurred. The violence and duration of the reactionary fever is directly proportioned to the duration and severity of the symptoms characterizing the preceding stages. (Vide typical temperature charts, loc. cit.)

Some of the main points relating to the PATHOLOGY of the disease have already received attention in reviewing the symptoms, viz., the changes in the blood, the capillary congestion and softening of the mucous membrane of the stomach and intestines, and the yellowness of the skin.

The morbid anatomy of the liver and kidneys has received great attention. The arrest in their functional activity which takes place to a great extent in all fatal cases, together with the interference with the normal nutrition of the organs which may be assumed to occur, would certainly lead us to anticipate changes in the appearance and structure of these organs. Whether these causes alone are sufficient to account for all the morbid appearances and alterations described, is a question which we shall not, at present, attempt to decide.

The most important and suggestive observations, however, concerning the morbid anatomy of the disease, are in our opinion

those indicated in the following quotation from the admirable article on yellow fever, by John Dennis MacDonald, in Reynolds:

"The brain has been very closely examined in numerous cases, with nearly the same result, namely, that no pathological condition in the slightest degree noteworthy has been detected, even including those cases in which cerebral symptoms, such as active delirium or profound coma, existed before death." (Gillkrest.)

"The spinal marrow, on the contrary, usually exhibits a congested state of the vessels, more especially in the lumbar region, where also the arachnoid membrane has been supposed to be in a state of inflammation. Effusion of blood has been found in the canal, but we cannot be certain of all that has been said about the existence of actual inflammation. The ganglionic system has also been examined, and apparently with still more definite results. Thus, the semilunar ganglia, solar, cæliac, hepatic, and neighboring plexuses, as well as the connective tissue investing them, have been stated, on the authority of Dr. Cartwright and others, to be uniformly in a condition indicative of inflammation. Nevertheless, excellent observers are not wanting who have never been able to discover any decidedly abnormal state of the system." (loc. cit., p. 670.)

The evidence is, I think, sufficiently convincing (*a*) as to the implication of the sympathetic nervous system in yellow fever poisoning. (*b*) We have no evidence that blood changes occur prior to the implication of the sympathetic which marks the outbreak of the disease.

(*c*) The action of the poison upon the sympathetic seems to be a paralyzing one, causing arrest of function, and producing phenomena similar to those following division of the sympathetic in any part of the body.

(*d*) Whether the blood is also primarily affected by the poison, or whether the changes in it are all secondary to arrest of the processes of nutrition, secretion, and excretion, may be considered a question still sub judice.

The fact, however, that in cases which terminate fatally within a day or two, the blood is found to be fluid, the red corpuscles more or less disorganized, and the hæmatin to have stained the tissues of the body, makes it probable that the poison also acts directly upon the blood. *But, that this action is of the nature of a fermentation, there is not the least evidence.* In fatal poisoning by hydrocyanic acid, "the venous system is gorged with dark colored liquid blood. (Taylor—Medical Jurisprudence, p. 170.) The blood is also found to be dark colored and fluid after poisoning by belladonna. (*Lancet*, Jan., 1870, p. 60.) But no one, so

far as I am aware, supposes that these poisons act as ferments. Whether they destroy the vitality of the red corpuscles, and the coagulability of the fibrin, by a chemical action, or in some other way unknown to us, is a question which we can not at present stop to discuss.

An interesting question concerning the action of the yellow fever poison on the sympathetic, is, whether that action is primarily paralyzing, or if it be not at first exciting and the paralysis due to over-stimulation.

The fever, flushed face, injected conjunctivæ, general capillary congestion, and arrest of function in the kidneys and liver, are all indicative of paralysis; and some of these symptoms make their appearance very early, if not at the very outset of the attack. It is seldom that a patient is seen by a physician before some of these symptoms are developed, but there may be a brief period during which the surface, the conjunctivæ, and the mucous membranes are filled, and the temperature lowered, by reason of vaso-motor spasm.

I have not myself observed this condition, although I have frequently seen patients while still suffering from the chill, who nevertheless had flushed face, injected conjunctivæ, and an elevated temperature. I am, however, led to suppose that small doses of the poison may have a stimulating effect upon the excretions, from the fact that I have observed in my own person, and have heard it remarked by others, during an epidemic of yellow fever, that instead of a daily passage from the bowels of normal color, more frequent passages of a dark color and tarry consistence are common. Those who have had the disease, or are protected by acclimatation, must receive the poison into their systems during the prevalence of an epidemic, and it would be interesting to note whether there is an abnormal secretion of urine at such a time, and if the dark tarry evacuations, to which I have referred, contain an excess of the biliary constituents.

This supposed action of the poison has its analogy in the action of atropia.

"Viewing all these facts together, I am forced to give my assent to the proposition that *atropia, in not too large amount, is a stimulant to the vaso-motor centres.*" (H. C. Wood, loc. cit., p. 211.)

We have now to inquire what therapeutic possibilities are involved in our view of the modus operandi of the yellow fever poison.

In the first place, it is evident that when the attack occurs poisoning has already taken place. The elimination of the poison, or its destruction in the system, if feasible, might have prevented an attack, but the poisoning having occurred, we have to do with its effects. How long the poison remains in the system; to how great an extent the progress of the disease is influenced by its continued action; and how it is finally gotten rid of—whether eliminated or destroyed in the system—we do not know. But from various circumstances, it seems probable that the continuance of the action of the poison is of short duration, and that it is destroyed in the system. At least we have strong proof that it is not eliminated unchanged—that is, as a living germ capable of self-multiplication.

The time then, to neutralize or destroy the poison, is prior to the development of symptoms of poisoning. The medicine which, theoretically, should be most successful in accomplishing this object, *is quinine.* The power of this medicine to destroy low forms of vegetable life has been repeatedly demonstrated. Its use in preventing the occurrence of the paroxysms of fever in malarial poisoning is probably due to this power. But no one claims that it will arrest a paroxysm already begun, neither has it been found to abbreviate or cure the paroxysm of yellow fever. It may destroy the cause, but can not neutralize the effect. Taking this view of its action, we should expect better success from quinine, administered as a prophylactic, than has been attained in giving it during the paroxysm to cure the fever. I have not at present facilities for collecting evidence upon this point, but will state that my individual experience is favorable to such a view.

But *how shall we neutralize the effects of the poison?* or in other words, cure yellow fever.

A mutual antagonism has been shown to exist in the action of certain vegetable poisons, which has been successfully taken advantage of in neutralizing their poisonous effects upon the human system (e. g., opium and belladonna). May we not hope to find also in the vegetable kingdom an antidote to the effects of the yellow fever poison?

At present I can call to mind but one article of our materia medica from which we might, theoretically, anticipate such an effect.

This medicine, which also belongs to the fungi, is *ergot.* The

power of ergot to produce vaso-motor spasm has been amply proven, and is successfully taken advantage of in the treatment of capillary hæmorrhages, diarrhœas, etc.

The hypodermic injection of ergotine* would seem to be the most promising method of administering this medicine in yellow fever, on account of the great irritability of the stomach, and the small probability of absorption taking place through its congested mucous membrane. Whether this suggestion will prove to be valuable remains to be seen, but I trust that it may be fairly tested when yellow fever next visits our shores, and the results published. Galvanization of the sympathetic is also a procedure from which we might theoretically anticipate some benefit. (See the *Practitioner*, Vol. VIII, No. 1, p. 374.)†

A CASE OF TRAUMAUTIC ANEURISM OF THE LEFT SUBCLAVIAN ARTERY TREATED SUCCESSFULLY BY DISTAL COMPRESSION.

BY WARREN STONE, M.D.,

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(*Read before the New Orleans Medical and Surgical Association.*)

T. C——, aged about 25 years, while in perfect health, was wounded on the 22d of April, 1874, by a pistol ball, which entered immediately above the left clavicle about ½ to ¾ of an inch from the sterno-clavicular articulation, and passed downwards and backwards, lodging under the skin just at the margin of the posterior border of the scapula, at a point corresponding to the origin of its spine. The wound was received at 8½ a. m. He walked about two squares to the office of Dr. Herrick, who first examined him, and, while undergoing the examination, he expectorated a small quantity of blood.

I was subsequently sent for, and visited him at his residence about 11 o'clock the same morning. I found him in a state of

* See Wood, loc. cit., p. 464; New Remedies, Vol. II, No. 2, p. 109—also Vol. II, No. 4, p. 327.

† We regret that the following errors occurred in setting up Dr. Sternberg's paper: page 1, ninth line, for "was chiefly" read "are chiefly;" page 4, third line, for "this" read "the;"—fourth line, for "this" read "the;" page 5, twenty-second line, read "the plasma of the blood;" page 6, in third line of eighth proposition, read (?) after membrane—in fourth line of same proposition the "O" in "Of" should not be capital; page 7, twenty-ninth line, after "climates" read "only;" page 8, twenty-third line, for "and" read "one;" page 9, for "*Atlantic*" read "*Atlanta*."

collapse, not due to the loss of blood, as the hæmorrhage had been trifling, but rather to general shock, somewhat increased and prolonged by intense pain, extending down the left arm and side, in consequence of injury to the brachial plexus, the arm being partially paralyzed. Opiates were duly administered, and in proper time reaction ensued. The next day he had some fever, with circumscribed pneumonia in the apex of the left lung, which soon subsided. The case progressed favorably, presenting nothing of particular interest, and I ceased visiting him at the end of two weeks.

Shortly after this he noticed a slight swelling over the clavicle, immediately opposite the cicatrice, to which he paid no attention until about the latter part of May, 1874, when its constantly increasing size, with other uncomfortable symptoms, excited his alarm, and he called at my office for advice.

Examination at once revealed an aneurismal tumor about the size of a guinea egg, and very much of its shape.

Thus, according to his statement, the aneurism manifested itself at a period between two and three weeks after the infliction of the wound. The course taken by the bullet, and the consequent *bruising* of the artery, is easily accounted for by taking into consideration the relative positions of the combatants when the shot was fired. The patient's opponent was on a platform a foot or two in height, and he (the patient) stood upon the pavement, with his left shoulder depressed to its utmost in the act of dodging, thus, to some extent, exposing the vessel in its convex portion, as it arched upwards and outwards from the aorta.

The case thus presented being of such magnitude, it required some days of careful reflection before absolutely determining upon the plan of treatment to be adopted. He was kept perfectly quiet and carefully watched. The tumor steadily increased, and it was not long before it became apparent that further delay would not answer. I then determined to attempt the occlusion of the sac by digital compression exerted on the distal side, when I found the artery could be controlled with the thumb pressing it against the first rib.

Realizing the absolute necessity of having compression made with the utmost skill and diligence, as there can be no doubt many of the numerous cases of failure by this method are due to neglect in this particular, I made every effort to secure a corps

of assistants upon whose skill and faithful attendance I could implicitly rely. The following named gentlemen promptly and enthusiastically responded to my request, viz., Drs. Lœber, Czarnowski, Salomon, Dell'Orto, Schmittle, Nægle, Mainegra, LeMonnier, Hopkins, Mandeville, Durr, and Messrs. Faget and Dreyfus, resident students of the Charity Hospital. To their untiring zeal and well directed labor am I truly indebted for the result here related. To each and every one I extend my most sincere thanks.

I chose this means of procedure without any data to encourage a hope of success, although Mr. Erichsen does mention that, if such a case were presented to him, he would first try distal compression. There was the difficulty of completely controlling the artery, as well as that of getting the patient to tolerate the requisite amount of pressure for a sufficient length of time—for, taking into view the currents of blood flowing through the vertebral, thyroid-axis and internal mammary arteries, all just bordering on the tumor, I deemed it necessary for success to thoroughly check any direct flow through the sac, hoping thus, in a measure, to counteract any adverse influence the circulation in these vessels might have upon the consolidation of the tumor. Had this have been upon the common carotid, I doubt if it would have been necessary, there being no branches from its origin to its bifurcation.

However, there being no danger attending the attempt except perhaps the very remote one of exciting inflammation in the sac, whereas the array offered by the statistics as to the results of the application of the ligature resembled grave-yard reports, we took courage, and determined to give him the full benefit of the doubt. My friend, Prof. Lœber, visiting physician and surgeon to the Touro Infirmary, kindly proffered the necessary accommodations in that institution, and the work of compression was commenced on the 15th day of June, 1874. It was continued without interruption for 39 hours, when we were forced to desist, as the soft parts beneath had begun to slough, and the patient was so exhausted from pain and fatigue as to be unable to bear more. After carefully placing him in bed, it was found that the tumor had diminished to nearly one half its original size, and that, although distinct pulsation was felt, it was markedly feebler, and the density of the sac greatly increased. Perfect quietude was enjoined, and the result awaited with feverish impatience.

The pulsation still continued, but the tumor did not increase in size, or in any degree did that hardness, which followed compression, diminish, nor did the pain with which he had previously suffered return.

The case being of such general surgical interest, as well as involving so much to the patient, numerous consultations were invited, and the various operative measures freely discussed and advised.

Still, daunted by the unfavorable history appended to all such operations, and, feeling satisfied, from the course the case had pursued since compression had been made, that a fibrinous nucleus had been established, I determined to build a hope upon this, and to postpone the consideration of any surgical interference. A strict surveillance was kept over the patient, and it was observed that the swelling and pulsation slowly diminished from month to month, proportionately increasing in density. About the middle of last March, all pulsation had ceased, and has not returned up to date.

The tumor is as hard as a marble and quite small.

The pulsation at the left wrist can be felt, but is very feeble—he is in good health, suffers no inconvenience whatever, and is gradually recovering the use of the left arm, which, until recently he has been forbidden to use but to a very limited extent, for fear of disturbing the aneurism.

Now, as to the practical bearing of the case:

I fully recognize the significance of the old adage that "one swallow does not make a summer," but I feel justified in saying that it could in no wise apply in this instance. I do not believe that by giving a full and unqualified share of credit to distal compression, I would be guilty of the too frequent error of substituting a coincidence for a fact. A reference to the history of the case, from the time of the appearance of the aneurism until the day compression was inaugurated, shows a rapid increase in the size of the tumor with all the accompanying disturbances, thus evidencing no tendency to spontaneous cure. And then following it on further we find the swelling materially diminished, its consistence increased, the pulsation much less, and the thrill scarcely audible after compression. Therefore, can I not safely state that the result obtained was due to pressure sufficiently

exerted to completely check the direct flow through the vessel, until fibrinous layers were amply deposited, so as to present a satisfactory basis upon which nature built and finished the work? I have no doubt that we could have secured complete consolidation at the time if the soft parts could have borne the pressure longer, and the patient's powers of endurance stood the necessary tax. Ligature of the artery at the point where compression was made, in the third portion of the artery, might have been tried. I have only to refer to all well-established authorities on that subject to create a comparison favorable to distal compression. Ligature of the proximal end in the first portion of the artery—a proceeding presenting very serious anatomical difficulties, and at all times dangerous—necessitating the taking up of the vertebral to avoid distal hæmorrhage, would have been under any circumstances worse than a forlorn hope. But, yet, granting that this fearful risk had been taken, and that the same success attended it, as did in the case of Dr. Smythe, where the innominate, common carotid and vertebral were successively tied for aneurism of the right sub clavian of traumatic origin, the middle coat of the artery having been ruptured by a sudden violent extension of the shoulder, would not the experience recently gained in that very instance give us another favorable comparison? Dr. Smythe's patient lived, it is true, ten years after the operation, for which too much credit cannot be given the operator, but he died a short time ago of hæmorrhage proceeding from the original sac, which had become filled with blood poured into it by the collateral circulation, which had extraordinarily enlarged to supply the urgent demands of nature. No doubt, the Doctor will give the surgical world a detailed account of the termination of this interesting case, which now stands prominently on record. Compression successfully applied on the distal end is not, I should think, likely to be followed by this accident, for the thyroid axis will supply the arm, and there being not the same extra demand for blood as in the other method, the small collateral branches, which. under the dictates of nature, would enlarge in proportion to this demand, remain natural and should give no trouble. This seems to me to be a fair inference, and, as the patient resides here and can be kept under observation, I trust time and opportunity in the future will be granted to verify it.

AN ILLUSTRATION OF SOME RELATIONS BETWEEN SMALL-POX AND VACCINATION.

BY S. S. HERRICK, M.D., of New Orleans.

The accompanying table is derived from the record of cases occurring in the first municipal district of New Orleans, in 1874 and 1875. Many of these cases merely afford confirmation of what has already been known of the relations between small-pox infection and vaccination; some illustrate that the relation varies considerably; some show a greater susceptibility to small-pox than to vaccination, and one a greater susceptibility to the latter (case 35); and some a recurrent susceptibility to small-pox.

The vaccinations were nearly all made by myself, and it has been aimed to secure the utmost accuracy where dates are stated. Inspection of the vaccinations was made just one week after, and, when the appearance was characteristic at that time, its result has been recorded as *positive;* when its effects had then disappeared, it has been regarded as *negative;* an intermediate effect has been classified as *partial.* In some instances, subsequent inspection showed the vaccination pustule and the variolous eruption developing together—in others the former was obscured by the latter.

Of the whole number of cases under observation, a majority had been vaccinated, and some of them more than once. The occurrence of small-pox in individuals showing several distinct vaccination marks, proves that no sure dependence can be placed on inspection of arms: safety is secured only by repeated vaccination.

The four examples of secondary small-pox are included as anomalies. The evidence of previous attacks seems to be well sustained.

It is remarkable that there is a wide-spread objection among our population to vaccination in the immediate presence of small-pox, on the supposition that this increases their liability to take the disease. This idea gains confirmation in the minds of people from instances like those in the table, where the vaccination was too late. The consequence is, that fatal cases have occurred in persons who have refused vaccination at a date when there was ample time for complete protection.

No.	Race.	Sex.	Age.	Vaccination.	Result of Vaccination.	Attacked with Small-pox	Grade of Attack.
1	Black	Female	8 mos.	May 22	Positive	May 29	Died.
2	White	Female	16 yrs	May 22	Positive	May 29	Discrete. Recovered.
3	Black	Female	4 yrs	May 22	Partial	May 28	Severe. Recovered.
4	Black	Female	3 yrs	May 26	Positive	June 1	Died.
5	Black	Female	8 mos.	Jan. 27	Positive	Feb. 4	Died.
6	White	Female	7 yrs	Feb. 26	Partial	Feb. 28	Severe. Recovered.
7	White	Female	13 mos.	Feb. 26	Partial	Mar. 1	Died.
8	White	Male	4 yrs	Feb. 26	Partial	Mar. 2	Severe. Recovered.
9	White	Female	4 yrs	Feb. 26	Partial	Mar. 2	Died.
10	Mulatto	Female	5 yrs	Feb. 22	Positive	Mar. 2	Very mild.
11	White	Male	5 yrs	Mar. 3	Partial	Mar. 9	Died.
12	Black	Female	15 mos.	Mar. 1	Positive	Mar. 7	Severe. Recovered.
13	Black	Male	14 mos.	Mar. 2	Positive	Mar. 8	Died.
14	White	Female	3 yrs	Mar. 5	Positive	Mar. 13	Light.
15	Quadroon	Female	21 yrs	Young & 6 yrs ago	Both Successful	Mar. 16	Light.
16	White	Male	13 yrs	Infancy & Mar. 13	Both Positive	Mar. 17	Died.
17	White	Male	15 yrs	Infancy Feb. '75	Successful Unsuccessful	Mar. 18	Very severe.
18	White	Female	13 yrs	Infancy Feb. '75	Successful Successful	April 6	Moderate.
19	White	Male	17 mos.	3 times	Negative	Mar. 21	Died.
20	Black	Female	3 yrs	Mar. 18	Positive	Mar. 25	Light
21	Black	Female	11 mos.	Mar. 18	Positive	Mar. 27	Very light.
22	White	Female	16 yrs	Infancy Mar. 18	2 l'ge marks Negative	Mar. 28	Light.
23	Mulatto	Male	14 mos.	Mar. 22	Positive	April 1	Very light.
24	White	Female	14 yrs	3 times	Negative	April 3	Confluent.
25	Black	Female	12 yrs	Young April 1	Positive Partial	April 6	Very fight
26	White	Male	18 yrs	Infancy & 11 y'rs Feb. '75	Positive Negative	April 6	Light.
27	White	Male	31 yrs	Twice	Both positive	April 10	Light.
28	Black	Female	18 yrs	April 9	Partial	April 13	Ordinary.
29	Black	Female	3 yrs	None	Small-pox 2 yrs. ago	April 16	Moderate.
30	Black	Female	5 yrs	None	Small-pox 2 yrs. ago	April 16	Moderate.
31	White	Female	25 yrs	Young Small-pox	Positive 6 yrs. ago	April 28	Very light.
32	White	Male	45 yrs	20 yrs. ago Small-pox	Positive 7 yrs. ago	May 7	Died. May 18.
33	White	Female	7 yrs	April 23	Positive	May 1	Moderate.
34	White	Female	30 yrs	Young May 4	Positive Partial	May 8	Very light.
35	White	Male	2 yrs	Mar. 24 Mar. 31	Failed Positive	Escaped Exposed	Since Mar. 20.
36	Black	Male	15 yrs	Young April 13	Positive Positive	April 17	Died.

TABULAR STATEMENT OF THE SICK OF YELLOW FEVER IN THE CITY OF PENSACOLA, FLA., FOR THE SEASON BEGINNING AUG. 23d, AND ENDING NOV. 25th, 1874.

BY ROBERT B. S. HARGIS, M.D.

Estimat'd Population.	Estimat'd number liable to the disease.	Number of cases.		Total No. Cases.	Number of Deaths.		Total No. Deaths.	Death rate per centum.		Average mortality of whites & blacks.
		Whites.	Blacks.		Whites.	Blacks.		Whites.	Blacks.	
5000	2000	237	51	288	54	18	72	22 +-	35 +-	28 +-

Recapitulation.—Population 5000; number liable to the disease 2000; number of cases 288; number of deaths 72; death rate per cent. 28 +.

Remarks.—The number of cases of males exceeded that of the females as 11 to 1; the proportion of adults to children as 20 to 1. Of 14 children from 4 to 8 years of age, only one (1) death. But one infant, and that was my own, aged 3 months, took the disease from *fomites* that had been smouldering for several weeks in my own clothes, like the *materies morbi* in McDonald's working jacket. It was impossible for the child to take it, under the circumstances, from any other source. It recovered by the application of no other means but hot *pediluvia* and inunction with olive oil.

The above table exhibits a very large mortality, especially of the blacks. The death rate, however, would not have been one-half as large if all the cases had been treated early in the attack by regular medical attendants. Twenty-one (21) had no legitimate medical attendance at all; *all died but one*—he was an attenuated Italian. Every one of the drunkards that had the malady died.

The disease could not perhaps be considered epidemic, the atmosphere being generally untainted, and the ratio of cases to population not exceeding 6 per centum. The atmosphere, according to a series of observations made by me in that city, was not in a favorable condition to foster the germs of the morbific principle, or agent, but for a short time during its prevalence.

Almost every one that had the disease took it by personal intercourse with individuals who labored under the pestiferous monster. In only three instances did it communicate through the air as a medium of transmission—that is, it was transported

through the atmosphere from house to house in three instances, without personal intercourse, and the distance between any one of the houses does not exceed 80 feet. Many "new comers" who occupied houses a hundred feet distant from infected dwellings, escaped; and the reasons why they enjoyed an immunity from the infection are, in my opinion—1st, *non*-intercourse; 2d, the morbific principle was either too much diluted in its transit through the air a hundred feet, or some element of the atmosphere (ozone?) destroyed its potency or noxious principle.

Several persons who had yellow fever last year (1873)—five (5) fell under my own care—had it again this year; two of my cases died—one was an inebriate; the other was temperate in his habits and had a vigorous constitution—he lost his life by "getting up and walking out" on the 6th day of his illness. He would certainly have recovered if he had "kept his bed" and his physicians 24 hours longer, and afterwards been prudent.

HISTORY OF A CASE OF DYSMENORRHŒA AND STERILITY.

BY THOMAS LAYTON, M.D.

The following observation is published, not because it is claimed that the successful issue of the case required, or brought into play, any extraordinary measures of treatment. It is believed, on the contrary, that this recital may be of interest from the very fact, that the gratifying result appears to have been due to the attention paid to those indications which seemed most simple and rational.

The writer was called to attend Mrs. ——, who had been married over three years without ever having presented any indication of being pregnant. She was in her 26th year, and of delicate appearance, although the assurance was given that, with the exception of the trouble to be related below, her general health was very satisfactory. She was a twin, and menstruation was established when she was fourteen years old.

For the first two years the periods offered no irregularity, but after exposure, a change occurred. The discharge, without losing its regular periodicity, became, at times, of longer duration, lasting eight or ten days; and towards the close it consisted of bloody mucus. Occasionally the flow became distressingly painful, and this latter feature yearly became more frequent. When

first consulted, general measures of palliative and tonic treatment were recommended, and in addition to their observance, the lady spent several weeks in the country.

As no decided improvement was noticed, an examination was asked for, and revealed the following peculiarities: the uterus was a little larger than usual, and completely retroverted. It was painful to the touch, but appeared to be free from adhesions. Pressure of the cul-de-sac was complained of moderately. The posterior wall of the uterus had a thickened feel, and this was more manifest in the neighborhood of the junction of the body of the organ with the cervix. Although no attempt was made, at this examination, to pass the probe, it was thought that retroflexion coexisted with retroversion. The cervix was found high up, behind the symphysis pubis. It was very long and slender, and was readily moved around the finger end. On being drawn down, the os was discovered to be circular and contracted. As the menstrual epoch was approaching, the treatment consisted simply in the insertion of a small-sized Hodge's pessary. After some little discomfort, the patient became accustomed to the instrument, which held up the womb well, as was evidenced by the difference in the situation of the cervix. Menstruation was less painful than on former occasions; the relief was, however, far from being complete, and the discharge, towards the close, again consisted of bloody mucus. The pessary was left in situ, and iodide of potass, in combination with ergot and iron, was ordered. At the next period, the result was similar to that obtained the month previous. The general treatment was continued, and at the usual time the pessary was removed, and reapplied a few day later. Shortly before the menses were again looked for, the cervical canal was slightly dilated by the introduction of a small tent. This measure was followed by so much relief, that it was decided to delay further local action. The internal medication was kept up, and the pessary was only removed once every six weeks. Menstruation ceased being painful, and the duration of the flow was reduced to four days, on an average. It was now noticed that the cervix seemed to be undergoing a process of growth or development, and this fact attracted attention, as the neck of the womb was unusually long and slender when the lady was first examined. Pregnancy was of course suspected, but none of the symptoms were present, and menstruation was remarkably regular in every particular. The

case remained under close observation, and it was deemed advisable to do nothing more, in view of the evident amelioration which had taken place. The change in the condition of the cervix became more and more manifest, that portion of the organ becoming perceptibly shorter and thicker. A few months later, menstruation failed to appear when expected, and the usual symptoms of pregnancy became revealed. That the shortening and thickening of the cervix, mentioned above, were not produced under the influence of gestation, was shown by the fact that confinement took place nine months after the suppression of menstruation.

The patient continued to wear the pessary, as a precautionary measure, until the womb was sufficiently developed to do away with any fear of accident from a reproduction of the retroversion. Pregnancy was not unduly disturbed, and the accouchement was fortunately terminated, although the use of the forceps was called for at the birth of the child, owing to a high symphysis and approximation of the pubic rami.

ON THE SURGICAL TREATMENT OF WEB-FINGER.

BY B. E. HADRA, M.D.

The subject upon which I propose to make a few remarks, is, of course, relatively a trifling matter. But it is just these very trifling surgical troubles which are, from the absence of reputation to be acquired by writing upon them, much more neglected than is good for the practitioner, who very often, even by the best and most voluminous Text Books, is left in ignorance, and forced to discover by his own experience, that these apparently trifling troubles, and the operations for the same, are more obstinate and tedious than many of the most formidable operations. So, in regard to our subject, the cure of web-finger. I find in Gross' excellent Surgical Text Book but a few lines which indicate to the surgeon, that a simple incision and a few sutures are all which a cure of web-finger requires. In Erichsen I find nothing at all on the subject. Billroth, Bordelebim, Sargent and others, on the contrary, fully appreciate the difficulty of obtaining a perfect result in the cures.

I have lately had under my treatment a case of web-finger in a boy two years of age, involving the third and fourth fingers.

The connecting skin was of some considerable breadth and extended as far as the first phalangeal joint. I thought first to operate on Didot's plan, but at the same time combining it with the formation of two flaps from the closed and palmar surfaces of the connecting tissue, so as to procure a covering for the interdigital angle. I first formed the flaps, and then made a longitudinal incision along the dorsal aspect of the third finger and the palmar surface of the fourth finger. Then separating the two sheets of skin, I made the lower one cover the third finger and the upper one the fourth finger, which brought the sutures in non-opposition.

In doing this I found that, while the flaps for the interdigital angle were long enough, the coverings for the fingers were not of sufficient breadth. I used adhesive strips to hold the coverings in their proper place, believing that an union of the interdigital flaps would be sufficient to prevent the fingers from growing together again. Of course oiled lint was placed between the fingers and the hand stretched on a hand board.

But very soon the flaps contracted so much, that the sutures cut through, and the covering flaps on the fingers showed considerable suppuration and no tendency to heal, presenting the picture of an entire failure. Although according to the best authorities nothing was to be expected from keeping the fingers asunder, I resorted to it, as the parents were unwilling to allow another operation, which would have consisted of forming new flaps to cover the interdigital angle from the adjacent points of the hand.

Even the transplantation of skin from another person gave no results. The tendency to primary healing was so great that at the expiration of twenty-four hours there was visible union of the parts. I now had recourse to a suggestion of the late Dieffenbach, which was to place elastic cords between the fingers at their roots. As I could not find any further explanation of his treatment, I tried from my own reasoning, an india rubber cord ¼ inch in diameter, bringing it through the interdigital space and fastening it around the wrist. But it pressed so much upon both sides of the wound, that deep grooves were formed, and it had to be abandoned. Finally, I took an india rubber band, one and one half lines in breadth, tying it in the same manner loosely around the wrist, but with sufficient tension to exercise a slight pressure at the base of the digital angle. From this moment I

had no further trouble. The band was changed every two or three days from the ulnar to the radial side of the hand, and then back to the ulnar side again. This was done that it might not cut into the flesh too much. The hand was bathed in warm water and the wound cleansed every day, with the band in situ. At the end of three weeks it was entirely healed; the bandages were removed and the hand left free, except that, as a precautionary measure, the rubber band was left for some time.

In the treatment of this affection everything depends upon securing a sufficiency of covering for the angle between the fingers, while the healing of the wounds of the fingers themselves is of secondary importance, especially where there is plenty of connecting skin, so that a contracted cicatrix is not to be feared. As soon as the angle is healed with good skin, the balance heals easily and only simply keeping the surfaces apart is necessary.

In what manner the first named indication is to be fulfilled depends much upon the particular features of the case. Either one very long flap, or one from above and another from below, will be necessary. If the connecting tissue is broad enough, it will be simplest to form a flap from each side. If not, a plastic operation (that is a flap from the palm or dorsum of the hand, or two smaller ones, one from each side) will be necessary. The ingenious operation of Didot, already described, seems much more plausible on paper than its results warrant, unless the connecting skin is exceedingly broad. In my case even an extraordinary breadth was not sufficient to cover the deficiency and the retraction.

Another method, recommending a perforation of the connecting skin near the roots of the finger, and prevented from closing by keeping a piece of cord in the opening, until the edges have healed, and finally dividing the remainder of the connection, (Liston & Rudtorfor), is surely a very uncertain one, from the very limited first division; and, as it takes weeks for the perforated portion to heal, and then the remainder of the tissue has to be divided, it requires a long time. Thus, I find one case reported, treated in this manner for one and a half years, and not then with decided success. (Frölich Zeitschrifts für Wundarrzte, 1870). Now, if the attempt to cover the angle with good skin has failed, the india rubber band, as used in my case, will give full satisfaction in a comparatively short time. It exercises a slight stimulation, and not only prevents an union of the divided

parts, but even acts as a constant divider. Besides, it is so simple in its application, that any one can apply and observe it, and it allows thorough cleansing of the parts. In cases where there is a very narrow connecting band of skin, a simple division of the web might be made and the rubber band applied without resort to any flap operation. The keeping the divided parts asunder may be accomplished by a simple cotton plug, soaked in carbolized oil, or some other antiseptic.

AUSTIN, TEXAS.

ON QUARANTINE.*

BY C. B. NEW, M.D.

(Written in 1844, for Dr. Fenner, who copied my manuscript, as may be seen by those who know his writing, with intention of publishing in his Journal, but in the meantime he sold his Journal to Contagionists, and returned the copy to me. It has never been published. C. B. NEW, 1875.)

For forty years the question of contagion has been regarded by the profession as settled. Contagion, like mesmerism, has been consigned to the "tomb of the Capulets"—the first by a Rush, the latter by a Franklin. True, now and then an individual may be seen rash enough to erect the brazen serpent; but unlike that of old, its worshippers, instead of looking upon it and believing for safety, are required to turn their backs and shun it. The contagionists offer no new trophies upon the altar of their idolatry. From the time of Thomas to the present, they have not added one well authenticated *fact* reflecting any light upon this question; and the speculations of their Magnus Apollo have only been reiterated by every follower, whilst the history of every epidemic furnishes additional evidence of the local origin of yellow fever.

The profession at large, satisfied with facts already furnished upon this point, regard with too much indifference the writings of contagionists. This supineness has emboldened the advocates of contagion; and since they cannot propagate their doctrines to any extent among medical men, they are determined, if possible, to make a party by catering to the fears, credulity, selfishness, and ignorance of the people.

*[We publish this paper at the instance of Dr New, made through Prof. Bruns. It should prove both interesting and instructive to our readers, to lay before them hitherto unpublished papers upon this subject, which were approved by one of the most popular and best known writers of that day.—ED.]

It is no wonder individuals unacquainted with facts connected with this question, shrinking with horror from contact with a malady so fatal, and obeying the dictates of our selfish nature, should readily fall into the errors of contagionists. But it is a matter of astonishment, that medical gentlemen should still persist in an error so pernicious and so groundless. This error would be of no consequence, were it not for the evils growing out of its dissemination amongst the people. From the position and bearing of the question, the multiplicity of interests involved, and the unscrupulousness of some of the advocates of the doctrine, serious consequences must result to society unless the profession again give a *quietus* to this resuscitated "Capulet." The mischievous results of this doctrine may be observed in every epidemic—in the hurried attentions of the frightened physician—in the forgetfulness of all the duties of benevolence and humanity, and sometimes in the abandonment of the sick. Fear, the inevitable consequence of a belief in contagion, disarming the mind and body of all energy, invites the disease; thus the contagionist, the disseminator of fear, opens the way for the march of this destructive epidemic. No one can doubt that *fear*, of all exciting causes is the most prolific in the progress of this malady; hence the great fatality always attending the epidemic among people unacquainted with its character. These evils, though great, do not equal others growing out of this doctrine.

The quarantine, a weak offspring of a timid parent, spurning the just claims of suffering humanity, enriching itself at the expense of an abused and crippled commerce—crippled by unnecessary restraints upon trade—is attended with still greater evils than those already enumerated. Like some Don Quixote on the outskirts of a city, battling with an imaginary foe while the citadel of the besieged is left undefended, so the contagionist, with the quarantine as his shield, is contending against an imaginary enemy whilst the heart of the city is left in the hands of the conqueror. The quarantine teaches a reliance upon a *false* security, at the same time it diverts the attention of the municipal authorities from the investigation and removal of the *true sources* of the disease. In this way, incalculable injury may be inflicted upon science, commerce, and humanity.

With an intelligent board of health, and a properly regulated police, all the causes which are known to produce fever may be removed, and the disease prevented—even in New Orleans—

without which, in certain latitudes, in combination with certain atmospheric changes, it must occur; in that event the quarantine can be of no value whatever.

The history of the quarantine of Natchez, only established three years ago, is boastingly referred to as evidence of the value of such regulations. The gentlemen forget that a much more efficient and strictly enforced quarantine than the present has existed there, which fact must invalidate all the testimony which may be claimed from this quarter. For several years a rigid quarantine was kept up in Natchez, under the superintendance of Drs. Ker and Cox—even the suburbs of the city were guarded by armed men, preventing the entrance of all strangers from every direction: notwithstanding this care, Natchez suffered from yellow fever. After this, when the quarantine was abolished, the town for ten years was exempt from the disease, all of which time an uninterrupted intercourse continued between this place and New Orleans, where the disease prevailed every year.

These remarks have special reference to the present sanitary laws of quarantined towns—such laws as have only in view contagion and its importation—that cause the unnecessary detention of steamboats, exclude the sick, examine the tongue of the healthy, and leave unnoticed causes which may, and often do, produce disease.

It is worthy of remark, that whilst the contagionists of the O. S. contend that yellow fever is always imported into this country from the West Indies, the earlier writers of that region were equally anxious to prove the disease *an alien* there.*

Père Labat alleged, this disease was *imported into* Martinique in 1682 from Siam, by the ship Oriflamme. Dr. Chisholm stated, yellow fever was first introduced into the West Indies by the ship Hankey, in the year 1793. This was disproved by Dr. Bancroft and Surgeon Veitch, who served in that station. Dr. Chisholm, not satisfied with this attempt to import the disease, tried it again in 1796; but this time, still unfortunately for his

* See Rush's Essays, and Gillkrest on Yellow Fever. They furnish indubitable evidence of the local origin of the disease in many instances, *without* the tropics.

The "Navigation," from Marseilles; the "Indiaman," on her way from England to Madras; the "Hulda," from Hamburg; the "Regalia," from Sierra Leone; the "Blossom," from the coast of Havana; the "Pyramus," from Barbadoes; the "Hussar" frigate, on our own coast; the "Penope," carrying Irish emigrants to New York; the "Hilbert," in passage from Portsmouth to New York; the existence of the disease in South America, Spain, France, England, upon the coast of the Mediterranean, in Western Africa, in the East Indies, and in the interior of the United States—prove beyond the possibility o cavil, that yellow fever is peculiar to no country and is of local origin.

doctrine, he fixed upon a vessel in which Dr. Furguson, Inspector General of Hospitals, happened to have served with the troops. So this, too, was disproved.

In every country a belief in contagion was common among the first writers, consequently we find them unwilling to admit the nativity of the disease anywhere. In Vera Cruz they attribute its origin to importation from Havana. This is disproved by Humboldt. In Havana and the Brazils they look to Spain for its origin, and in the latter place they ascribe the origin of the disease again to the West Indies; sometimes to the Mediteranean, Africa, or Siam. These places deny the imputation, and declare they have obtained it from, and not given it to, Europe. It is now the opinion of the ablest writers and the great mass of the profession, that yellow fever is produced in all the above places, and in the United States, since 1822, the period of the last epidemic in New York, when Dr. Beck made a public recantation of his faith in contagion, leaving Dr. Hosack and Dr. Townsend, out of a faculty of two hundred, the only advocates of this obsolete doctrine, the transmissive nature of yellow fever has been almost unanimously abandoned by medical gentltmen.

The contagionists lay much stress upon the quarantines of New York, when contending for the importation of the disease. The last epidemic occurred there in 1822—the quarantine was not established till 1826. What gave to New York the exemption here noticed? May we not infer that the same causes which prevented the occurrence of yellow fever in this city, during the four years continued after the adoption of the quarantine? This view of the subject is confirmed by facts connected with the remarkable prophecy of Dr. Rush, in relation to this city. Whilst Dr. Hosack was contending that neither animal nor vegetable matter in a state of putrefaction, filthy streets, nor dirty sewers were capable of producing yellow fever; and directing his entire efforts towards the establishment of a quarantine, Dr. Rush was strenuously urging upon the citizens of Philadelphia and New York the importance of strict attention to the state of the streets, and to pay less regard to quarantine; at last when he had convinced the people of the value of his policy, he made the following remark, which has been most singularly verified: "Facts and arguments similar to those we have urged, have produced a conviction of the domestic origin of the yellow fever in Boston, New York, Baltimore, Norfolk and Charleston. This conviction

has been followed by *measures in New York which promise in future years, an exemption from the disease.*"

These measures were completed, and consequently we find New York free from the disease, even since the year 1822. The same measures were adopted in Philadelphia and Baltimore, and these cities for more than twenty years, although, for that period neither city has had a quarantine, have enjoyed the same freedom as New York from all attacks of this fever.

The quarantine of Natchez, to which we have before alluded is corroborative of the same facts, proving the inefficiency of quarantines, and moreover, the local origin of the yellow fever. The advocates of contagion assume the ground that yellow fever "never occurs in inland towns," thence inferring its importation into our seaport towns and subsequent spread by contagion. Let us again resort to facts. There is scarcely a village in Spain which has not been visited with yellow fever, and many of them are remote from the seaboard, and on no navigable streams. Cordova, Montilda, Ronda and Grenada are all interior towns, and all have suffered severely from this fever repeatedly, and when it is not epidemic in those places, sporadic cases are witnessed every year.

Dr. Rush mentions several instances of epidemic yellow fever in inland towns, and some upon rivers, before the adoption of steam navigation. The disease has appeard in Lynchburg and Alexandria, Va., Harrisburg, Pa., in the interior towns of New York, Maryland, North Carolina and Alabama.*

The existence of *sporadic cases* of yellow fever is indisputable evidence of the incommunicable nature of the disease; for were this disease contagious, there would be no reason why such cases should not extend their influence till the whole community became involved. But facts show that sporadic cases occur frequently in the Southern towns, and still we have seen as yet none so bold as to assert that these cases extended the disease by the secretion of any *poison.*

From the report of the Board of Health, of Vicksburg, we find several sporadic cases occurring in that town in 1839, none of the subjects of these cases had any communication with steamboats or the river.

*See Dr. Gray's remarks upon yellow fever occuring in the "Northern Neck" of Va., in 1814 and 1815, and Mr. Watkins' account of the same disease in Western New York in 1819. *Medical Record, Vols. II and IV;* also, Dr. Potter's Essay in which he notices the disease in Galliopolis.

Not a year passes that cases of yellow fever are not seen during the summer months, in New Orleans, before the disease becomes epidemic, and these cases are observed to occur in different parts of the city, remote from each other, and distant from the landing.

Dr. Lyle, during the last summer, (1843), attended several sporadic cases of yellow fever in Natchez. The contagionists there, doubted the character of the disease, till the attending physician invited some of the most prominent members of this *party* to visit the cases. When finding it no longer possible to deny the identity of the disease, it was *then thought* that the disease could be traced to a patient put ashore from a steamboat. This opinion we accordingly find advocated in a letter written to a physician of Rodney. If the cases of Dr. Lyle had all occurred about, or near the same period, there would be some seeming probability in this view, but the facts were opposed to this opinion, as the cases appeared at distant points after long intervals, and in a manner that precludes the possibility of their extension, by any communication, one with the other. These facts disprove the position of contagionists, and show that the cases referred to *did originate* in Natchez. But let us, *en passant*, inquire if the quarantine was *asleep*, when the case alluded to, was "put ashore from a steamboat"?

If the cases referred to had any agency in producing those observed by Dr. Lyle, the latter should have been propagated by direct communication, one with another, which we are assured by Dr. Lyle, was not the case.

The case alluded to by the contagionist of Natchez, we have been informed, was that of Mr. Ramsey. From the history of this case, we are convinced that Mr. Ramsey died of diarrhœa; but were we to admit this to have been a case of yellow fever, the gentleman could not derive any aid from a fair representation of the facts. Ramsey died *three weeks before* Dr. Lyle's first case was attacked, and from the statement of the Doctor, an extract from whose letter we will have annexed, it will be seen there was no communication between the case referred to and those of Dr. Lyle:

"The number I saw was seven or eight—six of these I attended. I am confident they had no communication with Ramsey. They did not visit him, nor did they attend him during his sickness—not even his funeral."

After describing the locality of the disease, Dr. Lyle remarks:

"Take it all in all, it is one of the most likely places about the city to generate the disease. Very few summers have passed since I have been here, that have not furnished sporadic cases of yellow fever, and you may safely attribute the last cases to the same causes which have heretofore produced the former. It will be difficult for the contagionists to prove direct communication with anything that will answer their purposes."

Moreover, the disease, according to the laws of contagion, should not have ceased with the seven or eight cases of Dr. Lyle, but should have progressed from one to another, till the whole city became its victims. For we find Dr. Hosack contending that "a spark is only necessary to enkindle the whole magazine;" and according to Dr. Monette, as here was the "leaven of infection," why did not the cases noticed above, "leaven the whole lump"?

Now, no one can doubt that sporadic cases and cases occurring in an epidemic, are essentially the same; that noxious agents capable of producing the one must produce the other—that the causes must be the same, only differing in intensity. The local causes when limited in their influence give rise only to sporadic cases; but let the circle of impure atmosphere, originating from a more extended source, or from the continued action of the same causes, widen; and finally embrace a whole city within its sphere of action, the consequence must be epidemic yellow fever. The question again recurs to us, where is the necessity of a quarantine? Here the disease, in the form of sporadic cases, occurs within a city independent of contagion, and in defiance of all quarantines, and with a "certain state of the atmosphere," according to contagionists, may produce an epidemic. If this "state of the atmosphere" exists in the city during the existence of the sporadic cases, the epidemic should appear; but, on the contrary, if this condition of the atmosphere is not present, what possible danger can result from the introduction of fever patients into the city? In either case the quarantine can be of no service whatever.

Dr. Monette refers to Washington, a small inland town near Natchez, and adduces an argument from the quarantine established there in 1839, in favor of contagion. But he has furnished us, instead of strengthening his own cause, facts which will defy the ingenuity of that gentleman to reconcile with his own doctrine; at the same time we have to thank the Doctor in this instance for a valuable proof of the incommunicable nature of yel-

low fever. After speaking of the "epidemic constitution of the atmosphere," which he says existed in Washington, as well as Natchez, he remarks:

"Such was the state of things when the people of Natchez fled at the first alarm of yellow fever in 1839. Washington was one of the principal retreats, and the town authorities having the scenes of 1823 in their minds, had watched with anxious solicitude the reckless policy of Natchez, and the gradual introduction of yellow fever into the city, and determined to protect their own citizens. Accordingly, an ordinance was passed prohibiting the introduction of all bedding, feather beds, blankets, and other porous articles from Natchez. Yellow fever patients were expressly prohibited from entering the town. The ordinance was rigidly enforced, and the whole town, with its crowded population, was entirely protected from the threatened pestilence. *Although about eight cases of disease developed themselves in town, who came out from Natchez apparently healthy.*"

Now, will the Doctor take the position that cases of yellow fever developed in a town are less contagious—that they are less to be apprehended, though they passed through every stage of the disease, and some perhaps ending in death, than those introduced from abroad?

How wonderful and protean the laws which govern this malady, when we look to our opponents for its character.

Here we have seen all the causes according to their own views, necessary to produce an epidemic. An "epidemic constitution of atmosphere"—a dense and crowded population—the "heap" requiring only a "little leaven of infection" to leaven the whole mass—the magazine all ready to be fired by the "first spark," and with this state of things we actually find *eight cases* of yellow fever burning within this very magazine, and strange to say, *not another case* occurring in the town, besides those who contracted the disease in Natchez. What other testimony is necessary to prove the incommunicable nature of yellow fever?

Dr. Bane, Deputy Inspector of Hospitals, residing in the West Indies, in an elaborate report upon yellow fever, remarks:

"The first important result which I have proved in the naval hospital is, that yellow fever cannot by any possibility be communicated from one person to another. So few in the West Indies believe in the doctrine of contagion, that they may safely be permitted to enjoy their own opinions, they cannot do much harm. The testimony of Fergusson, Harth, and other experienced writers in the West Indies corroborates this opinion.

"From these facts, it is evident that the disease is not contagious—is not propagated from one to another, by contact or con-

tiguity—that there is no *animal secretion* by which the disease can be communicated—that it owes its origin to local causes, and depends on the atmosphere for its dissemination."

We believe the distinctive character of yellow fever is determined by changes in the constitution of the atmosphere, changes too delicate for any known chemical tests to detect. Whether this inquination of the atmosphere is owing to any alterations in the relative proportions of the original elements of the fluid, or is owing to the superaddition of noxious gases evolved in the decomposition of vegetable matter, is yet to be determined. But that the latter is indispensable in the production of yellow fever, no one can doubt. How far the former is necessary we are unable to say. We know this, where paludal influence or vegetable putrefaction most abound, other causes being present, such as high atmospheric temperature—dense population—close and narrow, or illy ventillated streets, there yellow fever is most likely to occur. It is no less true that vegetable putrefaction may exist without producing the disease. From this we may infer the necessary presence of some other agent. We are of opinion that this cannot be contagious, and as it is evident yellow fever strictly conforms to all the laws recognised in atmospheric diseases, we are convinced yellow fever is the result of a combination of the causes alluded to. The regular appearance of the disease year after year, in particular districts, and which may be often defined with precision, as in Baltimore, the general prevalence of the disease, some years affecting inland towns and towns having no commercial intercourse, as Fort Jackson, Fort St. Stephens, Fort Claiborn, and other places already mentioned, the appearance of the disease in various and distant cities of our Union, at the same period, precluding the possibility of intercourse, prove beyond doubt the atmospheric nature of yellow fever.

From all the facts we have presented the reader, gleaned as they are, from the observations of the most eminent of the profession, we are warranted in the following conclusions, viz.: that the disease may originate both on land and on sea, and on vessels in port—that it is not imported from the West Indies, nor is it peculiar to any country—that there is no animal secretion capable of generating yellow fever, therefore, there is no poison that may be transported, but that it is the product of chemical action, and that quarantines are not only unnecessary restrictions upon commerce, but they divert the attention of

proper authorities from the true sources of yellow fever, viz.: *local causes*, and thus they indirectly inflict upon the public irreparable injury.

In our next number we shall see how far the main propositions of this, are sustained by facts, observed by ourselves during the epidemic at Rodney.

ALCOHOL.

BY J. W. MEEK, M.D.

I read with pleasure the lecture published in the March number of your Journal, delivered in December, by Prof. F. Hawthorn, but was much surprised at some of the positions taken by that distinguished teacher. It would, indeed, be the veriest presumption for an obscure "Arkansaw Doctor" like myself, to attempt anything like a regular review or criticism of that lecture, and such is not my wish or intention; but I cannot afford to give up, until I see more on the subject, some of my fondly cherished remedies for the treatment of certain diseases in which Prof. H. says, most emphatically, they are "contra-indicated." And more especially am I loth to give them up when I notice that his lecture does not give the slightest hint as to what are to be the succedanea in diseases where these remedies (alchohol and opium) have been extensively used.

These pages are, therefore, written with the hope that when he sees my perplexity, (and in this I do not suppose I'm alone), he will give us further information on this important subject.

Prof. H. starts out with the assertion that alcohol is *not* a stimulant, and in his first proposition laid down, says that "stimulation implies a heightening of function or an increase of force," and in his second he says "the very earliest perceivable effect of alcohol is a feeling of tingling and numbness in the more sensitive parts of the body, which as the influence deepens extends to absolute insensibility." Now, according to my view of the matter, Prof. H. has banished stimulants from our vocabulary, and henceforth they are to be remembered only as myths or objects which had their existence in the imagination of deluded man. I am sure the most, if not all, of our so-called stimulants, produce, if pushed far enough, "tingling, numbness and insensibility." These effects are attributed to sulphuric ether, which has always enjoyed the reputation of being a "diffusible

stimulant." Thus it seems to me he has, by one stroke of his pen, knocked out of existence all such things as stimulants, and in the future "Ichabod" is to be written on their banners.

Again, it seems to my mind that alcohol "heightens the functions" of the cerebrum in some if not all individuals, which is evinced by vivacity, increased mental activity, loquacity, and a rapid flow of ideas. It is a conceded fact, that some men can give clearer expression to their ideas, and are more ready-witted, when moderately under the influence of alcoholic stimulants; so the wise man thus truly wrote, "wine maketh merry." This effect cannot be denied, for every inebriate will confirm it; and surely this does not look as if alcohol exerted a "lowering influence" on the nervous system.

Prof. H. again says, alcohol increases the frequency of the pulse by withdrawing in part the influence of the pneumogastric nerves. From clinical experience, as well as from the teachings of many of our most eminent writers on medicine, I have been led to believe the contrary, viz., that alcoholic stimulants, given under certain conditions, increased the force (which Prof. H. says is stimulation) and diminished the frequency of the pulse. In Flint's Practice of Medicine, edition 1868, there is related a case of pneumonitis in a child of 14 months, presenting the utmost gravity of symptoms, to which brandy in large quantities was given, with the effect of rapidly reducing the pulse from 200 per minute to 124 This does not look like withdrawing the inhibitory influence of the pneumogastrics from the heart, and allowing it, like a railway train with the brakes "off," to run away to ruin.

My own experience is, that when the pulse is very frequent, soft and compressible, and the first sound of the heart almost imperceptible, stimulants (alcohol and opium, I mean) increase the strength of the impulse, and at the same time diminish the frequency. Prof. H. says these medicines act alike, but do not stimulate. I have been accustomed to rely principally upon them when I thought stimulation necessary, and have, as yet, had no reason to be displeased with them.

Flint quotes Stille as saying, that after an analysis of over one hundred cases of cerebro spinal meningitis, he found opium to be the best remedy, and that under its influence the pulse *became fuller and slower*. Can it be possible now that these men are entirely mistaken as to the effect of these medicines? But,

says Prof. H., alcohol lowers the temperature, and "if you do anything by which an increase of force is secured, you must cause an increased destruction of tissue." I do not believe alcohol increases the temperature, though a stimulant; neither do I believe stimulation necessarily involves an increased destruction of tissue. For example, digitalis is now considered to be a "heart tonic"—that is, it increases the force of the heart, which he says is stimulation, and for his theory to hold good, it must increase the destruction of tissue and therefore the temperature; but who ever heard of such an effect being attributed to it? If it fails of universal application, it appears to my mind that it must fall to the ground.

In acute shock and the cold stage of intermittents, Prof. H. says they are contraindicated. All authors (with whom I am acquainted) of medicine, surgery, and midwifery, hold to the contrary, and experience in our hands has proven the contrary. In conclusion, I will state that I have ever had a great degree of respect for the medical opinion of Prof. Hawthorn, but I am unwilling to blindly follow him in his theoretical peregrinations, which seem contrary to the teachings of good reason and all experience.

ATLANTA, ARK.

FOREIGN BODY IN THE AIR PASSAGES—PERSISTENT HOARSE COUGH—SUBSEQUENT BRONCHO-PNEUMONIA—GREAT LOSS OF FLESH—EXPECTORATION OF THE FOREIGN BODY AFTER FOUR MONTHS—COMPLETE RECOVERY.

BY DR. C. DELERY.

I was called, October 20th, 1873, to visit E. Toulmé, æt. 16 years who had swallowed a berry covered all over with sharp points, or thorns; it is the fruit of an annual plant which grows very extensively in this place, and is commonly known by the name of "*racatcha.*" I found the patient much troubled with a kind of croupal cough, and experiencing a feeling of uneasiness which was apparently felt at upper extremity of æsophagus. I directed him to swallow five or six pieces of stale bread one after the other. It seemed as if the foreign body were being moved, for at each deglutition the feeling of uneasiness was felt lower down till it disappeared entirely at the sixth deglutition. The last

unpleasant feeling having been experienced as if quite near the cardia, I was satisfied that the berry had dropped into the stomach, and I left the patient, not anticipating any further trouble The next day the patient began coughing as badly as ever, without experiencing, however, the feeling of uneasiness above described. An abundant foamy expectoration soon made its appearance. The next day an emetic provoked the expulsion of three or four small thorns The patient experienced momentary relief, which gave hopes of complete recovery; he soon, however, relapsed. He then went on alternately better and worse until early in April. About the 15th, fever set in, with a spell of coughing which could only be checked by strong doses of morphia. The next day broncho-pneumonia was evident by auscultation, and by the sputa. The trouble had now reached its paroxysm; skin hot; pulse 120, and even 130 at times; constant croupal coughing; patient very restless, almost complete loss of sleep. Active treatment was directed against the condition of broncho-pneumonia; agitation and insomnia subsided as per magic after injecting subcutaneously morphia acetatis gr. 1-6th.

"Statu quo" up to April 23d, 1874, when I was hastily summoned. An extraordinary feeling of uneasiness had suddenly come on; patient had called his parents to his bedside, being under the impression that he was about to die. His face was much altered, contracted and blue; feeling as if he were about to suffocate, he made signs that a basin be brought to him; he suddenly sat up in his bed, and vomited a mixture of bile and mucus in which the whole berry was found. Since then his health improved daily, and he is stouter now than he has ever been.

The people here mention three cases of death from the same cause. I had caused the emetic to be repeatedly resorted to, with a view to induce expulsion of the foreign body, or at least loosen it, as it were.

Bay St. Louis, April 30th, 1875.

QUININE IN THE TREATMENT OF PNEUMONIA.

BY GEORGE J. HUEY, M.D.

From several years' experience in treating this disease, I am satisfied that the use of quinine is not sufficiently appreciated.

Under the old plan of treating the disease, as laid down by our standard works, such as bleeding, mercury, tart. emet., etc., we kept our patients under a ten or twelve days' confinement, with a tedious convalescence for those who recovered, and a ten or twelve per cent. fatality as the common result. In order to show my plan of treating pneumonia, I will give a case in point.

When called to a patient with cough, pain in one or both sides, fever, with difficulty in breathing, as the general symptoms, I order a dose of the comp. cath. pills of our dispensatory, apply a blister over the seat of pain, and give a cough mixture composed of syrup ipecac and paregoric or laudanum, with directions to give 12 gr. doses of quinine every four hours, till 3 doses are taken—after the operation of the pills. On the second day's visit I find the symptoms something better. Continue cough medicine, and order 3 doses of quinine, 10 grains each, one every four hours; keep blisters poulticed. Third day, continue cough medicine and quinine, as on yesterday. Fourth day, find all symptoms better; continue cough medicine, and order 3 doses of quinine, 8 grains each, every four hours. Fifth day, continue cough medicine and quinine. Sixth day, lessen cough medicine, and give tonic doses of quinine for a few days.

Generally, on seventh day convalescence has begun, and instead of a ten or twelve days' struggle, under the depressing use of bleeding, a sore mouth from mercury, and sick stomach from tartar emetic, my patient is ready to get up with a good appetite, without the effects of the spoliatives above mentioned.

I use no arterial sedatives, as digitalis, or veratrum viride, for I find the quinine to answer admirably in controlling the circulation.

In all swamp or low lands, there is always a malarial impression on all diseases, and this complication is most successfully combatted by the great *antiperiodic, quinine;* so that I consider a physician almost culpable who denies his patient the benefit of this antidote. I wish to impress the idea upon the junior members of the profession, *not* to withhold the use of the remedy because there is high fever, a full, high, bounding pulse, at the beginning of the disease, but begin and give it as soon as an action is obtained from the pills, and continue it (in 10 grain doses at least) for four or five days, according to the gravity of the case. You will notice I apply a blister at first visit; this is contrary to our standard authors, who advise them in the latter stage of the

disease, if at all, but my observation teaches me to use them early—the sooner the better. If the cough, with pain and great restlessness, ensues, at night especially, give Dover's powder. Opiates, as a general rule, must not be pushed too far, but on the other hand, the pain and restlessness must be controlled by their use in some form. In 60 cases of the disease I have not lost one, and this success I attribute to the liberal use of the sulph. quinine.

In conclusion, let me say, make *quinine* a *sine qua non* in the treatment of pneumonia.

PROCEEDINGS OF THE NEW ORLEANS MEDICAL AND SURGICAL ASSOCIATION.

Answers to Surgical Questions.

Paper read by Dr. F. Lœber.

What is the value of Esmarch's apparatus? Have any ill results followed its use? Which is the best, simplest, and cheapest tourniquet?

Hæmorrhage during an operation is the great danger which must be guarded against, says Erichsen, and we see that it was the aim of all surgeons and at all times to effect this.

When in olden times the surgeons performed their operations with heated knives, or put the stumps in melted wax, it was done with the intention to arrest hæmorrhage. Since Ambrosius Parè showed how to master it either by tying the vessels or compressing them above the place to be operated upon, a great many methods were advanced and apparatus invented to prevent the loss of blood during an operation.

That a great many of these instruments were defective, is shown by the fact that so many of them were invented and none of them have kept possession of the whole field. A great many surgeons were even so much disgusted with these apparatuses, that they dispensed with them entirely, and the afflux of blood of the principal vessel was arrested by digital compression only; but the patient lost considerable blood by this method in spite of very quick operating, and in spite of the digital compression, if the operation lasted, by some accident or another, longer than it was anticipated. Digital compression only prevented the bleeding from the principal vessel, and not from the collateral circulation. Good and efficient assistance was not always at hand, and therefore was a tourniquet, with all its deficiencies, a very useful article for the doctor, and could be found in the possession of most every one. It is not my intention to give you a description of the different tourniquets and their special merits.

I think the tourniquet principally used of late was the one devised by I. S. Petit, and Erichsen, in his Surgery, gives us an excellent article on the modus operandi of tourniquets. I think if Esmarch would have read that article, it would not have taken him so long to construct his tourniquet. Erichsen says: "When the tourniquet is to be applied" (speaking of Petit's tourniquet), "the pad should be carefully placed over the artery, and the band buckled rather tight, but the instrument should not be screwed up until the moment of the operation; it should then be tightened rapidly, so as to lessen the liability of congestion of the lower parts of the limb, which always occurs if the tourniquet is applied, but what is specially apt to ensue when the instrument is slowly screwed up. The first effect of the tightening of the tourniquet is to compress the large veins of the limb, and second, to arrest the flow of blood through the arteries. The more slowly it is caused to act, the greater will be the venous congestion of the limb. The blood that flows from the limb during an operation is almost entirely venous from the lower part of the member." Still further he says: "In those cases in which it is of great importance to save all the blood we can, it is a good precaution either to keep the limb raised for a few minutes before the application of the tourniquet, or to bandage it tightly from below upwards immediately before the tourniquet is applied."

Esmarch, Professor of Surgery in Keil, tells us in his essay on bloodless operation, that in the year 1855, after an amputation of the thigh on account of a large osteo sarcome, he was astonished, by careful inspection of the amputated limb, to find such an enormous quantity of blood, and from that moment concluded to be henceforth more careful with this noble juice. He tried to prevent the loss of it by bandaging the extremity from below upwards; "but," says he, "it was not satisfactory. I only bandaged the extremity to the point where I intended to operate, and made digital compression only. In spite of all my precautions, and in spite of operating very quick, I lost much blood." Experimenting continually, he found that he could arrest the circulation very easily with an india rubber tube, and used it instead of digital compression. After that step, the present Esmarch's apparatus was soon constructed. Instead of a simple bandage, he made use of an india rubber bandage—one he generally used in the treatment of hydrops of the joints. If Esmarch, as I have said above, would have studied Erichsen, it certainly would not have taken him so long to construct his apparatus. It is in reality nothing else than an improvement of Erichsen's method, or better, that method already in use a long time in England. To make this apparatus still more simple, we might substitute for Petit's tourniquet a piece of rope or a handkerchief and tighten it by a piece of wood; this unquestionably would be the simplest and cheapest tourniquet and certainly always at hand. The improvement of Esmarch I consider the best tourniquet; the

india rubber tubing is more simple than the instrument of Petit, not so costly, and more preferable and effective on account of its elasticity—the same, we may say, of the elastic bandage.

No bad results are reported as having ensued from its employment, according to Dr. Sands, President of the Medical Society of New York, in a paper read on the above subject at the anniversary meeting of that society, comprising 143 cases; and Prof. Esmarch himself, after making several hundred operations, as amputations, resections, ligating arteries, and resecting nerves and bones—also of other surgeons, all speak favorably of it, and report no bad results from its use. Only one precaution Esmarch insists on and that is not to use the bandage, if we have to operate on parts infiltrated with bad pus; if we should bandage the parts tightly, we should run the risk of pushing these infectious substances into the intervals of the connective tissue and openings of the lymphatics, and by this produce pyæmia and other bad consequences. In such cases he only applies the tube above the inflated part.

Hæmorrhage produced by Esmarch's apparatus, Dr. Sands denies, but he refers to temporary paralysis as occasionally following its employment, and advocates the use of an elastic bandage, as recommended by Langenbeck, instead of the solid tubing, and thinks that the repetition of this accident might be prevented by it.

Which are the best means to bring about reaction in case of shock? Should reaction be slow in taking place after shock, must we wait until it is complete or not? If not, how long should we wait, and upon what signs should we base the reason of our action? When an injury is accompanied with hæmorrhage and great shock, should we amputate at once, in spite of the shock, to save his blood, or should we wait until he has rallied some? Is a secondary amputation, after fever and inflammation have gone, and suppuration set in, better or worse than a primary amputation performed on a patient who is rallying, but incompletely, from shock?

Gentlemen—a rather long list of questions to answer, but since they are all connected with shock, it is necessary to ascertain first what is shock.

Erichsen says: "Shock consists in a disturbance of the functions of the circulatory, respiratory, and nervous system, the harmony of action of the great organs of the body becoming disarranged."

Savory defines shock "as the paralyzing influence produced by a sudden and violent injury of nerves or nerve centres."

Jordan defines it "as the peculiar condition of the animal organism characterized by the subdued condition of all its functions, which condition has its origin from a powerful influence upon the central organs, or upon a considerable part of the peripheral nervous system."

It is not necessary to give you a picture of a man laboring

under the influence of shock—we all have seen it. I only appeal to your memory, and beg you to recollect that there are two kinds of shock—the torpid and the erethic kind; in the former the patient is perfectly prostrated, in the latter he is more or less restless or excited. Both forms of shock occur independently of each other, but, as experience shows, are connected with one another. We see, for example, that a patient laboring under a torpid form of shock, if he reacts, goes into the erethic form, and vice versa. A patient laboring under the erethic form of shock, if he gets worse, falls into a torpid condition; we might therefore call the erethic form, as Prof. Fischer does, the second stage of the torpid. Shock generally disappears soon; the erethic form lasts minutes or several hours, the torpid form may last for several days: both of them may end in death under symptoms of the greatest nervous prostration.

As a general rule it may be laid down, that the younger the patient the less the loss of blood, the more judicious and prompt the assistance, the sooner will the symptoms of shock disappear. In regard to the influence shock, after its disappearance, has on the healing of wounds, authors do not agree, some think that the more severe the shock the lesser will be the hight of temperature on the fever afterwards. Others say that the torpid condition is generally followed by bad symptoms; the wounds do not heal, the patient sinks, has chills, etc.; others again did not see anything of the kind, and my experience, gentlemen, is too limited to give you my own opinion; I would like to hear the opinion of others present. Another question, and often a very difficult one, may be brought forward, and that is how do we distinguish shock from commotio cerebri or syncope?

The commotio cerebri distinguishes itself from shock, by the patient being deprived entirely of sensibility and consciousness, and by the slow, sluggish, regular and full pulse.

Pirogoff says, "the patient laboring under shock is not insensible to his pains, but he is stiffened by it." More difficult is the distinction between syncope and shock. "They differ in degree more than in kind," says Travers. Syncope may be produced by mental or physical overaction or sensible impressions, great loss of blood, violent pains, degeneration of the substance of the heart. Shock, on the contrary, is produced by violent contusion of some parts independent of pain or loss of blood. In syncope we also have insensibility and unconsciousness, but it is, so to say, more acute, and disappears quicker than shock.

Now, what is shock? If we make a post mortem on a patient who died under shock, we find, except the injuries received, no characteristic pathological changes of the principal internal organs, and we naturally ask, how did that man die? Physiology gives us an answer. Goltz has found by experiments on frogs, "the poor mute friends of Doctors," as Huetor calls them, that contraction of the heart may be stopped by repeatedly beating the integuments of the abdomen. After a while contraction of

the heart commences again, but the aspect and condition of the heart differs materially from the normal. It remains small and pale; during diastole receives hardly any blood, and can propel therefore during systole very little. The circulation of the blood stops, so to say, in spite of the heart's contraction. After the lapse of half an hour the normal circulation is generally re-established. Goltz's explanation of this symptom was, by mechanical injury the contractile power of the vessels is lost, and finding the intestines full of bood, he thought that the vessels of the organs directly influenced only lost their contractile power; but further experiments showed him that not only the vessels of the organs directly influenced were affected, but the paralysis extended itself over the vessels of the whole body. I say vessels because Goltz has shown that the veins possess also the power of contraction, and also lose it.

By a violent contusion, therefore, affecting part or the whole body, a paralysing effect is produced in the heart and circulatory system. The question now might be asked, what then becomes of the blood? Another physiological fact comes to our assistance. According to the experiments of Bezold and Bever, Bourdon and Sanderson, after cutting the splanchnic nerve the vessels of all the abdominal viscera are seen to be dilated. The portal system is filled with blood, the small vessels of the mesentery and those which ramify on the surface of the intestines are beautifully injected, the vessels of the kidneys are dilated and the parenchyma hyperæmic, all of which facts indicate, not merely that by the relaxation of the abdominal blood vessels a large portion of the resistance to the heart is annulled, but that a quantity of blood is, so to speak, transferred into the portal system, and thereby as completely discharged from the systemic circulation, as if a great internal hemorrhage had taken place. The influence of all other nerves of the body, supplying vessels, is comparatively small compared with that of the splanchnic, and we may, therefore, accept Fischer's definition of shock, "as a reflex paralysis produced by traumatic influence of nerves and nerve centres, and principally of the splanchnic nerve." The veins of the cœliac axis, inferior and superior mensenteric and renal, are enormously enlarged, and afford ample space to all the blood of the body.

These physiological facts explain easily all symptoms of shock. No blood is contained in the vessels supplying the integuments, and we find the skin pale, cold and deprived of sensibility; but some blood is retained in the veins and produces that bluish tinge; we also know that muscles deprived of blood lose their contractile power, during shock they are deprived of their regular quantity and we have muscular weakness. The irregular pulse is explained by the irregular contractions of the heart, produced by the want of its proper stimulus, a sufficient quantity of blood. The emptiness of the vessels of the brain produce stupidity, apathy, inclination to vomit, or vomiting itself.

This is, in short, the ætiology of shock; the treatment of shock is purely symptomatical, we have to provide our patient with artificial heat, cover him with warm blankets, and apply warm bottles and friction to his skin, at the same time we give him stimulants, warm punch, warm coffee or tea, or wine, or an anodyne to quiet him a little; and if the case is a very severe one, we may have to make artificial respiration; electrical irritation of the heart by needles thrusted into the substance of the heart, is dangerous. But several authors recommend very highly the application of the electrotes to the phrenic nerve and general surface, also irritants, as mustard poultices, are recommended. Fischer thinks the calabar bean subcutaneously should be tried. He says that according to Escheidlen the calabar bean is the best excitant of the splanchnic nerve. In poisoning by calabar we have a strong contraction of the intestines, by which their diameter is lessened, the smaller vessels look like strings and can hardly be seen, so much are they contracted; if the intestines are contracted, the vessels ramifying in and on them are compressed, and the blood is pushed mechanically out of the intestines into other parts of the body.

In regard to the time of operating, I think the rules laid down by Guthrie are at present generally adopted by the profession, he says: "If your patient, two, three, six hours after the injury commences to react, the pulse gets normal, more quiet, his general appearance more animated, and he commences to complain about pain, stiffness, etc., then is it time to operate; but, if on the contrary, the operation is performed before he reacts to a certain degree, then by operating on him, you put more on him than he can stand, and he will die If the shock is not very severe, or the pulse, after applying anodynes and stimulants, improves, and the patient commences to react, although reaction has not taken place entirely, but bleeding, severe pain, or exposed nerves demand the operation, then, according to the best authorities it is not necessary to wait any longer with the operation, and experience teaches that during the operation the pulse commences to improve, the temperature of the body increases, and the paleness of the face disappears. Goltz explains these phenomena by his mute friend again in the following manner: He found that he could not bring on shock in a frog by beating its abdomen, as stated above, if he produced simultaneously with the beating an intense irritation of the sensitive nerves of the extremities. He thinks that violent pain of the extremities produces a paralysing influence on the medulla oblongata, which is, therefore, unable to transmit the lesser reflex irritation. This fact is also proven by the experiments of Brown-Sequard.

Bleeding is not an absolute indication for operating; if very severe, we may tie the vessel or vessels in loco necessitatis, or electionis. Several successful cases are recorded by Fischer, where Prof. Volkman, of Halle, tied arteries to stop bleeding, and performed the operation 24 hours afterwards. By doing so

be avoided the danger of operating during shock, reaction having not taken place sufficiently. This finishes the question connected with shock, and we come to the question, Is a secondary amputation during the period of fever and inflammation worse than to let the patient alone?

Hamilton, in his Surgery, says—and as far as I am aware all the other authorities agree—"The danger of amputating in what is called the intermediate period, can scarcely be over estimated. The period is marked by two conditions: the first, and that which is most generally understood by surgeons, is a well defined condition of inflammation, with the consequent swelling of the limb, commencing at a variable time after the receipt of the injury, and progressing with unequal rapidity in different cases, but it is seldom well declared within the first 24 hours, and is rarely delayed much beyond 48 hours. The second condition has not been so often noticed by surgical writers; it consists in a serous, with perhaps more or less bloody, infiltration of tissue, unaccompanied with marked signs of inflammations, and it is not attended with much general reactions in the system. I have found this condition present on the second or third day in a pretty large number of cases, and have *constantly* observed, that death results even more certainly after amputation under these circumstances than when the limb is actually inflamed." Billroth says he would not risk it during this period; the thrombus formed in the veins is not organized yet, and by amputating we are apt to break it up and produce emboli.

Which is the best treatment for painful stumps?

It all depends on the cause. If produced by a tuberose enlargement of the nerve end, which is pressed against or by the cicatrix, then excision of the nerve, or even resection of the bone, may be necessary to remove the pain; but if constitutional influences are the cause, no resection, excision, or amputation, will do any good—we have to improve the general condition by iron, fresh air, etc., and mitigate the pain by subcutaneous injection of morphine, or by the use of other remedies. I should try the effect of the constant battery, if the pain was of a neuralgic character. Twitching of the muscles of the stumps, which produce sometimes real trembling of the stump and pain hardly bearable, is best allayed by fixing the stump by a pretty heavy plaster of Paris bandage, and at the same time using morphine subcutaneously.

Are amputations through the joints worse or better than amputations through the continuity of bones, near the joints, or far from them?

The liability of diffuse suppuration, and consecutive phlebitis and pyæmia, is certainly less in amputations through the joints than in amputations through the continuity of bones, near or far from joints, where the medullary canal has been opened, and they are therefore preferable. On the other side, after an amputation through the continuity of bones, is the wound smaller,

simpler, and contains relatively a smaller, but wounded, surface of bone, and proportionally little fibrous tissue. After an amputation through the joints, there remains an uneven, large wound, a large surface of bone, and a large quantity of fibrous tissue. Such a wound is more difficult to unite properly, and therefore healing per primam intentionem rare. After amputation through the continuity we have to fear inflammation of the marrow, bleeding from the bone. In amputation through the joints, we meet often with extensive inflammation of tendons and their sheaths. If suppuration sets in, we have to fear that the remaining ligaments and the cartilages get necrotic, lay the bone bare and keep up a long suppuration; but according to Billroth, Syme, Ferguson, this is very seldom the case, and Billroth advocates, for example, the amputation through the knee joint—in former time the horror of all surgeons. He says, the cartilage after exposure undergoes rapidly certain pathological changes, and flaps unite with exposed articular surfaces as speedily as union is known to occur in other wounds.

Since on both sides the advantages and disadvantages are very nearly equal, I think it not advisable to give to one or the other method the preference; and if the seat of the injury allows the choice between one or the other operation, I would make the one by which the greatest extent of the extremity would be saved. The longer the stump, the more useful will it be to the possessor; and experience shows that the nearer an amputation is made to the body, and the larger the diameter of the limb, the greater is the danger to life.

What are the disadvantages of Choppart's operation? What are the means to remedy them, and when should we apply them?

The objections to Choppart's operation have been, that the patient is not able to make use of his stump; the heel drawn up, the foot standing in the pes equinus position, the cicatrix not looking forwards but downwards, the poor patient is not able to walk at all, or only under excruciating pains. Malgaigne, and with him many others, said about Choppart's operation, the results are so bad that it would be better not to make it at all; others, on the contrary, deny it, and contend that Choppart's operation gives a very good result. Both men are men of great celebrity and veracity. It is difficult to comprehend how it is possible that this fight is not settled yet, although Choppart published his method already in the year 1792, and many hundreds of operations are already made according to his method. But it shows how difficult it is to form a conclusive opinion about a new method of operating.

Before we go to the other question, what are the means to remedy them, let us consider first the different opinions in regard to their causes. Some say the heel is drawn up by the tendo Achillis, because all the antagonistic muscles are lost; the posterior arm of the lever only remaining, gives to the tendo

Achillis a power it never had before. Others, again, say that this elevation of the heel, and the descendence of the articular surface, is not produced by the action of the tendo Achillis, but by the weight of the body, which presses the astragalus downward and forward, and so gets the stumps in a position of subluxation, and the tibio-tarsal joint not being used, loses its functions and gets ankylosed.

M. A. Petit cut the tendo Achillis already at the end of the last century, to remedy the perverse position of the stump after Choppart's operation. Long after him, tenotomy was very highly recommended by Larrey, who published a successful case in *Annales de Chirurgie*, December 1841, but Verneuil, and many others, could not see any good results from the operation, and so tenotomy was again forgotten. May be they neglected the orthopedic treatment, which is absolutely necessary after tenotomy, and expected everything from the cutting of the tendon. Larrey, even, who was most loud in his praises of tenotomy, did not neglect to follow it with an appropriate orthopedic treatment.

The publication of the pathological condition of several Choppart's stumps, by Verneuil, Linhard and Stawsky, attracted the attention of the surgeons, and interested them again for this operation. It was found that the tendo Achillis was perfectly relaxed, forming in some cases a perfect bow, and still the pes equinus position had existed, and it was demonstrated that this condition was not produced by the tendo Achillis, but by an inflammatory process in the joint or in the bones around the joints, which had existed in these places already before the operation was made, and was overlooked and commenced again after the operation. This malformation was increased by the natural tendency of the remaining part of the foot itself. No one would have wondered, says Max Schede, that this should happen where we have inflammation of the ankle, or disease of the tarsal bones the whole foot remaining, if we neglected to support the heel properly. We all know that it is the natural tendency of the foot, if not properly supported, in all diseases of the foot or leg, to fall in the pes equinus position, but since Choppart's operation was made, this operation had to be the cause of it; that after Choppart's operation the stump has the same tendency as the whole foot before, no one can deny, and we can easily convince ourself, if we look at a perfectly useful and well healed Choppart stump, it will sink in the equinus position, like every whole foot in a state of rest. But there is another cause for a little elevation of the heel after a Choppart's operation, on account of the anatomical structure of the foot. The planta of the foot forms an arch, the pillows of this arch are the tuberosity of the os calcis and the tuberculum of the fifth and first metatarsal bone. The arch is larger on the inner than on the outer side. In Choppart's operation the foot is amputated through the highest point of the arch, and if now the patient commences to

walk with his stump he must necessarily make a little plantar flexion to bring the anterior ends of the calcaneus and astragalus to the ground; in the healthy condition they never touch it. A priori we might expect that this natural inclination would increase by continued walking and produce at last a subluxation, as Czimanowski thought, but experience has shown that it is not so. We might, with the same reason, expect that a man with a flat foot by constant walking will get a pes valgus

What are the means to remedy them? First and foremost, a large plantar flap, if the flap is too small, the healing process is slow—the patient likes to get out, but to walk on the granulating stump he can't, it is too painful, and he tries to get along on crutches and lets the stump hang down; naturally it takes the pes equinus position. Secondly. Remove all dead or affected bone, by using Eshmarch's apparatus—it can be easily done; in former times it was impossible, and it was often the cause of subsequent ulcerative processes, with all the bad consequences in the stump. Thirdly. Keep the stump during the healing process in the utmost extension; that is the principal thing to do; but simple as it looks, it has troubled and annoyed surgeons already considerably. To effect it Boyer and Textor laid the patient on his side with his knee flexed, and tried to keep the heel down with adhesive strips secured by bandages. They had good results. Textor operated 32 times, never a pes equinus. Blasius, who reports 21 cases, used the same method of treatment, but thought it advisable to have the extensor tendons very long, and tried to heal them in between flap and bone, so that they might counterbalance the action of the tendo Achillis. He had also very good results, one pes equinus he reports, but here the pes equinus had existed already, before the operation. The method of Blasius did not find many followers; it was uncertain, the tendons became very easily necrotic and prevented healing. Others again, as Huguier, Demme, sen., Dumreicher, said we had better cut the tendo Achillis any how, even if the separation of it does not help anything after pes equinus is formed; as a prophylactic it is good; but at the same time, they used Boyer's treatment and had good results. But what is the use to cut the tendo Achillis, if, with the same treatment we gain the same result, without any more trouble? The tendo Achillis is not shortened, and gives no resistance to extension. The tendo Achillis produces no flexion in the stump, even if it is cut, we have the same plantar flexion, if the stump is not sustained by adhesive strips, bandages, etc., as I have told you above.

Lately, the plaster of Paris bandage has taken the place of all the other bandages, at least in Germany, and to the entire satisfaction of all surgeons. The mode of applying it is as follows: First, a layer of wadding is applied and nicely fixed by a flannel roller, after that a compress saturated with plaster of Paris is applied to the posterior part of the leg, bended over the heel,

which it encloses like a hook, reaching from below the knee pretty near up to the wound of the foot. This compress is again fixed by a bandage of musquito bar stuff saturated with plaster of Paris, so that the compress adapts itself nicely to the form of the leg and foot. The wound remains open. The whole bandage, to lay secure, has to extend three inches above the knee joint, with the knee itself slightly flexed. It is advisable not to apply the plaster bandage immediately, but wait about six or eight days, till swelling and secretion are not so great any more, and the sutures are removed. If Lister's plan of treatment is adopted, then the bandage is applied still later, till all danger is passed, and only superficial wounds remain.

The stump rests then perfectly secure and immovable in the most favorable position. The heel can not sink down, and it is easy to see that the bandage favors a quick healing of the wound, since every motion of the stump, and by it pulling of the granulating tissue and young cicatrices, is prevented. The best adaptation of the flap is provided for.

The bandage does everything we wish for in a later period of the healing process; but during the first days we must do everything in our power to bring on healing of the wound per primam intentionem. To do this, we have to unite the wound by several deep silver wire sutures to produce adaptation of the wound in the depth, and at the same time to counteract tension; the rest of the wound must be closed by intermediate fine silk sutures, which have to be applied with as great care as in a plastic operation of the face.

The deep sutures remain in the wound a little longer than the superficial ones—say from 4 6 to 8 days—and to assist and prevent them from cutting in too deep, the plaster bandage is applied before their removal. Healing per primam intentionem succeeds very easily if the sutures are applied carefully. Max Schede succeeded in every case he operated on—10 cases; but the same author says, that healing per primam intentionem is not absolutely necessary to achieve good results, and reports several cases where the sutures, on account of bleeding, could not be applied before the 6th or 8th day. Good results were obtained any how.

Choppart's operation has been during late years principally cultivated in Germany, and Max Schede has given statistics of 168 cases during the last 12 or 15 years. 132 cases got well, and the result is known. 110 could walk good, some excellently; 12 could walk, but not good; in 9 cases amputation had to be made, and the mortality was 13 $\frac{26}{100}$—in my opinion, very good results.

Since writing the above on shock and its treatment, I have had occasion to make use of a remedy—sulphate of atropine—not mentioned by me, and recommended by my friend, Dr. W. H. Watkins, during the discussion of the subject.

A. B., aged 36 years, single, a native of Poland, applied at the

Touro Infirmary for treatment, on account of several fistulous openings on the inner condyle of the femur of the right leg.

General health good, and able to walk, with the aid of a stick, on the affected limb. Knee anchylosed; two fistulas on the inner condyle, one more posteriorly, discharging a thin pus; no pain, no fever. The disease was of three years' duration, and he attributed it to taking cold after dancing, his general health having been perfect up to the time of the violent exercise. Necrotic bone could be felt with a probe, but his general health being so good, and the discharge so scant, it was my opinion that the disease, which had commenced in the knee joint, had ended with its anchylosis, and that the necrosis was of limited extent, and only involving the inner condyle, and that by the removal of the dead bone he would have a serviceable limb.

In presence of Drs. W. H. Watkins and Schmittle, the man was placed under the influence of chloroform, and after the application of Esmarch's bandage, an incision was made along the inner aspect of the knee, and the bone laid bare. Several pieces of necrosed bone were removed, but the further I went the more I found, and on digging still further, I fell in a perfect hole filled with the most offensive pus. After emptying it, I found that the lower end of the femur and upper end of the tibia, anchylosed, consisted of nothing but a thin, paper-like shell of bone, and it became clear to me that amputation was necessary. After consulting Drs. Watkins and Schmittle, we concluded to amputate in the middle of the thigh; but after amputating the limb, we found the bone still diseased, and had to dissect the flap back and take another inch of the bone off: here we found the bone in a perfectly healthy condition. The vessels were tied and the wound dressed without any trouble, and the patient was put to bed. Chloroform had been discontinued already during the dressing of the wound, and everything seemed to progress favorably, but after bringing him to bed, we found that our patient was laboring under the most terrible shock. His face was pallid, and of a bluish tinge, covered with a clammy, cold perspiration, the nose pointed, the eyes glassy, sunken in, with dark, black circles around them, hands, feet, and trunk cold, and also covered with that clammy perspiration; the intellect impeded; he answered our questions but slowly; pulse 46 in a minute, small and irregular, respiration 12 in a minute, no vomiting or inclination to vomit. By the recommendation of Dr Watkins, who had used it with good results in the collapse of cholera, I injected 1-48th of a grain of sulphate of atropine subcutaneously, combined with one-tenth of a grain of morphine. After a minute or two the pulse became better, and five minutes afterwards we counted 52 in a minute, but still fluttering and sometimes intermitting; it remained so for the next half hour, and we concluded to give him another injection of the same strength. Immediately afterwards the pulse became fuller, increased in frequency, and half an hour later the pulse had risen to 68 in a minute; the hands commenced to get

warm, also the face and trunk; the cold sweat disappeared, and the skin became more natural; the lower extremities still were cold, and covered with sweat. We left the patient to perform another operation, and after the lapse of an hour returned, and found him perfectly recovered. His face was flushed, the whole body and extremities warm, intellect perfect, the iris slightly dilated, but reacting under the influence of light; pulse 90; respiration 20 in a minute; temperature 99½. Four hours afterwards, pulse 80, respiration 19 in a minute, temperature 99½. The temperature during the first eight days never rose above 99½; on the 9th, in the evening, and 10th, in the morning, it rose to 100½; after that it varied between 98½ and 99½. The first dressing and sutures were removed on the 5th day. On the 9th day the smaller ligatures came away, and on the 13th day the ligature of the femoral artery. To-day, 24 days after the operation, the whole stump is healed with the exception of a small space in the middle, where the ligatures came out, and two small spaces on the corner of the wound.

Bromide of Potassium—its Therapeutic Uses.

By Wm. P. Brewer, M.D.

In presenting this paper I do not propose to bring forward anything original, but merely give a condensed report of the experience of those who have made extended use of bromide of potassium in the treatment of disease, and at the same time add my limited experience, being satisfied that this medicine is one of the most useful remedial agents in our possession, and also one that is as frequently misapplied, as applied properly. Having passed through its ordeal of fashion like many of its predecessors, viz., fashionable medicines, it became in a short time after presentation into practice over-rated, and misapplied, proving useless and inert in many cases, and frequently mischievous. And, as is generally the case with all things over-rated, it has been subjected to the doubts, on the part of some, of having any real value as a remedial agent, while others claim it almost as an antidote for all the ills that flesh is heir to.

As to its exact mode of action, researches so far have not placed us in a position to speak with certainty. But this we do know from clinical teaching and experience, that in a large number of diseases it has the power of doing much good. From the researches of Bowditch, Voisin, Laborde, and many others of equal merit, it is shown that any mucous surface, but particularly that of the stomach, has the power of readily absorbing this drug. In a healthy and empty stomach, with the potass. br. largely diluted, the whole dose is rapidly absorbed and carried into the circulation. In certain conditions of the stomach, as in irritation or inflammation of the mucous membrane, the drug, if

absorbed at all is absorbed slowly, but it is more frequently rejected by vomiting. In sympathetic vomiting however, where the mucous membrane is in a healthy condition, the potass. br. is not contra-indicated, and will be readily absorbed. Taken as a powder it is slightly irritating, and may be rejected. Though it is absorbed by the rectum, it is done so, so slowly, and it must be given in so large a solution, that it is always preferable to employ the stomach if possible. This drug being affected by the acids in the stomach, producing gastric irritation and eructation, it is advisable to add to the prescription some alkali, as carb. of ammon., or carb. of soda.

From the experiments of Dr. Amory, it appears that the skin does not absorb potass. br., unless the solution is considerably below blood heat, and then but slightly. Its irritant properties would forbid its hypodermic employment, as, if used in remedial doses in this manner, it would produce inflammation, and sometimes suppuration. So far as experience goes, it is eliminated principally by the kidneys, and moderately by the skin, and the elimination is not so rapid as the absorption.

According to Rabiteau, traces of it appear in the urine within ten minutes after it has been swallowed. (M. Rabiteau, Societé de Biologie, July, 1868.)

Others have been able to detect a trace several days after the last dose given, though a greater part is eliminated in twenty-four hours, sometimes in from seven to ten hours. The knowledge of this difference between absorption and elimination, is of much importance to us in the treatment of disease where we want either a limited or continued supply of potass. br. in the blood. It is seldom that *bromism* is produced by small doses, but often where this drug has been used in large quantities, and continued doses. The symptoms of *bromism* which will rapidly disappear on discontinuing its use, are "Acne on the face, redness of palate, epigastric heat, œdema of the mucous membrane of the mouth, and salivation or bronchial catarrh, heaviness, drowsiness, confusion of ideas with irritability of temper, and weakness of muscles with occasionally an ataxic gait." In one case I have seen *bromism* caused by five grain doses of the drug given every five hours, and cease upon withdrawing the medicine, and commence again upon a repetition of it. Its therapeutic action varies with the dose, the manner of giving it, and the pathological condition of the system.

The dose is given either single or continued, and if given either way in excessive quantities it will cease to act therapeutically, and become toxic in its action. The ordinary single dose to prove effective on the system ranges from twenty grains as a minimum, to sixty grains as a maximum. A full dose produces a decided action on the nervous system, followed by drowsiness and sleep. Voisin, when referring to its hypnotic action upon the patients of the Bicétré, says, "It was remarkable both by day and by night. Some patients being obliged to sleep a few

minutes in the midst of work, and that none could resist sleep directly after the evening meal. During the night their sleep was calm, and much difficulty experienced in arousing them in the morning." (Bulletin Général de Therapeutique, tom. 71, p. 102, 1866.)

Dr. J. Russel Reynolds who has had an extensive, if not the most extensive experience in the use of this drug, says, "That from a score of observations there is abundant proof—1st, That it does not lessen the force or frequency of the normal pulse; 2d, The spygmographic tracing of the pulse is perfectly normal in patients who have taken the bromide in large doses for many months. He has found it unchanged in a healthy adult by a dose of forty grains; 3d, The temperature of the body has not, under similar circumstances, been reduced below the normal standard, but in some cases, where this medicine has been administered to those in whom there was slight pyrexia, a diminution of the abnormal temperature has been observed; 4th, That potass. br. does not, in therapeutic doses, affect notably any of the secretions. Occasionally the amount of urinary water appears to be augmented, but there is no constancy in the result; 5th, That it does not interfere with the reproductive functions of either sex."

Here I would state that in a large number of cases in which I have used this drug in large doses, though the ability to perform sexual congress was not interfered with, still the desire was much diminished.

Though the therapeutic effects are best seen when the potass. br. is given to those suffering from paroxysmal diseases, they are not alone limited to such affections, but are observed in many where there is no obvious spasm.

For the purpose of better demonstrating its (potass. br.) definite uses, I will follow the course of Dr. Reynolds, and group the diseases in which this medicine is most useful, as follows:

1st, Those marked by spasmodic contraction of muscles;

2d, Those characterised by disturbances of sensation;

3d, Diseases displaying themselves in mental change; and

4th, Affections of the *vaso-motor* system of nerves.

Under the first head, viz.: those diseases marked by spasmodic muscular contraction, you will find most writers of large experience speak highly of its power. Especially in epilepsy do we find a marked influence exercised by potass. br. either in entirely checking the convulsive seizures or in making them occur less frequently.

As we find that the contraction of blood-vessels forms one of the most important links in the chain of causes and effects in epilepsy and its allied diseases, so can we see how potass. br. acting as a sedative upon the vaso-motor system of nerves, and preventing the irregularity in the supply of blood by reducing that morbid activity which would lead to spasmodic narrowing of the blood vessels, would relieve by producing an equal flow of

blood. Having had some experience in the treatment of epilepsy in which the potass. br. has had a happy effect, I will here mention one case in which the action of this drug was marked: K. C., child of an epileptic, a base ball player noted for immense muscular development, who had, up to the age of eighteen or twenty years enjoyed fine health, when he entered the Confederate army, and in 1863 was captured and sent to Johnson's Island, where exposure and bad feeding prostrated him. During his imprisonment he had two epileptic seizures—was free from any other attack for a year or two, when the attacks came on so frequently he was led to seek medical aid. After trying numerous remedies with no benefit, he voted doctors and drugs humbugs, and determined to give up all treatment, and let the disease run its course.

Having been engaged in a very exciting game of base ball, he felt an attack coming on and tried to ward it off by going to bed, but in attempting to reach it, (the bed), he fell and aroused his family, who, becoming alarmed at the severity of the seizure, sent for me. Though I had never before treated the patient, I surmised the manner in which he had previously been treated, and thought it a good case in which to try the effect of the potass. br.; ordered it to be given by enema in ʒiij doses every two hours until two doses had been administered, or the convulsion checked; after which, to take by mouth a mixture containing twenty grains in each dose every five hours. Next morning finding the patient in his usual condition of health, advised him to take fifteen grain doses, to be increased to twenty if needed, three times a day. He followed this treatment for some time, and as long as he persisted in it he was exempt from the attacks. At last, becoming tired he ceased taking the potass. br., and leading a very irregular life he had a return of his convulsions. Having again been consulted by him, I advised a continuance of the same treatment. As long as he did so, he was free from convulsions; but, like a majority of such cases, he soon again became tired of forever drugging himself, and ceased to take his remedy with regularity. Having stated to me he had a warning some time previous to an attack, when to expect one, I, acting upon the proverb, "*forewarned, forearmed*," advised him when threatened with an attack to take from fifteen to twenty grains of the potass. br. every five or six hours the first day, and afterwards the same quantity three times a day for several days. Whenever he pursued the course advised he was enabled to ward off the threatened attack, and whenever he paid no attention to his warning he was sure to have one or more convulsions. As long as he pursued, with sufficient closeness the course laid out for his treatment, he seemed to enjoy good health, and had in a certain measure lost that peculiar expression of anxiety so frequently seen in these cases. His memory, which had partially failed him, was greatly improved, together with his cheerfulness. Previous to the use of the potass. br. sexual

congress was always followed with a seizure, but after its use a short time he was relieved on this score.

The bromide, in this case, had no bad effect on his appetite, but on the contrary, it was improved; and instead of its use producing dull stupidity, his intellect seemed to clear up, both effects being at variance with most experience—at no time was there *bromism*. I am satisfied that had not this individual have had his life shortened by the hand of an assassin, he would have eventually recovered from his fearful affliction.

I think it well, at this point, to refer to the following observations on the use of potass. br., viz.: "From observations taken weekly on ten patients, four females and six males, in the Sussex County Lunatic Asylum, Hayward's Heath, it was found that potass. br. given in doses not exceeding ʒj daily, almost invariably increased the weight of the body, and even in ʒij doses the weight need not necessarily diminish, but rather the chances are in favor of its increasing. The appetite was never impaired, and the functions of the secretory and excretory systems were not perceptibly affected in any instance. As regards the alleged failure of memory, no opinion could, of course, be formed from observations derived from insane patients, but the medical officers, from whom we are quoting, state that they have not, in their experience of the remedy, had any evidence in support of such a view." (Note in *Lancet*, '72, p. 392.)

In hysterical convulsions, with but a single exception, the potass. br. in my hands has failed to have any effect. The exception was a case where the convulsion resembled epilepsy so closely that I have never been satisfied as to the correctness of my diagnosis.

In chorea, I have had no experience in the use of this drug, and if any gentleman present has used it in this disease, I would be pleased to hear from him on the subject. Some writers state that it is useful in these cases, and others again state that in their experience, it has no effect.

In local clonic spasm and in persistent tonic spasm in my hands, potass. br. has utterly failed.

Dr. Reynolds who has had large experience, says, in referring to the uses of this drug in the treatment of spasmodic diseases: "It would appear, (1), that its efficacy is most marked where the malady is paroxysmal; (2), that its value is high in proportion as the disease approximates the type of convulsion, known as "epileptic"; and (3), that where spasmodic movements are habitual, be they either tonic or clonic, local or general, its remedial influence is at best, extremely doubtful."

II. In those diseases marked by occasional disturbances, there are a sufficient number of facts to prove that the use of potass. br. is of much benefit. Take, for instance, those attacks of vertigo which occur spasmodically without any indications of organic *brain lesion*. In these cases, the patient merely has an attack of vertigo without loss of consciousness, or failure of mus-

cular power. The potass. br., in such cases, gives temporary if not permanent relief. It may be, though there is nothing indicative of the fact, such cases bear close relationship to epilepsy, and both are benefitted by this drug. In but one case of this kind have I had an opportunity of using it, and in that case there was marked relief, and no return so far as I can learn. In several cases of paroxysmal attacks of headache, I have found much relief following its use, and in two cases permanent cure has followed the administration of it in large doses.

III. In diseases where the cerebral centres are affected so as to prevent sleep, potass. br. has had, in certain cases, a very happy effect; but to produce the effect, it has to be used in large doses, say of thirty or forty grains at night, preceded by smaller ones during the day. In acute mania it will frequently produce refreshing sleep, though not always, while on the contrary, I believe the experience of all is, that in the wakefulness of melancholia, in a majority of cases it is perfectly useless, though in a few cases it is productive of much relief and rest. In the *Practitioner*, Vol II, C. Fielding Blandford, Lecturer on Mental Diseases to St. George's Hospital School, in an article on the Treatment of Acute Delirious Mania, speaks highly of its sedative power in this disease. In the wakefulness of alcoholism it is most useful, often producing sleep where opium has failed or been thought unadvisable. Wm. More, Physician to Sir. P. Dun's Hospital, reports a number of cases of continued fever, in which there was great delirium with inability to sleep, much relieved and quieted with potass. br. given in fifteen or twenty grain doses. (*Practitioner*, Vol. IV.)

In my hands it has had a very happy effect, when administered in the delirium, wakefulness, and restlessness of scarlet fever.

IV. Affections of the *vaso-motor* system of nerves.

Under this head we have a class of affections, or a disturbance of the *vaso-motor* system in other parts of the body besides the head, in which this drug (potass. br.) gives much relief—the same derangement taking place in the skull as before named, as epilepsy, epileptoid seizures, vertigo, and the like. Throughout the body, similar changes in the circulation to that of the head may occur, and then we have symptoms as follows: sudden numbness, coldness, sticking sensations, etc., in the limbs; those indescribable and fearful feelings in the epigastrium, abdomen or hypogastrium, sudden shivering, with palpitation of the heart, and a general feeling of anxiety. In such cases the local circulation is deranged, in consequence of a morbid condition of the *vaso-motor* system of nerves. This condition to the patient is one of fearful, untold misery, which may persist from time to time for years, without his being able to get any permanent relief. Frequently he is led to believe that many of these symptoms are due to some change in the brain, or spinal cord, when it is due, as I have said before, to a local derangement of the circula-

tion caused by a morbid condition of the vaso-motor system of nerves. Small doses of potass. br. will frequently relieve if not entirely remove the suffering.

The three principal causes producing wakefulness are—1st, pain; 2d, anæmia of the brain; and 3d, hyperæmia of the brain. Now if we accept the theory that potass. br. acts on the *vaso-motor* system of nerves, we can readily see how it is that this drug in some cases acts hyponotically, and in others injuriously. Under the first cause of wakefulness, viz., pain, it has no sedative action. Under the second cause, viz., anæmia of the brain, where the indication is to increase the supply of blood, this drug would, by its action on the blood-vessels through the *vaso-motor* nerves, reduce the supply already too small for the healthy sustenance of the brain, and turn bad into worse. But under the third cause, viz., hyperæmia of the brain, where the indication is to reduce the supply of blood and relieve the over-gorged blood-vessels, which can be done by lessening the calibre of said vessels, we find the potass. br. acting beneficially.

Dr. Moxon, who seems to have made extended use of this drug in the treatment of agues, says that though in some cases the cure is permanent, yet in many others, where the patient remains in the ague district, the disease will return after the lapse of one or two weeks' free interval. (*British Medical Journal*, June 11th, 1870.)

In the *Practitioner*, Vol. V., he says: "Though this drug was introduced into practice for the treatment of enlarged spleen, it was not shown to be used particularly in ague poison, though, at Guy's Hospital, amongst out patients, it possessed a remarkable power over this disease." He reports a number of cases in which it had been successfully used, though quiniæ sulphat. had been given with no benefit. In my hands, in two cases, it has been successfully used where the usual treatment had failed. Both parties lived on the outskirts of town, exposed to malarial poison arising from a canal and the city dumping-ground. In one case, there was extended dullness over the spleen, and in the other, both liver and spleen were enlarged. Both had been suffering with quotidian fever for some time, and had been pretty thoroughly physicked before I saw them. At first I put them on the ordinary treatment, and failing to benefit them, concluded, as the potass. br. had been so highly recommended by Dr. M., it might do some good, and accordingly used it as he advised, viz., the potass. br. in infus. gentian ter die. In a short time they were free from the attacks, though by my advice they continued to take the medicine for several weeks after the disease had disappeared. The extent of dullness over the spleen in both cases was lessened, and in neither case has there been a return of the fever, though continuing to live in the same locality. Dr. Da Costa, of Pennsylvania, states that potass. br. has a corrective influence on the unpleasant effects produced by opium, while it does not destroy its anodyne or hypnotic effect, but, on the

contrary, it heightens both, particularly the latter. His experience has been, that it acts best when it is given some hours before the opium, relieving the faintness, headache, nausea, itching, and dry mouth which follow the use of opium. There are, he says, some exceptions though few. I can find but one recorded case of death by potass br.: a general officer in the U. S. Army, soon after the surrender, showed symptoms of mental aberration. He had labored ardently and incessantly to crush the Rebellion (?) so-called. Before leaving Washington his physician prescribed potass. br., and directed his attendant to give it freely and often enough to quiet him. His attendant followed literally the advice of the physician, to the extent of giving in one day 480 grains, and repeated the same quantity the following day. As no autopsy was made, none can say whether it was bromism or softening of brain which produced death. There are many diseases in which this drug has the reputation of being useful, which I have not mentioned for fear of tiring my hearers. Amongst these diseases may be mentioned tetanus, convulsions of various kinds in children, poisoning by strychnia, gonorrhœa, incontinence of urine in young children, asthma, controlling habitual cramps in lower extremities, sleepless excitement in puerperal mania, insomnia from mental strain, etc.

AMERICAN MEDICAL ASSOCIATION.*

The 26th annual session convened in Louisville, Ky., Tuesday, May 4th, 1875; Dr. W. K. Bowling, Nashville, Tenn., President; Dr. Wm. B. Atkinson, Philadelphia, Secretary. Between four and five hundred physicians were in attendance. Prayer by Rev. Dr. Lamar, of the Christian Church.

Dr. E. Richardson, Chairman of the local Committee of Arrangements, delivered the address of welcome; he also presented various invitations to receptions, etc.

Dr. N. S. Davis, Chicago, announced that Dr. Le B. Bottsford, St. Johns, New Brunswick, President of the Canadian Medical Association, was present, and, on his motion, was invited to participate in the proceedings. Dr. B. acknowledged the courtesy appropriately.

The President delivered his address, announcing as his subject *The Relation of the American Medical Association to Medical Education in the Past, and its Duty to that End in the Future.* He enumerated the objects of this organization to be: (1) To give emphatic expression to the views and aims of the medical profession; (2) to supply more effectual means for cultivating medical knowledge; (3) to elevate the standard of medical education; (4) to promote the usefulness, honor, and interest of the medical

*This report is compiled from the *Courier Journal, Louisville Commercial* and *The Ohio.*

profession; (5) to enlighten and direct public opinion in regard to the duties, responsibilities and requirements of medical men; (6) to excite emulation and concert of action in the profession; (7) to foster friendly intercourse; (8) to take cognizance of the common interest of the medical profession in every part of the United States. Under the last head, he suggested that this meeting resolve that it be regarded as derogatory to any physician to take as a student of medicine any one who cannot exhibit evidence of having taken a degree in a regular chartered college, or a certificate of qualifications necessary to become a student of medicine, from a board of examiners appointed for that purpose by the American Medical Association. This point he advocated with great earnestness and force.

Thanks were voted the speaker, and the address was ordered to be published.

A number of papers were read by title and referred to appropriate Sections.

The several *Sections* met during the afternoon. That on *Practice* (Dr. Austin Flint, chairman), opened with a paper by Dr. N. S. Davis on *Conjoined Meteorological and Disease Observations*, which paper is spoken of as containing valuable discussions. A capital paper on *Dosage in the Administration of Drugs* was next read by Dr. E. H. Clarke, Boston.

In the *Surgical Section* (Dr. Paul F. Eve, chairman, pro tem.), Dr. Andrews, Chicago, presented a paper on the *Mortality Rate of Herniotomy, Amputations, etc.*, showing that more favorable results follow such operations in the Lake region of the United States. The tables were based upon operations made in hospital and private practice by numerous surgeons scattered along the great Lakes.

Dr. L. A. Sayre read a paper on *Reflex Paralysis Caused by Irritation of Genital Organs.* He detailed several cases in which very rapid relief of paralysis affecting various parts of the body followed circumcision in the male, and clitoridectomy in the female.

A member from Alleghany City reported a case of *Atrophy of the Bladder* (with photographs) successfully operated upon.

In the *Section on Obstetrics* (Dr. Byford, chairman), Dr. M. B. Wright, Cincinnati, reported a number of cases of death of children which had occurred in the Cincinnati Hospital—cases of pigmentation, associated, however, so far as could be discovered, with change in no organs, except, perhaps, the kidney, and blood somewhat disorganized. Cause, supposed to be some yet undiscovered poison generated probably in the mortuary.

A member from Boston reported a similar experience in the General Lying-in Hospital of that city. No case out of a dozen recovered. The cause was found to be some rotten apples and other trash in one of the air-chambers.

Dr. Nathan Allen, Lowell, Mass., made some remarks regarding the decrease of birth-rate—especially in New England. His views

were discussed by Drs. Wright and Reamy, Cincinnati, and Jenks, Detroit.

Second Day—A question arising as to who constitute permanent members, Dr. N. S. Davis said they are those elected as such upon the recommendation of the Committee of Arrangements from locations where there are no local societies existing at the time, or else they must be members of good standing in their respective State Societies. The idea is that applicants should not be made permanent members when there are local societies in their own place entitled to representation, while they are not members of such local societies. Such can not be admitted to the neglect of the local organizations.

In answer to the question could a delinquent member be restored to his privileges by payment of back dues? an instance of last year was cited in which a former member desired to be reinstated by the payment of 25 years' back dues, but was refused.

After a recess of 15 minutes, the President announced the Committee on Nominations, composed of one member from each State represented.

Dr. W. B. Atkinson read a communication from Dr. A. H. Daud, Secretary of the Canadian Medical Association, presenting the following resolution adopted at the last meeting of his Association: "That in consideration of the best interests of medical science, it is desirable that a medical conference should take place between the American and Canadian Medical Associations, at some central point, to be determined upon, and that the American Medical Association be advised as to the desirability of becoming more intimately acquainted, and affording an opportunity for the discussion of medical and surgical subjects on a common basis." Unanimously adopted.

A resolution requesting Congress to take immediate steps in granting to physicians and surgeons connected with the army and navy the titles proposed to be bestowed upon them, was adopted.

The following from Dr. E. Seguin, N. Y., one of the delegates to the International Medical Congress, was read and referred to a committee: "You have twice sent delegates to the British Medical Association, and kindred European societies, to invite them to concert a plan of uniformity of methods, instruments, scales, and records for clinical observation.

"This proposition has become more opportune since the meeting in Paris for the adoption of uniform weights and measures by all nations, in which convention Profs. Hilgar and Henry represented the United States, but in which the special wants of unity of measures of our profession are not requested. It was advocated by Sir Wm. Jenner, Reynolds, Gibson, Stewart, Squire, Sidney Ringer, Wilson, and Tilbury Fox in England; on the continent by MM. Morey, Charcot, Lorain, Potain, Lepine, Olliez,

all ready to open a commission in Paris, and a sub-committee in Lyons, in order to concur in your plan of uniform observation.

"This plan embraces the unity of clinical thermometers, thermometric scales, charts, etc; a uniform graduation of the sphygmograph, nyograph, sphyrograph, æsthesiometer, monometer, globulimeter, ophthalmoscope, thermoscope, and other instruments of precision used in diagnoses; a uniform method of measuring and registering the hearing, the velocity of other sensory impressions, the regularity of co-ordinate movements, as the walk, and a uniform registration of all clinical cases according to their kind.

"Of this plan, the International Medical Congress, meeting at Brussels the 19th Sept., prox., proposes to carry out only the uniform measurement and record of hearing. It is, therefore, important that this Association be represented, in order to represent the original plan of uniformization of clinical observation."

The hour of 11 having arrived, according to previous resolution, Dr. S. D. Gross was called to address the Association. His subject was

Blood-letting, which he styled "one of the lost arts." He commenced by briefly recounting the history of venesection, its uses and abuses. While physicians of a few generations back resorted to blood letting as a specific remedy in the management of promiscuous diseases, the system had fallen gradually into disuse, until, at the present day, it was as much as a physician's reputation was worth to hazard the suggestion save as a topical agent. He thought that we should not assume to be so much wiser than our fathers, who had lent their approval to a custom that had been sanctioned by ages of experience. Might we not, in going to the opposite extreme, do violence to a principle that was really conservative in its nature? It was the extreme view taken either way that was likely to occasion untoward results. It was the fashion of the present day to decry this kind of practice, and, like many other fashions, it was founded upon ideas that would not stand the test of reasoning investigation. Even disease itself, in some form or other, had often become fashionable. An instance in point was that of Louis XIV, of France, who was afflicted with a loathsome disease, with which the people of his court soon became fashionably inflicted. There was as much tyranny exercised by the opinion of an eminent authority (eminent because it was *foreign*) in support of improbable or questionable medical views, as there was in the mandates of the queen of fashion, foremost among whom in her time, was the Empress Eugenie, and to which every woman felt herself compelled to yield, or else forego her influence and standing in the fashionable world. So with a majority of the medical profession, who abandoned voluntarily—or felt compelled so to do—old and once cherished opinions in order that, by following new theories, they might not render themselves conspicuous by an adherence

to the ancient regime. He said that the time was fast coming, if not already at hand, when a reaction would ensue, and the idle lancet be again resorted to as one of the main reliances in the treatment of many forms of disease, particulary in the acute stages. History is constantly repeating itself, and knowledge runs in a circle. There were times to bleed, and times not to bleed, and these distinctions, wherein our fathers erred, we of this day and time are enabled to recognize readily and turn to valuable account. When we had acquired a more accurate knowledge of diseases, the tendency to run into extremes would be less characteristic of the profession, if not avoided altogether.

The substitute for the lancet now-a-days consisted in the administration of medicines that had a tendency to reduce the fulness, frequency and power of the heart's action, and the extreme use of these was more dangerous than the one decried. Women in child-bed had often lost immense quantities of blood, more than an old-time physician could ever think he had occasion to draw; hemorrhages from various causes, and the continued and immoderate use of the lancet, in many recorded cases, in which no more blood came away because there was too little left to run, could be cited, and yet recovery followed, and the life-current was speedily introduced under a nourishing and sustaining after-treatment.

The address was loudly applauded, and ordered to be printed.

The address of Dr. Austin Flint, Chairman of the Section on Practical Medicine, reviewed some recent researches regarding *Alcoholism*, *Motor Centres*, *New Remedial Agents*, *Transfusion of Blood*, *and the Natural History of Crime*. The changes of alcohol in the system, and its medicinal uses were dwelt upon at some length. Well-conducted experiments went to prove that when alcohol is taken into the system, the proportion excreted by the kidneys, lungs and skin, is exceedingly small, the greater part being destroyed in the body. What becomes of it remains to be answered by farther experimental researches. Six hundred grains of absolute alcohol can be disposed of without injury to the bodily functions of a healthy adult during a day. It is accordingly employed in the treatment of many conditions of disease, though its use is not based upon any ascertained facts concerning its elimination.

Physiological investigations during the past year in relation to motor centres of the brain convolutions was then touched upon, and likewise with reference to newly-discovered remedial agents.

As to transfusion of blood, while there were many experiments performed in the transfusion of the blood of one animal into the veins of another of unlike genus, and of the blood of a lamb into the veins of a man, himself a physician, in one instance, there were certain curious results noticed, but nothing positive had been elaborated that would justify the positive advocacy of any reliable feature or theory of practice. The subject was not

without promise, however, and afforded an ample field for any one whose zeal was equal to the task of an investigation, and which could hardly fail, eventually, to be of signal advantage to the profession.

The closing feature of the paper referred to the natural history of crime, in which the query was announced concerning the possible connection of individual tendencies to the commission of crime with corresponding diseased conditions. It was very ingeniously and elaborately put forth, together with the possibility of medical treatment for such conditions, under specific classifications, as in the case of real diseases. This, of course, implied a discussion of the responsibility for criminal acts, which should, however, offer no hindrance to enlightened investigation.

Thanks were voted to Dr. Flint, and his address was properly referred, with instructions to be published.

Dr. J. M. Toner, Chairman of the Committee on the International Medical Association, recommended the sending of delegates to the convention to assemble at Brussels, September, 1875, as the most expedient plan to meet the wants of this Association.

The committee appointed to select a die, with the portrait of Dr. N. S. Davis on one side, and the name and date of the Association on the other, reported that they had arranged for the manufacture of the same in bronze at the Philadelphia Mint. The report was received, and 200 medals, at $1 each, were ordered.

In the *Section on Practice** Dr. Moreau Morris, N. Y., read a paper on *Biometry in its Relations to the Practice of Medicine.*

Dr. Bartholow, Cincinnati, presented some practical observations upon *Ophthalmic Goitre and its Treatment*, in which he stated that in some cases all the symptoms may be absent except the excessive action of the heart, and lack of co-ordination of the upper eyelid, first described by De Graafe. He treated all the cases reported with good success by galvanization of the pneumogastric and sympathetic nerves.

Dr. N. S. Davis remarked that under his care several cases had done remarkably well under regulation of diet, careful outdoor exercise, and the internal use of compound syrup of the hypophosphites, taken after meals, and digitalis pushed at first sufficiently far to produce positive slowness of the pulse, and subsequently to keep the patient under an appreciable degree of influence, without getting the cumulative effect of the drug. If tonics are used, they should be selected with reference to avoiding excitation of the nervous system; if any other form of tonic be given, it should be associated with some sedative, to keep down the peculiar excitability which may be produced by the tonic used.

* Reports of Sections after first day are compiled from *Medical Record.*

Dr. Octerlony, Louisville, read a paper on *Cystic Degeneration of the Kidneys.*

In the *Section on Surgery*, Dr. L. Elsburg, N. Y., presented a paper on *Œsophageal Auscultation.*

Dr. L. J. Wilhein, Terre Haute, Ind., read a report of a *Case of Hydro-Nephritis, caused by the formation of Stone in the Pelvis of the Kidney and Ureter*—the chief points of interest being (1) Reticence of the patient for many years, without suffering any irritation of the bladder or calculous nephritis; (2) Perseverance at work, with healthy digestion, until four weeks before his death; and (3) the little evidence of inflammation until the last two weeks of his life. Man, æt. 26, no family history, two years a cavalryman. Towards the end of his term, his horse fell on him; he recovered with the exception of a deep, dull, lumbar pain, and slight hematuria at times—the latter disappearing four years before death. Gradually enlarging abdomen was noticed in 1866. July, 1874, his back and left side were severely contused, which caused much pain; and a few minutes after, there was considerable hematuria, which lasted for two weeks. He then felt a goose egg size tumor in the left side, very painful on pressure, and movable. February 25, 1875. Injured again. Left abdomen greatly distended by kidney-shaped tumor—marked out by palpation and percussion—extending 15 inches from the pubis to 6th intercostal space; lower transverse measurement, 10½ inches; upper transverse, 7½. Diagnosis: renal cystic degeneration. Tumor was opened two inches to right of crest of left ilium, by trocar, and gradually emptied of eight pints of thin, inodorous, alkaline, chocolate-colored fluid, depositing a bloody-looking sediment. Sac refilled in a few days. March 10, punctured again; six pints of thin fluid withdrawn; then followed about a pint of a thick, grumous, gelatinous substance. On 18th, two pints of bloody pus were drawn. Circumscribed peritonitis ensued; death on 22d. *Autopsy* 24 hours after death. Great emaciation; skin yellow. Abdominal tumor was an enormous kidney with a portion of ureter; it had acquired such volume because of a large stone—over ℥j—in the pelvis, and a small one—℥iii—near its cystic connection with the ureter—obstructing the urinary secretion. Adhesions over entire surface of tumor; ureter, renal artery and veins greatly dilated; glandular portion of kidney almost entirely destroyed. Right kidney much increased in size, but of healthy appearance.

The Thermoscope devised by Dr. E. Seguin, N. Y., to determine slight degrees of heat was exhibited.

Third Day.—Drs. J. A. Adrian, E. E. Harwood, J. C. Hutchison, H. D. Holton, J. C. Hupp and H. R. Warner were appointed delegates to the International Medical Association at Brussels.

Dr. S. D. Scelye, Montgomery, Ala., offered $100 for the best essay on *Bright's Disease*, deemed worthy of a prize by a proper committee.

Drs. S. D. Gross, W. B. Atkinson, Pa.; Austin Flint, N. Y.; Willoughby Walling, Turner Anderson, Ky.; J. T. Hodgin, Mo; L. C. Lane, Cal.; Wirt Johnson, Miss.; Wm. Brodie, Mich.; J. M. Toner, Washington, D. C.; F. D. Cunningham, Va.; E. T. Easley, Texas; E. Andrews, Ill; H. I. Bowditch, Mass. and Roberts Bartholow, Ohio, were appointed delegates to the Canadian Medical Association, to convene at Halifax, August 5, 1875.

A report by Dr. John P. Wall, Tampa, Fla., on the *Climatology, etc., of Florida*, was properly referred.

The Treasurer reported a balance of $3,022 41 in his hands. Owing to increased postal rates, the Transactions will be delivered at $6 instead of $5, as heretofore.

On presentation by Dr. J. Marion Sims, Chairman of the McDowell Memorial Fund Committee, it was resolved that members of the Association shall contribute annually such sums as they may think proper until $10,000 be accumulated, to be known as the "McDowell Memorial Fund," the interest on which shall be used as prizes for essays relating to ovarian diseases.

Dr. S. D. Gross subscribed $100.

The hour having arrived for Dr. E. M. Moore's (Rochester, N. Y.) address on

Transfusion of Blood, he stated that when first successfully performed it excited the highest hopes, and attracted the attention of the great, who predicted for it great therapeutic value. They, in their new found zeal, almost imagined that death had been practically vanquished, and that youth would be insured to the aged and decrepid. But the practice in this early day did not fulfill expectations, and after a time, it ceased to be regarded as having any practical significance. More recently, the subject has been revived by an article from a celebrated physician in Geneva, who described the operation as practised in St. Petersburg, which had not only been attended with marked success, but had enlisted the attention of royalty itself, together with that of the most distinguished physicians of the Russian empire. The operation was designed for the relief of those losing blood in battle, but soon became of more extended application, and old hopes soon became revived. Yet, our knowledge, even to the present time, concerning the therapeutic value of transfusion, is decidedly limited.

This operation was not a sudden discovery, but grew out of the experiments of Dr. Christopher Wren, in injecting medicinal substances into the veins, while this in turn grew out of Harvey's discovery of the circulation of the blood, in the early part of the 17th century. In 1665, two continental physicians prosecuted a series of experiments upon the lower animals, in respect to blood transfusion, but without any notable degree of success. Lauer, in the same year, connected the carotid artery of one dog with the jugular vein of another, and varied the operation at different times with respect to others; and, though not remarkably successful in these experiments, he thought, upon the whole that,

he detected some results which were favorable to the theory. Another experimenter passed the blood of a calf into the veins of a dog; but such being an infringement upon the laws of nature, the result proved a failure.

The first operation in transfusion in the case of a human being occurred in Paris. A young man, æt. 16, who had been suffering two months from an obstinate fever, had introduced into his veins ℥viij of arterial blood from a lamb, and, notwithstanding the shock to his system, all unfavorable symptoms passed away, and he finally recovered. A man, æt. 45, into whose veins were introduced ℥x of the arterial blood of a lamb, was not at all incommoded, and even went the next day to have the operation repeated. Another man, reduced by dysentery, was transfused with the blood of a calf, and revived in 24 hours; but when it was found necessary to repeat the process, such proved of no avail. Another case cited was that of an insane man, into whose veins were introduced at one time ℥x of the arterial blood of a calf, and at another ℥vj more. He seemed somewhat better, and a third transfusion was made, in which a larger quantity of blood was injected, and finally, upon recovering his reason, was supposed cured, but in a few days thereafter died.

But fatal experiences at length checked inquiry and enthusiasm in this direction, and as late as 1868 interest in transfusion had almost entirely disappeared.

In recounting later experiments, reference was made to the variety of procedure in such investigation, in which arterial blood was introduced into the veins, venous blood into the arteries, and each kind of fluid, with its fellow, as introduced from animals into the human system, and from one human being to another. Instances were also given in which defibrinated blood was injected into both arteries and veins. Reference was also made to the direct admixture of the blood of one animal of different species or genus with that of another; but only in those nearest allied in species were the results favorable.

The danger attending the original experiments was the accidental introduction of air into the veins, the result of which, in all cases, is immediate death. Another drawback to success at that time was the coagulation of blood before it could be introduced from the veins of the donor to those of the recipients. Accordingly, the minds of those engaged in the matter were taxed to invent appliances by means of which these difficulties could be overcome. Improvements in this direction had gone on until at present the apparatus in use answers all practical purposes, and all liability to the accidental ingress of air into the veins is avoided, while it insures such a speedy transfer of blood from the donor to the recipient as effectually prevents any tendency to coagulation thereof. Engravings of several instruments were exhibited and explained by the lecturer.

To give some idea of the manner of using the instrument preferred by the speaker, two boys were seated on the stage, close

together, one representing the donor, from whom the blood was to be taken, and the other the recipient of the life-giving fluid. The latter, however, must always occupy the recumbent position, and the former the sitting. The arms of both were extended and made to approximate to each other—the operator standing behind them, which is the position the surgeon should assume in this operation. First, the skin over the cephalic vein of the recipient must be clipped, to lay bare that vessel, which was to be further isolated from adhering tissues in order to be gotten at successfully. That of the donor was to be held in ready juxtaposition for the operation. The instrument consisted of a small silver tube four or five inches long, with a small gutta percha bag adjusted to an attachment at its centre. When one end of this instrument was introduced into the vein of the donor (the speedy filling of which was to be insured by a ligature above the bend of the arm), the bag would soon be filled with blood. The connection of this with the vein was then to be severed, and the contents of the bag introduced gently through the outer end of the instrument, which, in the mean time, was to be inserted into the bared vein of the recipient.

The paper was ordered to be published.

In the *Section on Practice, etc.*, Dr. Irwin, Mansfield, O., read a paper on *Alcohol in the Treatment of Acute Pneumonia*. Of 147 cases reported, not a death occurred. The average attendance upon the patients was 5 days. He believed alcohol to be as distinctly specific in acute pneumonia as quinine in intermittent fever. If destructive processes in the system are retarded, the demand for constructive assimilation will be proportionately diminished. If nutrition is deprived by one-half of its normal supply of oxygen by impermeability of the respiratory membrane, and if the disintegration of tissue can be proportionately diminished, the oxygen supply will still equal the demand; hence asphyxia cannot result. He believed that death occurs in pneumonia by asphyxia, dependent upon impermeability of the respiratory membrane. If now disintegration of tissue, which results in the production of carbonic acid gas, can be retarded sufficiently to diminish the demand for oxygen in the same proportion, it is the thing desired. Alcohol undoubtedly possesses such power; hence its applicability.

Dr. Eastman, Ind., thought there should have been more evidence, such as physical signs, than was given, in order to judge of the reliability of diagnosis.

Dr. Davis, Chicago, regarded the diagnosis as doubtful, as there was not a single death.

Dr. Yandell, Louisville, remarked that the success obtained surpassed all his powers of belief.

Dr. Flint, N. Y., sustained the criticisms.

Dr. Irwin replied that the exact symptoms of a certain stage of the disease were not necessary to be considered according to his theory. He was not at all surprised that the profession is

astounded with the results of treatment. With regard to diagnosis, mistakes are hardly presumable in these days, where a man sees that number of cases, and it is not unreasonable to suppose that an active practitioner may see such a number within twelve years.

Dr. L. Elsburg, N. Y., read a paper on the *Bioplasson Doctrine*—a new biological doctrine. With microscopical and histological advance, the cell doctrine has undergone change, until now it would be not only erroneous in fact, but mischievous in practical consequences to adhere to it. He used diagrams to show the structure of the lowest form of animal life (amœba) found in organic infusions, etc.; and then the structure of human colorless corpuscles, as seen upon the heated stage of the microscope under varying circumstances. He examined a number of tissues to show that there existed throughout, instead of separate isolated cells, accumulations of living matter connected by a network of living matter. The whole animal body represents a mass of living matter, the denser accumulations of which, the former "cells," are connected by more delicate threads of the same, in the meshes of the network of which, fluid or not, living matter is contained, and in the vacuoles of which float blood-corpuscles, pigment granules, etc. He prefers the word *bioplasson* to protoplasm to designate the simplest form of living formative matter.

Dr. A. Keyt, Cincinnati, exhibited a *New Sphygmograph*, constructed on the principle of utilizing elastic membrane and liquid, to receive and transmit to the writing lever the movements of the pulsating artery. Elastic membrane and liquid are so closely allied in physical properties to the arterial coats and blood as to render them very natural media for the purpose indicated. [Space does not allow a description of the instrument itself, which he believes to be a new one.]

In the *Surgical Section*, a committee was instructed to elaborate Dr. Gross' report on *Syphilis* (read last year), and to prepare a dratt of national law.

Dr. Link, Ind., read a paper on *Circular Amputation—Cup-shaped Stump—Treated as an Open Wound.* The advantages claimed are freedom from suppuration, absence of pain, and a comparatively short period for the healing process

[We have been unable to find reports of the proceedings of the *Sections on Obstetrics* and *State Medicine* that would be at all profitable.]

Fourth Day.—The following were chosen trustees of the McDowell Memorial Fund: Drs. J. Marion Sims, chairman; W. L. Atlee, Phila; W. H. Byford, Chicago; J. D. Jackson, Danville, Ky.; J. M. Keller, Louisville.

Election of Officers.—President, Dr. J. Marion Sims, New York; *Vice Presidents*, Drs. John D. Jackson, Ky.; Samuel Lilly, N. J.; N. Pinkney, U. S. army; S. D. Seeley, Alabama; *Treasurer*, Dr. Casper Wistar, Pa. *Librarian*, Dr. Wm. Lee, D. C. *Assistant*

Secretary, Dr. R. J. Dunglison, Phila. *Committee on Arrangements*, Dr. Wm. Pepper, chairman.

Sections—Practice of Medicine, Materia Medica, and Physiology. Drs. F. G. Smith, Pa., chairman; B. A. Vaughan, Miss., secretary; *Obstetrics and Diseases of Women*, Drs. Sam'l C. Busey, D. C., chairman; R. Battey, Ga., secretary; *Surgery and Anatomy*, Drs. Alonzo Garcelon, Me., chairman; E. T. Easley, Texas, secretary; *Medical Jurisprudence, Chemistry and Physiology*, Drs. E. L. Howard, Md., chairman; E. L. Hurlburt, Ill., secretary; *State Medicine and Public Hygiene*, Drs. R. C. Kedzie, Mich., chairman; E. M. Hunt, N. J., secretary.

The following were appointed representatives in this section from their respective States: Drs. J. B. Gaston, Ala., D. A. Linthicum, Ark.; T. M. Logan, Cal.; B. H. Catlin, Conn.; L. B. Bush, Del.; F. Howard, D. C.; W. A. Love, Ga.; H. A. Johnson, Ill.; Geo. Sutton, Ind.; A. J. Fields, Iowa; D. G. Mottram, Kan; Turner Anderson, Ky.; S. M. Bemiss, La.; S. H. Weeks, Me; James A. Stuart, Md.; H. I. Bowditch, Mass.; A. B. Stuart, Minn.; —— Armistead, Miss.; Frank G. Porter, Mo.; J. H. Peabody, Neb.; J. W. Parsons, N. H.; E. M. Hunt, N. J.; A. N. Bell, N. Y.; T. J. Quinn, O.; H. Bettinger, Oregon; Wm. F. Knox, Penn; E. M. Snow, R. I.; R. A. Kinloch, S. C.; J. H. Vandiman, Tenn.; J. M. Fort, Texas; J. L. Cabell, Va.; A. T. Woodward, Vt.; H. P. Strong, Wis.; John Frissell, W. Va.; W. A. B. Norcom, N. C.; J. S. Billings, U. S. army; Jos. Wilson, U. S. navy.

Judicial Council.—The following were appointed to take the places of those whose terms have expired: Drs. L. S. Joynes, Va.; R. N. Todd, Ind.; Robt. Battey, Ga.; James E. Morgan, D. C.; Thomas B. Flaylor, N. J.; Silas N. Bentram, Penn.; A. Dunlap, O.

Committee on Prize Essays.—Drs. Samuel D. Gross, F. G. Smith, Alfred Stillé, E. Wallace, H. C. Wood—all of Pennsylvania.

Climatic Influences.—Dr. Franklin Staples, Minn., was appointed to report on the influence of the Minnesota climate on pulmonary diseases; Dr. Charles Denison, in Colorado; Dr. E. T. Sabal, in Florida.

Dr. H. I. Bowditch, Boston, read a lengthy paper urging the establishment of State Boards of Health. He presented a resolution requiring that each year, until otherwise ordered, the President and Permanent Secretary shall appeal, in the name of the Association, to the authorities of each State where no State Board exists, urging the establishment of such boards.

Prize Essay Committee made no award.

The U. S. Signal Service was requested to note daily, if possible, the amount of ozone in the atmosphere over different parts of the country.

Resolution by Dr. Westmoreland, Ga., urges Congress to increase army surgeons' pay.

Adjourned to meet in Philadelphia, June 7th, 1876.—*Virginia Medical Monthly.*

CURRENT MEDICAL LITERATURE.

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ANATOMY, PHYSIOLOGY AND PATHOLOGY.

[Compiled by F. Leber, M.D., Professor of General and Descriptive Anatomy, Charity Hospital Medical College, and George K. Pratt, M.D., Professor of Physiology, Charity Hospital Medical College.]

ON THE SIMILARITY BETWEEN THE RED BLOOD CORPUSCLES OF MAN AND THOSE OF CERTAIN OTHER MAMMALS, ESPECIALLY THE DOG;

CONSIDERED IN CONNECTION WITH THE DIAGNOSIS OF BLOOD-STAINS IN CRIMINAL CASES.

By J. J. Woodward, M.D., U. S. Army.

In his recent paper "*On the Value of High Powers in the Diagnosis of Blood-stains*,"* Dr. Joseph G. Richardson, of Philadelphia, affirms the possibility of distinguishing the blood of man from that of the pig, ox, red deer, cat, horse, sheep, and goat, by the measurement of the red blood-corpuscles, even in dried stains, such as the microscopist is called upon to examine in criminal cases.

The circumstance, that Dr. Richardson does not mention any animal whose blood-corpuscles cannot be thus distinguished from those of man, and the warmth with which he combats the prudent counsel which Virchow,† Casper,‡ and Taylor,‖ in common with other experts,§ have offered to enthusiastic microscopists in connection with this subject, led me, on perusing

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*American Journal of the Medical Sciences, July, 1874, p. 102; also the Monthly Microscopical Journal, September, 1874, p. 130. This paper has attracted considerable attention. See, for example, the Lancet, August, 1874, p. 210; the Medical Times and Gazette, August 8, 1874, p. 151; and the London Medical Record, September, 9, 1874, p. 560. The last of these Journals is the only one to raise a warning voice: "Dr. Richardson's paper is interesting, but we are afraid the question often put, 'What is the source of the blood in a stain?' must go unanswered. In questions where capital punishment hangs on scientific evidence, that evidence must be of no doubtful or questionable nature."

†Rud. Virchow—Ueber die forensische Untersuchung von trockenen Blutflecken—Virchow's Archiv, Bd. xii, (1857), S. 334.

‡J. L. Casper—Handbook of forensic Medicine—translation of New Sydenham Society, London, 1861-5, vol. i, p. 138, *et seq.*; also p. 192, *et seq.* See also the new and enlarged German edition of the same by Dr Carl Liman—Practisches Handbuch der Gerichtlichen Medicin—5 Aufl. Berlin, 1871, Bd. II, S. 173, *et seq.*

‖A. S. Taylor—The Principles and Practice of Medical Jurisprudence—2d edit. London, 1873, vol. i, p. 548.

§Among others, I may mention E. Brucke—Ueber die gerichtsarztliche Untersuchung von Blutflecken—Wiener Med. Wochenschrift, Jahrgang, 1857, S. 425. Hermann Friedberg—Histologie des Blutes mit besonderer Rucksicht auf die forensische Diagnostik—Berlin, 1852. Andrew Fleming—Blood-Stains—*American Journal of the Medical Sciences*, vol. xxxvii, N. S. (1859), p. 84. Wharton and Stillé—Medical Jurisprudence—3d ed., Philadelphia, 1873, vol. ii, p. 636. M. Z. Roussin—Examen Medico-legal des Taches de Sang. *Annales de Hygiene*, tome xxiii, (1865), p. 139. For an elaborate history of the growth of our knowledge on the subject up to 1860, the reader may consult B. Ritter—Zur Geschichte der Gerichtsarztlichen Ausmittelung der Blutflecken, in Henke's *Zeitschrift fur die Staatsarzneikunde*, 1860. Erstes Vierteljahrheft, § 31. The chief authority in favor of the possibility of distinguishing the blood-corpuscles of man from those of other mammalia, is Carl Schmidt—Die Diagnostik Verdachtiger Flecke—Mitau u. Leipzig, 1848. I have not yet obtained a copy of this paper, but find abstracts of it in Schmidt's Jahrbuch for 1849, p. 255, and Ritter's History, just cited. The reader will also find liberal extracts in Fleming's paper, cited above. The extravagant views of Schmidt are especially confuted by Brucke and Virchow in the papers cited above.

his paper, to fear he would be understood as teaching, in a general way, that it can be determined by the microscope with certainty, whether a given stain is composed of human blood or not; and this fear has been justified by some of the notices of his essay which have since appeared in the medical journals.

Now this subject is one which, from time to time, becomes of great importance in criminal cases; and justice, no less than scientific accuracy, demands that the microscopist, when employed as an expert, shall not pretend to a certainty which he does not possess. I suppose no experienced microscopist, who has thoroughly investigated this subject, will be misled by Dr. Richardson's paper, but there are many physicians who possess microscopes, and work with them more or less, to whom a partial statement of facts on such a subject as this is peculiarly dangerous, and the object of the present paper is to point out to this class of readers that Dr. Richardson's statement of the case, even if all he claims be granted as true, is, after all, not the whole truth; that there are certain mammals, among them the dog, the constant companion of man, whose red blood-corpuscles are so nearly identical in size with those of human blood, that they cannot be distinguished with any power of the microscope, even in fresh blood, much less in dried stains; and that, consequently, it is never in the power of the microscopist to affirm truthfully, on the strength of microscopical investigation, that a given stain is positively composed of human blood, and could not have been derived from the blood of any animal but man.

I must do Dr. Richardson the justice to state, at the outset, that these facts are well known to him, although, from motives of prudence, he has thought proper to be silent with regard to them. In a note dated October 19, 1874, in reply to one in which I informed him of my intention to write the present paper, he says: "I should be very much obliged to you if you would add to your remarks (in a foot-note or otherwise), that, in communicating with me, you found me fully aware of the difficulty of making anything more than a differential diagnosis, even in the cases I specified, and of the impossibility of distinguishing the blood of man from that of a monkey or dog, but that I had refrained from giving prominence to these facts," lest an improper use should be made of them in the defense of criminals.

I must, however, entirely dissent from this view of the matter. I cannot forget, that, on more than one occasion in the past, witnesses summoned as scientific experts have been so misguided as to go into courts of justice, and swear positively, on the strength of microscopical examination, that particular stains were human blood;* and I think the danger that others may do

*Passing by certain American cases, I may refer, in illustration of this statement, to the celebrated English case, Reg. *v.* Thomas Nation (Taunton Spring Assizes, 1857, p. 279), with regard to which the editor of the *London Medical Journal* has pithily said, that the testimony of the expert must be looked upon "as most disingenuous clap-trap, and rather what we might expect to hear at some popular lecture, where the 'wonders of the microscope' form the theme of declamation to a gaping audience, than the solemn asservation on oath of a man of science in a court of justice."—*Med. Times and Gaz.*, April, 1857, p. 366.

so in the future, to the prejudice of innocent men, is more to be feared than the possibility that an acquaintance with the true limits of our knowledge on this subject may sometimes be made use of in the unscrupulous defense of real criminals. I have, therefore, no hesitation whatever as to my duty, in speaking of this subject at all, to speak the whole truth, so far as it is known to me; and in so doing I am happy to say I follow the practice of many of the best writers on medical jurisprudence.

In the instance of the dog, it might at first sight be supposed, from the estimates of the average diameters of the red corpuscles in this animal and in man, as given by Gulliver and Welcker, the authorities most frequently cited in the modern text-books, that a certain small, but constant and measurable difference existed, which might serve as the basis of a distinction in legal cases. This inference, however, is not only contrary to the facts of the case, but an examination of the original essays of the authors cited shows that it is not borne out by their observations.

The mean diameter of the red corpuscles of man, according to Gulliver,* is 1-3200th of an inch (=.00794 millimetres), while that of the red corpuscles of the dog is 1-3542d of an inch (=.00716 mm.). With regard to his estimate for the human corpuscles, Mr. Gulliver,† says: "We are only speaking now of the average size; for they vary like other organisms; so that in a single drop of the same blood you may find corpuscles either a third larger or a third smaller than the mean size, and even still greater extremes." According to this statement, the human red blood-corpuscles may vary in a single drop of blood from 1-4800th of an inch (=.00529 mm.) to 1-2400th (=.01058 mm.) Mr. Gulliver tells us further, in the same paragraph: "My own estimate of the average size has been deduced from numberless measurements, frequently repeated during the course of several years, of corpuscles quite fresh and swimming in the blood, and in various artificial mixtures, as well as in the dry state." I have not, however, been able to find, in those of his papers which I have examined, any of the numerical data from which this average size was deduced.

In the table of measurements appended to Gerber's Elements, in which for the first time he gave "mean or average sizes" (in previous papers he had only recorded "common sizes," occasionally supplementing these by the extremes observed), Mr. Gulliver explained his method of arriving at the average size as follows: "The common sized corpuscles are first set down, then those of

* George Gulliver, F.R.S.—Lectures on the Blood of Vertebrata—*Medical Times and Gaz.* vol. ii, of 1862, p. 101, *et seq.*—On the Red Corpuscles of the Blood of Vertebrata, etc., *Proceedings of the Zoological Society of London*, 1862, p. 91.—The Sydenham Society edition of the works of William Hewson, London, 1846, p. 216, *et seq.*—Appendix to Gerber's Elements of the General and Minute Anatomy of Man and the Mammalia, London, 1842, p. 31, *et seq.*—Observations on the Blood-Corpuscles or Red Disks of the Mammiferous Animals, *London and Edinburgh Philosophical Magazine*, vol. xvi, (1840), pp. 23, 105 and 195; also vol. xvii, pp 139 and 325; also vol. xxi, (1842), p. 107. For a list of other papers referring to the blood corpuscles of various animals, see the Works of William Hewson above cited, note to page 236.

† Med. Times and Gaz., vol. ii, of 1842, p. 157.

small and large size, and lastly, the average deduced from a computation of the whole."* In this table the measurements for the common dog are given as follows:†

Common sizes,	1 4000	of an	inch.
	1-3500	"	"
	1-3200	"	"
Small size,	1 4570	"	"
Large size,	1-2900	"	"
Average,	1 3542	"	"

Where the "average" is simply the arithmetical mean of the several fractions given above, it can hardly, I think, be accepted as the true average size, since as much weight is given in this mode of calculating to the rarer as to the more frequent forms. Accordingly it is not surprising that we find in a former paper‡ measurements which do not accord very closely with this average: "Domestic dog, old mongrel, common diameter of corpuscles 1-4000th to 1-3200th of an inch." "Fox hound puppy, one day old, a bitch, 1-3000th and 1-2666th, the most common diameter of the corpuscles. Fox hound puppy, 12 days old, a bitch; most common diameter of the corpuscles 1-3000th and 1-2885th of an inch. Extreme sizes 1-4000th and 1-2666th." "Mongrel puppy, four months old, a bitch, all the following diameters common, viz., 1-3693d, 1-3554th, 1-3429th, and 1-3200th." The measurements for the second and third of these animals are about as much larger than those for the human species as the others are smaller.

It is interesting to know just how Mr. Gulliver's measurements were made. He tells us he used a glass eye-piece micrometer so adjusted that the divisions had a value of 1-4000th of an inch each. "If one space and a quarter of this micrometer were occupied by a single globule, this would of course measure 1-3200 of an inch; if three equally-sized particles lying in a line, and touching at their edges, covered three spaces and a half, the diameter of each of these would be 1-3429th, if four spaces 1-3000th of an inch."‖ The objectives used were an eighth by Ross, and a tenth by Powel.§ It is not stated whether these objectives were provided with the screw-collar adjustment for thickness of cover, but they probably were; and if so, doubtless all the measurements were somewhat vitiated, like others of the same date, by failure to allow for the variation in magnifying power, produced by turning the screw-collar. Moreover, it must be clear, that practically the fractions of a division of the eye-piece micrometer were only *estimated*, for the case in which a number of "equally-sized" corpuscles would be found "lying in a

* Appendix to Gerber's Elements, cited above, p. 1
† Loc. cit., p. 38.
‡ London and Edinburgh Philosophical Magazine,, vol. xvi (1840) p. 28.
‖ Loc. cit., p. 24. § Loc. cit., p. 24 and p. 105.

line," and just "touching at their edges," without overlapping, must have been rare. As to the accuracy of the value assigned to the eye piece micrometer, Mr. Gulliver himself says: "In the absolute accuracy of any micrometer applied to objects so extremely minute, it is difficult to place implicit confidence;" and he only claims "relative exactness" for his results.*

Turning now to the original essay of Welcker, we find that his observations give even less support than those of Gulliver to the notion that the blood of the dog can be distinguished from that of man by the microscope. Welcker's measurements, as ordinarily quoted in the text-books, are .00774 of a millimetre for man, and .0073 for the dog. I find, in his original paper,† that the mean for the dog was derived from the measurement of but ten corpuscles in the blood of a single terrier; the variations in this case being, minimum, .0065 mm., maximum, .0082 mm. Now, if we turn to the table ‡ of his own measurements of human blood, we find that, in the last measurement of the blood of Dr. Schweigger-Seidel, fifty corpuscles gave the following results: mean, .00724 mm., minimum, .0051, maximum, .0085, in which case the mean is a trifle less than that found for the dog.

I would commend this table of Welcker to the study of those who may be disposed to underrate the diversity of size which may be observed among the human red corpuscles; the minimum measurement recorded in it is .0045 mm., the maximum .0097 mm.; the author remarks: "I have always, both in animals and in man, found the transverse diameter of the blood corpuscles of one and the same individual vary from one-fourth to one-half of the mean measurement; and it appears that all the sizes lying between the two extremes are present in tolerably equal numbers, with the exception of the smallest corpuscles, which occur for the most part singly and at intervals."

I may mention, further, that the mean dimensions of the human red corpuscles so often quoted from Welcker, viz., .00774 mm., with a minimum of .0064 mm., and a maximum of .0086, were not derived from the whole of this table, but from four sets of measurements of his own blood only, of which two were dry preparations and two from the moist blood. He tells us that he selected the mean .00774 mm., because it *was* derived from his own blood, which he had used in a previous research on the number of the blood-corpuscles, and thought best, therefore, to use also in the computation of their volume, which is one of the chief subjects discussed in his paper. The mean of eight other measurements from five different individuals was .00768 mm. The blood of a chlorotic woman gave .00656 mm., as the mean of the corpuscles examined moist, and .00693 mm., as their mean when examined dry.

* Loc cit., p. 24.

† H. Welcker—Grosse, Zahl, Volum, Oberflache und farbe der Blutkorperchen, bei Menschen und bei Thieren. Zeitschrift fur Rationelle Medicin, 3te R. Bd. xx (1863) S. 257

‡ Loc. cit., p. 263.

Welcker made his measurements with Kellner's System III, Ocular II, magnifying about 620 diameters, and by a delicately ruled eye-piece micrometer, each division of which, with the power used, had a value of .001723 mm., as determined by the stage micrometer: "A human blood-corpuscle fell within four or five of these divisions, while, on account of the great delicacy of the ruling, fifths or even tenths of a divisions could be estimated with tolerable exactness." The stage micrometer was a millimetre in one hundred parts, ruled by Lerebours, and which Welcker has verified by comparison with a standard scale in a manner which he describes in full, and which is worthy of study. He measures as a rule, fifty blood-corpuscles from each sample, and these were not selected, but taken indiscriminately one after the other as they came under the scale while the specimen was being moved along

Other observers besides Gulliver and Welcker have recorded minute differences in the average size of the red corpuscles of man and the dog. Thus Carl Schmidt* estimates the average diameter for man at .0077 mm., for the dog at .0070 mm. A. Kolliker† fixes the mean for man at 0033 of a Paris line (=.00751 mm.)—that for the dog at .0031 of a Paris line (=,00709 mm.) On the other hand, Friedberg‡ makes the blood-corpuscles of the dog the largest, stating that he finds the human corpuscles measure from .0058 to .0070 mm.—those of the dog from .0054 to .0080

For myself, after repeated measurements of the blood of the dog, and of human blood, I can only say that I find no constant difference between them, whether the fresh blood or thin layers dried on glass be selected for measurement. The mean of fifty corpuscles taken at hazard is seldom twice the same, and sometimes that of human blood, sometimes that of dog's blood is a trifle the largest.

The following measurements, intended to illustrate these facts, were made with a glass eye-piece micrometer ruled in two-hundred-and-fiftieth of an inch, and with such a magnifying power that each division corresponded to 1-50,000th part of an inch (.0005079+mm.). The objectives used were an immersion 1-16th of Powell and Lealand, and an immersion No. 13 of Hartnack, either of which permitted the above value to be given to the divisions of the eye piece micrometer by properly adjusting the draw-tube. The stage micrometer used in effecting this adjustment is an excellent one in 1-100ths and 1-1000ths of an English inch, in which the several hundredths and thousandths, as nearly as I can measure, are equal to each other, and the ten divisions of the latter value to any one division of the former—a quality in which the stage micrometers in the market are generally deficient. I have compared this micrometer with a stand-

* Op. cit.
† A Manual of Human Microscopic Anatomy. London, 1860, pp. 519 and 525.
‡ Op. cit.

ard scale ruled on silver—a centimetre in millimetres and tenths—the property of the United States Coast Survey, kindly loaned for this purpose by Mr. J. E. Hilgard, who assures me that it is "very accurate." I made several comparisons, both by means of an eye-piece micrometer and by the contact method described by Welcker. These comparisons showed that the divisions of my stage micrometer were nearly two per cent. (exactly 1.945 per cent.) larger than they ought to be, and this correction was accordingly applied in adjusting the value of the eye-piece micrometer. The value assigned to the divisions of the eye-piece micrometer for these measurements cannot therefore, I think, differ from their absolute value by a quantity large enough to modify the results appreciably.

As the divisions represent a value twelve and a-half times less than that of the divisions of Mr. Gulliver's eye-piece micrometer, and more than three times less than those of Welcker's eye-piece micrometer, I did not find it necessary to estimate fractions of a division, as they did, but read the nearest number of whole divisions corresponding to each corpuscle. Fifty corpuscles, or about that number, were measured in each sample of blood. An assistant noted the number of eye-piece divisions corresponding to each corpuscle, as the measurements were made, and the mean was obtained in each case by adding together all the values and dividing by the number of corpuscles measured. Of course, the number of eye-piece divisions found only required to be multiplied by two to convert it into decimals of an inch. I endeavored at first to make these measurements with a dry Powell and Lealand's 1-50th of an inch, with the draw-tube so adjusted that each division of the eye-piece micrometer should equal one-hundred-thousandth of an inch, but I found the outline of the corpuscles, with this power, was not sharp enough to permit me to measure them as exactly as I wished, and I therefore gave the preference to the immersion objectives above mentioned.

Of course, in arranging for these measurements the effect of the screw-collar adjustment of the objection on the magnifying power had to be taken into account. This was done in the following manner: Some thin glass covers, not varying more than a thousandth of an inch from .012 of an inch in thickness, were selected from a lot of so-called 1-200ths of an inch covers by means of a suitable lever of contact.* Some blood being placed under one of these covers, the best adjustment of the screw-collar for definition was found by trial. The stage micrometer, which is an uncovered one, was then temporarily covered with another of the selected thin glasses, and, being duly focussed upon, the desired value was given to the divisions of the eye-piece micrometer by the adjustment of the draw-tube, after

* The instrument used was made by Stackpole & Bro., of New York, after the pattern of the instrument designed by Mr. Ross, which is figured in Carpenter on the Microscope, 4th ed., London, 1868, p. 203.

which the measurements were proceeded with, and the screw-collar was not turned again until they were completed.

The following tables present the several means deduced from these measurements, in decimals of an inch, to which, for convenience; I have added the equivalent values in decimals of a millimetre. The number of corpuscles from which each mean was deduced is also given. The measurements made with the Hartnack No. 13 immersion are marked (H.); the others were made with Powell and Lealand's immersion 1-16th.

Measurements of Human Red Blood Corpuscles, from Five Individuals.

	Number of corpuscles measured.	Mean Diameter. Decimals of an English inch.	Decimals of a millimetre.
1. Dr. W., dry	50	.000304	.00772
2. " " moist	49	.000292	.00742
3. " " " (H.)	50	.000300	.00762
4. " " " (H.)	50	.000289	.00734
5. " McC, dry	50	.000288	.00731
6. " " "	50	.000294	.00747
7. " " moist	50	.000301	.00765
8. Mr. W., dry	50	.000298	.00757
9. " " " (H.)	52	.000297	.00754
10. " T., "	50	.000290	.00737
11. " " " (H.)	50	.000292	.00742
12. " B., "	50	.000296	.00752
13. " " " (H)	50	.000297	.00754

In each of these measurements of human blood, the great majority of the corpuscles ranged from twelve to seventeen divisions of the eye-piece micrometer—that is, from .00024 to .00034 of an inch. Out of the whole number measured, six were as small as ten divisions, and one as large as eighteen divisions; large and small forms were not searched for, however. The size most frequently measured was fifteen divisions, or .00030 of an inch

Measurements of the Red Corpuscles of the Dog, from Five Individuals.

	Number of corpuscles measured.	Mean Diameter. Decimals of an English inch.	Decimals of a millimetre.
1. Mongrel Terrier, dry	50	.000292	.00742
2. Same animal "	54	.000299	.00759
3. Another mongrel terrier, dry (H)	50	.000290	.00737
4. Same animal, moist (H.) "	50	.000287	.00731
5. Scotch terrier, moist (H) "	50	.000291	.00739
6. Same animal " (H) "	50	.000299	.00759
7. " " " (H) "	49	.000287	.00729
8. Spitz dog, dry (H)	52	.000295	.00724
9. Black and tan, moist (H)	50	.000290	.00737

In each of these measurements of dog's blood, precisely as in the case of those of human blood, the great majority of the corpuscles measured from twelve to seventeen divisions of the eye-piece micrometer (.00024 to .00034 of an inch). Out of the whole number measured, four were as small as ten divisions, but none larger than seventeen were encountered. As with the human blood, however, large and small forms were not searched for, but all the perfectly formed corpuscles brought into view by the

movement of the stage were measured as they passed under the micrometer, without selection, until the required number was recorded. The size most frequently measured was fifteen divisions, or .00030 of an inch, precisely as in the case of human blood.

It will be observed that three of the above means for human blood, Nos. 1, 3 and 7, are a trifle larger than any of those of dog's blood, and two of the latter, Nos. 7 and 8, are a trifle smaller than any of those for human blood. All the other means for the dog are within the range of the values found for human blood, and the majority of them are each identical even to the last decimal place, with some one of those found for man.

I may, moreover, remind the reader in this place, that the variations between the mean diameter assigned to human blood by different observers are quite as great as the variations recorded by any of them between the blood of man and the dog, or even greater. Passing by the older measurements, some of which, as a matter of curiosity, I have given in the foot-note,* I may cite, besides the measurements of Gulliver, .00794 mm., Welcker, .00744 mm., and Kolliker .00751 mm., which have been already quoted in this paper, the following values: Robin,† .0073 mm., Harting, .0074 mm., Valentin,‡ .0071 mm., and Austin Flint, Jr.,‖ .00726 mm. (1-3500th inch).

I have thus shown that we are not justified, either by the facts of the case, or by the authorities supposed to favor the possibility of doing so, in attempting to distinguish between the blood of man and that of the dog, by the measurement of their red corpuscles. Mr. Gulliver himself, indeed, appears to have come to a similar conclusion not only with regard to the dog, but several other animals, for he tells us that the corpuscles of the quadrumana "differ but little from that of man, being only just appreciably, or sometimes not at all, smaller, both in the monkeys of the old and new continents," and that "in the seals, otters, and dogs, the corpuscles are about as large as in man."§

I myself have not made systematic measurements of the blood of any of these other animals, and am, therefore, unable to speak as authoritatively with regard to them as I can about the dog.

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* A list of the more important of these older measurements will be found in the Mensiones Micrometricæ of R. Wagner (*Partium elementarium organorum quæ sunt in homine atque animalibus mensiones micrometricæ.* Erlangen, 1834). Most of these are included in the more complete list given by Louis Mandl (*Memoire s r les parties Microscopiques du Sang.* Paris, 1838, p. 10), from which I take the following, reducing the values which both Mandl and Wagner give in vulgar fractions of a Paris line to decimals of a millimetre. Leeuwenhoek (1673), .00992; *ib.* (1720), .01327; Jurin (1717), .00789; Tabor (1824), .00723; Senac (1749), .00820; Muys (1751), .01128; Weiss (760), .01085; Della Torre (1763) .00301; Blumenbach (1789), .00789; Villar (1804), .00564; Sprengel (1810), .00902; Kater (1819), .00677; Bauer and Home (1818 . .01504; Young (1819), .00451; Rudolphi (1821), .00902; Prevost and Dumas (1821) .00705; Edwards (1826), .00814; Hodgkin (1827), .00902; Wollaston 1827), .00525; Weber (1830), .00525; Muller (1834), .00525 to 00.02; Schultz (1836), .00667 to .00836; Wagner (1838), .0 645 to .00752—Mandl, himself, gives .00800.

† Charles Robin. Note sur quelques points de l'anatomie et de la physiologie des globules rouge du sang. Journal de la physiologie, tom i (1858), p. 283.

‡ I cite the estimates of Harting and Valentin from Welcker's paper cited above p. 258.

‖ The Physiology of Man, vol i. New York (1866), p 11

§ Proc. of the Zoolog. Soc., 1862, . 9".

From Mr. Gulliver's detailed measurements, appended to Gerber's Elements, however, I am led to believe that there are several other animals whose blood, even in the fresh state, could not be distinguished by the dimensions of the red corpuscles from that of man. Among the domestic animals I may especially mention the rabbit and the Guinea-pig as belonging to this category. To these, besides most of the monkeys of both the old and new world, the seals, and the otters, we may add the kangaroo, the capybara, the wombat, and the porpoise. In the case of all these animals we not merely find that the "average size" calculated in Mr. Gulliver's peculiar way approximates dangerously to the average assigned to man, but the classic 1-3200th of an inch figures among the "common sizes" recorded by Mr. Gulliver for each.

The foregoing remarks and measurements refer especially to the fresh blood of animals mentioned, and to thin layers quickly dried on glass, as is generally practiced in making preparations of blood for permanent preservation. In such preparations the corpuscles have almost exactly the size they possess in the perfectly fresh blood. The great majority of Mr. Gulliver's measurements were made upon blood prepared by this method, and at the time he appears to have regarded the results as the equivalent of measurements made on perfectly fresh blood. "In some instances," he tells us, "there was certainly a slight enlargement in the dried corpuscles, as compared with those seen in their own serum immediately after they were taken from the animal. In the greater number of trials, however, the size of the wet and dry discs corresponded accurately."* Twenty years later he seems to have modified this opinion somewhat, for he states, that, when the corpuscles of man and other mammalia were dried on glass, however quickly, they were usually just appreciably larger than in the "liquor sanguinis."† Welcker also found that the mean dimension obtained by measuring the corpuscles dried in a thin layer was apt to be rather greater than that obtained from the measurement of moist blood, and explained it by stating that "the very smallest more spherical corpuscles spread out a little in drying." He regards the difference, however, as so trifling that he uses measurements of dried specimens indiscriminately with those of moist in obtaining his averages. I myself am not satisfied that there is any constant difference, and find, on comparing the mean diameter of fifty corpuscles dry with fifty moist from the same individual, that sometimes the one, sometimes the other, is a trifle the largest. The dried corpuscles are very apt to be deformed, and often many of them are quite oval. If the long diameters of a number of such corpuscles are measured, the mean will be of course too great. I do not find it so if the measurement is confined, as it

* Lond. and Edin. Philosophical Mag., vol. xvi (1840), p. 25.
† Med. Times and Gazette, Aug. 1862, p. 158.

should be, to those corpuscles which have dried symmetrically and are quite circular.

How is it with regard to blood dried *en masse*, when sprinkled upon weapons, clothing, wood, etc. Dr. Richardson admits in this case that a *slight* contraction takes place, but evidently regards it as too trifling to interfere with the diagnosis. Carl Schmidt, on the other hand, found that the blood-corpuscles under such circumstances contracted to nearly one-half their original size, and gives .0040 mm. as the mean diameter of the corpuscles of human blood thus prepared, while he assigns .0077 mm. as the mean of human corpuscles dried in thin layers on glass.* It is not necessary for the purposes of the present paper to go into a detailed discussion of this question, for no one will pretend that it can be any easier to make the diagnosis of such stains than it is in the case of moist blood or of thin films dried on glass; and, if it is impossible in the latter case to ascertain by the microscope that the sample submitted is human blood, it would be absurd to hope to do better in the former. I cannot, however, refrain from expressing my conviction that Carl Schmidt was quite as accurate in measuring his samples as Dr. Richardson in measuring his, and that the latter has underrated the variations in size which the dried corpuscles may present under various conditions.

I may also call attention in this connection to the effect of water on the diameter of the corpuscles. Mr. Gulliver has pointed out, that, if "water be mixed with blood, the disks immediately become much enlarged and spherical, quickly losing their coloring matter; and yet, if the whole of this be thus removed after a while the outlines of the discs, very faint indeed may frequently be recognized, diminished considerably in diameter and apparently quite flat."† In another place he relates, that "some human corpuscles having an average diameter of 1-3429th of an inch, measured only 1-4800th of an inch after the whole of their coloring matter had been separated in this manner."‡ Suppose, now, the case of blood mixed with water and afterwards dried, as, for example, in the case of an unsuccessful attempt to wash away the blood while fresh?

In conclusion, then, if the microscopist, summoned as a scientific expert to examine a suspected blood stain, should succeed in soaking out the corpuscles in such a way as to enable him to recognize them to be circular discs, and to measure them, and should he then find their diameter comes within the limits possible for human blood, his duty, in the present state of our knowledge, is clear. He must, of course, in his evidence, present the facts as actually observed, but it is not justifiable for him to stop here. He has no right to conclude his testimony without making it clearly understood, by both judge and jury, that blood

* I quote from Fleming, op. cit., p. 111.
† Lond. and Edin. Phil. Mag., vol. xvi (1840), p. 106.
‡ Ib., vol. xxi. (1842), p. 198.

from the dog and several other animals would give stains possessing the same properties, and that neither by the microscope, nor by any other means yet known to science, can the expert determine that a given stain is composed of human blood, and could not have been derived from any other source. This course is imperatively demanded of him by common honesty, without which scientific experts may become more dangerous to society than the very criminals they are called upon to convict.—*American Journal of Medical Science*, Jan., 1875.

ECTOPIA CORDIS—A HEART OUTSIDE OF THE BODY.*

(By A. P. Parsons, M.D.

"It used to be on the left side, but we have changed all that."—*Old Play.*

On the 22d of August, 1874, a child was born by the wife of Archibald Mulkins, of the town of Hanover, Chautauqua county, N. Y., presenting the extraordinary phenomenon of *ectopia* or misplacement of the heart. It was situated below the sternum, or rather, it began at the lower terminus and extended downward. The upper part only was covered by the pericardium, which was sufficiently transparent or translucent to allow of a perfect view. The systolé and diastolé were perfect and regular. Compression would lessen them and produce pallor and faintness; respiration would be accelerated at first, and then diminish, but become natural upon the removal of the pressure. This showed a perfect communication between the heart and lungs. The arch of the aorta was visible, and also the left pulmonary artery crossing in front of the descending aorta. The *ductus arteriosus* acted as a ligament between the pulmonary artery and the aorta. The right pulmonary artery was visible at a single point only.

The protuberance extended from the sternum to the umbilicus. The whole size was about three and three-fourths inches in length and two and five-eighths inches wide; and it was elevated an inch and three fourths from the rest of the body. It would increase in size when the child cried; diminish after evacuation, and again increase after drinking.

The child was not fleshy when born, and was generally

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* There are several instances on record of the heart on the right, or rather, the wrong side. Dr. Oliver Wendell Holmes, describes a case in his own peculiar style in *The Professor at the Breakfast Table.*

"I took a stethoscope, which is a pocket spy-glass for looking into men's chests with your ears, and laid it over the place where the heart beats. I missed the usual beat of the organ. How is this? I said; Where is your heart gone to? He took the stethoscope and shifted it across to the right side; there was a displacement of the organ. I am ill-packed, he said, there was no room for my heart in its place, as it is with other men. God help him!"

"It is hard to draw the line between scientific curiosity and the desire, for the patient's sake, to learn all the details of his condition. I must look into this patient's chest and thump it and listen to it. For this is a case of *ectopia cordis*, my boy, displacement of the heart, and it isn't every day you can get a chance to overhaul such an interesting malformation. And so I managed to do my duty and satisfy my curiosity at the same time."

A case of ectopia, somewhat similar to this, described by Dr. Parsons, came under our observation while at Cincinnati.

healthy. All the functions were regular. It was fed on cow's milk. At the age of five weeks it had an attck of dysentery, but recovered. It was, however, attacked with cholera infantum early in the morning of the 10th of November, and suffered severely. Exhaustion supervened from violent crying, and it died in a few hours.

The *post mortem* examination revealed the lungs healthy and perfect. There was a little space between the lobules of the left lung, where the heart was absent. The stomach appeared healthy; the liver was very large, but otherwise normal.

Upon severing the heart, we found the vessels communicating with the lungs to be of usual size, but much larger than natural. The heart itself was flat and the lower third much broader and larger than was usual. The upper part was covered by the pericardium, but the lower part had grown firmly to the skin. There was an opening into the peritoneum, so that a portion of the intestines may have constituted a part of the "tumor."

The mother had been thrown from a carriage about seven weeks before the birth of the child. She rolled over several times after falling; and as she expressed it, she felt as though her heart would come through the pit of her stomach. No serious injury was however observed.

Such are the principal facts which I have been able to ascertain concerning this extraordinary case.—*Medical Eclectic.*

THE HUMAN HAIRS CONSIDERED AS TACTILE AGENTS.

(*Des poils considérés comme agents tactiles chez l'homme.*—"Gaz. Med. de Paris," Feb 6, 1875.)

Joubert has studied the supply of nerves to the hair follicle in different parts of the face. He found the greatest number of terminal nervous filaments to the follicles at the free border of the lids. Here, whilst some of the nerves terminate at the most superficial part of the skin, the greater number are distributed to the follicles of the eyelashes. His description of their mode of termination is as follows: "Bundles of dark-bordered fibres pass to that part of the follicle beneath the sebaceous gland. A single bundle, composed of three or four tubes coming from different directions, proceeds toward a particular follicle. Some tubes penetrate directly, but the greater number of the fibres creep along the external membrane of the follicle, surround it, making a real necklace; the directions of the tubes then change, they become vertical, mount parallel, in the thick part of the follicle, and after proceeding a certain distance, become invisible. With osmic acid one sees distinctly that the nerves lose their dark border, and that they penetrate as far as the vitreous membrane, upon which they creep. After that they have lost their medullary sheath, they show in their course small fusiform en-

largements, become so tenuous that they cease, so to speak, to be measurable; the course of the fibres is then rectilinear or sinuous, and the small fibres terminate in a small hyaline enlargement."—*Archives of Dermatology.*

RETIREMENT OF PROF. HYRTL

Dr. Hyrtl, the eminent Professor of Anatomy in the University of Vienna, delivered his final lecture on the morning of the 16th of March, and in the afternoon of the same day met an assemblage of over three thousand pupils and friends, who presented him with addresses and other evidences of esteem. He was the recipient also of over fifty congratulatory telegrams from various parts of the world, and on the following day the municipal council of the city conferred upon him honorary citizenship.—*Medical Record*, May, 1875.

RECENT PROGRESS IN PSYCHOLOGY.

By Theodore W. Fisher, M.D.

LOCALIZATION OF THE CEREBRAL FUNCTIONS.

In spite of the apparently contradictory nature of the evidence, and of Brown-Séquard's opinion, based on this contradiction, in opposition to special centres for the mental faculties, the belief is gaining ground that there are distinct centres for all the cerebral functions. It is also the opinion of most recent writers, that all the mental faculties are functions of the brain. Dr. Carpenter, it is true, places the will outside and independent of the cerebrum;* but it is only by a confusion of scientific and metaphysical reasoning that he arrives at this conclusion.†

In the symptom aphasia, for instance, the connection between lesions of the third left frontal convolution and loss of memory for words is too much the rule to be disregarded. In a case reported by T. Clave Shawe, M.D.,‡ degeneracy began in this convolution coincidently with loss of will-power over the word groups supposed to be located here. The disease subsequently invaded the corpus striatum, producing right hemiplegia. It is now quite generally admitted that aphasia follows left-sided lesions because most people are left-brained, so that a person is at first embarrassed in trying to speak from his right brain, as he would be in trying to write with the left hand, and for the same reason.

This location for the memory of words is still further confirmed

* Principles of Mental Physiology (London, 1874,) page 25.
† British Medico-Chirurgical Review, October, 1874. Recent Psychological Doctrines.
‡ British Medical Journal, May 2, 1874.

by the experiments of Ferrier, who finds that the centre for movements of the mouth and tongue in cats and dogs corresponds to this region in man. The researches of Hitzig and Fritsche in 1870, of Ferrier and Nothnagel, have been repeated with similar results by Dr. James J. Putnam, of Boston, by a committee of the New York Society of Neurology and Electrology, and still more recently by MM. Carville and Duret, of Paris.* These observers all find motor centres for the various movements of the head, body, and limbs, apparently located in the gray matter of the anterior lobes. They also find a non-motor region in cats and dogs, which does not respond to the electric stimulus. It is situated posteriorly to the centre for the facial muscles, including the convexity and hinder parts of the brain.

This division, if it exists in man, corresponds to that of Van der Kolk and many others, who believe the anterior lobes to be concerned in ideation and the posterior in sensation or feeling. The relations of the convolutions to each other, to the basic ganglia, and to the columns of the cord, are well described by Dr. Callender in his Lectures on the Formation and Early Growth of the Brain in Man.† Also by M. Paul Berger, in a paper entitled Distribution et Parcours des différent Ordres des Fibres qui entrent dans la Composition de l'Axe cérébro-spinal, d'après quelques Travaux modernes.‡

How can the anterior lobes be centres of motion and of intellect at the same time? Mind is the result of education, which depends on memory. The memory, so called, is a storehouse of organized, coördinated sensations and motions, with, in man, a limited region of abstract ideas and intellectual operations, intimately related to corresponding words. The ideas of words, *i. e.*, the organized memory of the acts necessary to pronounce words, as well as the ideas of all other associated movements, are probably located in the convolution of the anterior lobes. There seem to be two kinds of motor centres, automatic and voluntary, located respectively in the corpus striatum and in the convolutions. Lesions of the former produce ataxic, and of the latter, amnesic defects of speech, and of other movements.

The distinction between these two centres is made evident, as Dr. Laycock suggests, in a paper on Certain Disorders and Defects of Organic Memory,‖ by singing some familiar song, mentally and then vocally. The voluntary impulse is in the first instance confined to the ideational centres, in the latter case it is transmitted to the secondary or motor centre. Under certain conditions of mental abstraction or of somnambulism, for instance, this centre might perform the same act automatically and unconsciously. Dr. Laycock's application of the theory of reflex

* Lancet, January 16, 1875.
† British Medical Journal, June 6, *et seq.*, 1874.
‡ Archives de Physiologie, Mars et Mai, 1874.
‖ Edinburgh Medical Journal, April, 1874.

action to the highest cerebral functions is especially important and interesting.

DIPSOMANIA.

It is quite time this most prevalent form of insanity was practically recognized, not only by the medical profession, but by the public, through its courts and legislatures. No other form is capable of such adequate proof and abundant illustration. Leaving out all cases of accidental and deliberate drunkenness, morbid inebriety outnumbers all other forms of mental disease. Dipsomania was recognized by Salvatori, of Moscow, in 1817, as a "furor bibendi," and was minutely described by him, in its symptoms, pathology, and treatment, in a treatise entitled De Ebriositate Continua, Remittente, et Intermittente. He considered it a disorder of the ganglionic system. Dr. Druitt also regarded it as due to, or at least often accompanied by, neuralgia of the abdominal ganglia.* Sir R. Christison addressed the Royal College of Surgeons of Edinburgh sixteen years ago on this disease.

Of late, renewed interest has been awakened in the subject, in Great Britain especially, and much valuable testimony has accumulated. The following papers contain many useful opinions and statements of fact, namely, an address by Wm. C. Garman, Esq., President of the Midland Counties Branch of the British Medical Association;† a paper by Dr. James Russell, of Birmingham, on Alcoholism from a Clinical Point of View;‡ and an article on Alcoholism in the *Medico-Chirurgical Review* for April, 1874. A bill was introduced by the late Mr. Dalrymple, in the House of Commons, in 1870, for "restraining habitual drunkards."‖ The medical witnesses were Drs. Boyd, Crichton, Peddie, Nugent, Mitchel, Forbes Winslow, Dalrymple, McGill, Christie, and Druitt, all of whom believed habitual intemperance to be in many cases a form of insanity, demanding state interference. "An act to provide for the interdiction and cure of habitual drunkards" is now in force in Canada.§ It simply applies to inebriates methods of commitment and forms of restraint similar to those in use for other insane persons.

The relations between alcoholism and insanity are complex, and evidently deep-seated in the nervous organization. In the first place, dipsomania, like insanity, may be inherited or acquired. At the New York State Inebriate Asylum, one hundred and twenty-five out of three hundred and fifteen patients, in 1871, had intemperate ancestors. Dr. Kirkbride, of the Pennsylvania Hospital for the Insane, considers the causes of insanity and inebriety as identical. Dr. Brown testified before the committee of parliament that in his experience, in the cases of in-

* Medical Times and Gazette, 1862.
† British Medical Journal, July 25, 1874.
‡ British Medical Journal, November 14, 1874.
‖ See Blue Book, 1872, containing voluminous evidence taken by the committee.
§ Edinburgh Medical Journal, September, 1870.

sanity ascribed to drinking, there was hereditary tendency to insanity in one third. Thus we see inebriety may descend from an insane or intemperate stock. It may produce insanity, idiocy, or inebriety. Dr. Howe finds intemperate parents in one hundred and forty-five out of three hundred idiots, and Dr. Dodge in fifty out of one hundred. Dr. Russell in half his cases of epilepsy and hypochondriasis finds alcholism in the ancestry.

Acquired dipsomania is very often due to the same causes which tend to induce insanity, and this is especially the case in females Sunstroke, blows on the head, nervous shock, hæmorrhages, loss of sleep, excessive pain, abuse of opiates for relief of pain, disordered menstruation, uterine irritation, puberty and the climacteric, the exhaustion from lactation, together with a long list of moral causes, are prolific sources of inebriety, as well as of insanity. Insanity itself is also a cause of inebriety. That inebriety produces insanity in many forms is well known. Dr. Kirkbride found, in six thousand eight hundred and ninety-nine cases, twelve hundred and forty-nine due to ill health, and six hundred and ten to intemperance.

Periodicity is also a feature in which dipsomania resembles recurrent insanity. All writers lay great stress on this peculiarity, and many insist that it is necessary to restrain a patient through a whole interval and treat him during the succeeding period of desire for drink, if a cure is expected. Mr. Mould reported to the committee the case of a lady sent to his asylum thirty times in ten years for morbid inebriety. A case of paroxysmal mania, occurring every month, is on record, and it is said the superintendent bewailed this patient's death, as it diminished his annual list of "recoveries," by twelve. It is to be feared the so-called recoveries in voluntary asylums for inebriates, where the average duration of treatment is but three or four weeks, are of this character.

In most cases treatment must be compulsory. Long abuse of stimulants implies an organic change in the nervous system, for the eradication of which a long time is required, with complete disuse of stimulants. Self-control must be slowly cultivated, and the brain reorganized without risk of relapse. It is true, dipsomania is a most intractable disease, but it may be cured by persistent restraint, and by that alone in most cases. The paper of Dr. Bowditch in the Report of the State Board of Health for 1874 reflects the general opinion of the profession on this subject. The inaction of our legislature in the past must, I think, be attributed to false theories in regard to intemperance, and to a reliance on prohibitory legislation. The alienists of this State, with others, have repeatedly petitioned for an inebriate asylum, without avail. The writer presented almost precisely the same views as Dr. Bowditch advances, before a committee of the legislature this winter, in advocacy of a petition signed by fifteen hundred physicians and other intelligent citizens for compulsory

treatment of inebriates by the State. It was opposed by the representative of one voluntary asylum receiving State aid, and defeated by the selfish and unfair management of the superintendent of another, who wanted State aid. Aid to such institutions, useful in a limited way, does not relieve the public from responsibility for those startling crimes done by habitul inebriates. Neither is it economy to assist in providing a hospital for the convenience of the drunkard after his debauch. Both classes of drunkards should be restrained for long periods in workhouse or asylum, and their labor made remunerative while a possible cure is in progress.

CRIME AND INSANITY.

The relations of crime to insanity have received careful consideration of late from writers of eminence. In 1868 appeared Dr. Despine's Psychologie naturelle, devoted almost entirely to analysis of the mental status of the criminal classes. Dr. Holmes' article on Crime and Automatism, in the *Atlantic* for April, will give the reader a good idea of the book. Dr. Despine, attracted by the singular want of emotion displayed by most criminals, was led to a thorough examination of court records and other sources of information. He arrives at a belief in the entire absence of moral sense in this class. He says that free will, which in the normal man is only controlled by the sense of duty, in the criminal has no such counter-balance, this sense being wanting His acts are therefore mentally automatic, the result of the strongest instinct, appetite, or passion prevailing at the time. Most criminals are therefore morally irresponsible, no matter how great the crime as against society. Like brutes, savages, and idiots, they yield to natural appetites and passions, unrestrained and unreproached by any feeling of impropriety, although intellectually cognizant of the moral standards of society. Hence their remarkable *sang froid*, and the superficial character of any apparent reformation or conversion.

Dr. Thompson, Resident Surgeon to the General Prison for Scotland, at Perth, finds his experience confirmatory of the views of Despine. He recognizes various degrees of "moral insensibility."* In a previous paper on the Hereditary Nature of Crime† he adduces evidence of a criminal class with marked mental and physical traits of hereditary origin. The transformations of crime with epilepsy, dipsomania, and various forms of insanity, as well as its incurable nature, tend, he says, to prove its heredity. In his second paper, Dr. Thompson examines carefully the physical, intellectual, and moral characteristics of criminals, and their liability to insanity. He believes the majority of them are mentally deficient. Of juvenile offenders, one

* Journal of Mental Science, October, 1870.
† Ibid, January, 1870.

third are weak in mind. Of six thousand adults twelve per cent. were distinctly imbecile, epileptic, or suicidal, by the records. At Millbank, of nine hundred and forty-three there were two hundred and eighteen weak-minded, and thirty-four insane, besides the epileptics. This is one in twenty-eight insane, an astonishing proportion compared with the ratio of one to four hundred and thirty two for England and Wales. Epileptics averaged one in one hundred. The frequency of recommitments is also a striking fact, showing the really small numbers of the criminal class, as well as the incurable nature of crime. Female thieves averaged from six to seven committals each, in seven years. On the records four hundred and fifty-eight persons counted as two thousand eight hundred and seventy-four prisoners. Of four hundred and thirty murderers, but one showed any remorse. They sleep soundly, as a rule, unvisited by nocturnal terrors or qualms of conscience. The frequent and motiveless emotionless outbreaks, assaults, and disturbances of prisoners resemble similar attacks with the insane.

Dr. Nicholson, Surgeon in Convict Prisons Department of Her Majesty's Civil Service, has an elaborate article on the Morbid Psychology of Criminals.* He divides convicts, as we have divided drunkards into two classes, the accidental and the habitual. In reference to the latter, he says: "There is an appearance of motive and self interest, just sufficient to prevent them from falling within the range of insanity." Disease of the brain stands next to consumption as a cause of death. Instances of simple perverted ideation are extremely common; such as a belief in the hostility of certain officers, suspicions that their food has been poisoned, that their time is up, or that letters due are withheld. Belief in the injustice of their sentence is a universal delusion. Hallucinations of hearing are very frequent, with occasional stories of mysterious visitations or visions.

Space forbids further detail. The writer, as the result of five or six years' experience in connection with the city institutions, can fully confirm the above statements. In view of these facts, what treatment should be adopted? The general opinion is in favor of long sentences for habitual criminals. This is just to the individual, protects society, and is economical. Prisons should be improved hygienically, and in their moral atmosphere as well. The fullest opportunities for labor should be afforded, with a percentage of wages reserved for the prisoner or his family. Sentences should be gradually abridged in proportion to good behavior. Pardons should be rare. Hospitals for the criminal insane should be established, and capital punishment never inflicted, when there is suspicion of mental unsoundness. The criminal should have the benefit of this doubt in all cases.—*Boston Medical and Surgical Journal.*

* Journal of Mental Science, July and October, 1873, and April, July, *et seq.*, 1874.

VON BASCH ON THE ARREST OF INTESTINAL MOVEMENTS BY IRRITATION OF THE SPLANCHNICS.

T. Lauder Brunton, M.D.

Dr. Von Basch (Stricker's *Medicinische Jahrbuch.*, 1874, p. 45) has made a series of experiments in order to determine whether the splanchnic nerves arrest the motion of the intestines by acting directly on their motor ganglia in the same way as the vagus stops the heart, or whether they do so by causing contraction of the intestinal blood-vessels, and thus removing from the intestinal ganglia the blood which acted as a stimulus to them and produced the movements.

The author finds that a convenient way of exciting peristaltic action is to inject nicotine into the veins of an animal. The injection causes immediate tetanus of the intestine, followed first by absolute rest, and then by active peristaltic movements. These movements, as well as those which occur after opening the abdominal cavity without administration of nicotine, can be completely arrested by irritation of the splanchnics, and the intestine also becomes dilated and flaccid. The cessation of movement and relaxation of the muscular fibres, however, do not always occur at the same moment, for sometimes the circular fibres of the gut remain in a state of tonic contraction when all movement has stopped and the longitudinal fibres are completely at rest. The action of the splanchnic nerves in arresting the movements of the intestines was considered by Pflüger to be of the same nature as the action of the vagus in arresting the movements of the heart; but the author was led to the conclusion that Pflüger's notion was incorrect, by former experiments made by him in conjunction with S. Meyer. At the time when Pflüger wrote, it was generally believed that complete anæmia of the intestine was a cause of movement; but their experiments showed that a diminution in the quantity of blood contained in the intestinal vessels did not occasion intestinal movements, and that the cause of increased peristalsis was to be sought for in the condition of the blood, not in its quantity. They therefore considered that the splanchnics arrested intestinal movements by causing contraction of the intestinal vessels, and thus expelling from the walls of the intestines the blood which would stimulate them to movement. Their explanation has received additional confirmation from the experiments mentioned by the author in this paper, which show that, when the peristaltic movements occur after the injection of nicotine, the blood-pressure continues to sink, indicating that the intestinal vessels have become dilated. The increased movement is attributed to the dilated vessels allowing more blood to circulate in the intestine, and thus increasing the stimulus to their action. When the splanchnics are irritated the intestinal vessels contract, the blood pressure rises, and the peristaltic movements cease. The arrest of peristalsis occurs at the same time that the blood-pressure reaches its maximum.

Both of them occur during irritation of the nerve if it be long continued, but if the irritation be short they both occur after it has ceased. Meyer and the author found that the intestinal movements can be sometimes arrested by stopping the circulation either by ligaturing the thoracic aorta or by irritating the vagus until the heart ceases to beat. Neither of these methods answers well when the peristalsis has been excited by nicotine, as the vessels are dilated by the drug and contain much blood even after ligature of the aorta, and the vagus is also much weakened and does not stop the heart. Irritation of the medulla oblongata in curarised animals has exactly the same effect as irritation of the splanchnics. The blood-pressure will rise and the intestines come to rest on irritation of the medulla, even after both splanchnics have been divided, but not so constantly as when these nerves are intact. The results of irritation of the medulla after division of the splanchnics were not alike in all individuals. In some the intestines stopped, in others irritation of the medulla had little effect. In those where the intestines stopped the blood-pressure rose high, while in the others it only rose slightly. The reason of this variation in the results of irritation in different animals, is that the vaso-motor nerves of the intestine are not all contained in the splanchnics greater and less, but are given off in the roots of all the sympathetic ganglia. When the splanchnics are divided, their place is supplied to a greater or less extent by the other vaso-motor nerves which pass from the lumbar portion of the spinal cord to the abdominal vessels. In the dog this occurs to a considerable extent; but it is slight in the rabbit, which has most of the vaso-motor fibres for the intestinal vessels in the splanchnics. Irritation of the medulla has little action on the intestinal vessels or peristaltic action if the splanchnics have been divided in any animal where the vaso-motor fibres are chiefly contained in these nerves; but it will continue to have an effect if the vaso-motor fibres pass to the intestines by other channels. When the vaso-motor nerves are too weak for irritation of the medulla to cause complete contraction of the vessels, and thus stop the intestinal movements so long as the heart is propelling the blood onwards, these effects may be produced by ligaturing the aorta before the irritation is applied to the medulla. The compression must not be applied at too short intervals or continued too long, or the irritation will cease to have any effect; but if care be taken in these respects, the experiments may be repeated ten or twenty times. When the aorta is ligatured, irritation of the medulla causes very little change in the blood-pressure; it quickens the pulse which had been slowed by nicotine. Stoppage of the respiration irritates the vaso-motor centrum by rendering the blood going to it venous, and produces the same effects as irritation of the medulla, both when the splanchnics are cut and when they are whole. If small quantities of nicotine be injected while the intestines are moving, they immediately make a sudden movement

and then stand still. At the commencement of the stand-still the circular fibres are tonically contracted, so that the intestines seem in a state of tetanus. This lasts for some time, and then they gradually and completely relax. This occurs, whether the spinal cord or splanchnics are whole or divided.—*London Medical Record.*

RANVIER ON THE PREPARATION OF BONY TISSUE WITH BLUE ANILINE DYE INSOLUBLE IN WATER AND SOLUBLE IN ALCOHOL.

This method, described by M. Ranvier in the *Archives de Physiologie*, February, 1875, is alleged to possess certain advantages over the one usually employed in the examination of bone, namely, of mounting dry sections in Canada balsam. By the use of the following means, the structure of the object is far more perfectly shown.

A portion of the shaft of a long bone is procured, and immediately on removal from the body is plunged into water. It is allowed to macerate in this for the space of a year; the water in the mean time being repeatedly changed. At the end of that time the bone will be found to have become as white as ivory, and quite free from any adhering tissue. The object of immediately plunging the bone in water is to prevent the infiltration of the canals and substance of the bone with fat

When the bone is thoroughly macerated, sections of it are made with a saw. These sections are ground down on pumice-stone, and finally polished on a harder material. In order to remove the powdered fragments of bone which have been ground off, from the canals and lacunæ on the surface, it is sufficient to scrape the section with a scalpel. It is then placed in a warm solution of the aniline, and allowed to remain there for two hours, and afterwards dried on a water-bath.

The section is next rubbed on a hone, moistened with a 2 per cent. solution of common salt. It is then washed in this solution, and permanently mounted in a mixture of equal parts of the solution of salt and glycerine.

In objects prepared in the above manner three important facts, not previously noticed, may be observed.

The first is the existence of lacunæ or corpuscles, consisting of a simple slit, not much larger than a canaliculus. The fact of their being lacunæ is proved by the relation in which they stand to the canaliculi, which is precisely the same as that of other lacunæ. The name given to these fine atrophied corpuscles or lacunæ is *confluents lacunaires*. They are lacunæ either partially or completely atrophied. This observation bears out the theory of the disappearance of the lacunæ with age. But this disappearance is not due to the lacunæ being filled up with fresh bone, but rather to a process of atrophy.

The second interesting fact rendered clear by this method is, that the canaliculi which are given off from the outer sides of the external lacunæ of each Haversian system proceed for a short distance as though they were going to inosculate with a neighboring system. They then turn on themselves, and inosculate with other canals belonging to their own system. These are called *canalicules récurrents*. From this fact we may conclude that each Haversian system forms a complete structure by itself and represents the elementary bone.

The third fact relates to the structure which intervenes between the Haversian system. In transverse section there may be observed, in these islets of bone, certain small circles which represent the fibres of Sharpey divided transversely. These circles are only to be seen in the intermediate structure, never in the Haversian system. This fact proves that the substance in these localities is developed from the periosteum. The relation which the corpuscles and canaliculi bear to the fibres of Sharpey may be briefly stated as follows: The corpuscles are placed in the angles formed by the intersection of these fibres. The canaliculi surround the fibres, but do not pass through them. This last fact, taken into consideration with that of the recurrent canaliculæ of the Haversian system, proves that the canaliculi are spaces left in the substance of the bone at the time of its development, and not fissures made during the preparation of the section.

[The above paper is accompanied with a plate which demonstrates very fairly the facts pointed out by the author.—REP.]—*London Medical Record.*

BENEDIKT ON THE PHYSIOLOGY AND PATHOLOGY OF THE PYRAMIDS OF THE MEDULLA OBLONGATA.

By W. Kestevan, Junior.

In a paper originally published in the *Wiener Medizinische Presse*, Dr Benedikt seeks to prove that the commonly received opinions as to the functions of the pyramids are wrong. He commences by stating that the pathological teaching of the present time asserts that the pyramids are the conductors of the excito motor impulses in a centrifugal direction, and of sensation in a centripetal direction; but that the real fact is, that they are neither motor nor sensitive in the sense intended by Bell. He proceeds to state that anatomically the pyramids may be divided into bundles of fibres, which are continuations of the lateral and posterior columns of the cord. Fifteen years' clinical experience, more particularly of the facts presented by tabes dorsalis, have led him to the conclusion, contrary to that of most physiologists and pathologists, that the bundle which is the continuation of the posterior cord consists of fibres of a regulating and co-ordi-

nating motor nerve-system, and that Bell's doctrine of their connection with the central nerve-system is in opposition to pathological truth. The physiological conclusion, also, that the external bundle of the pyramids is sensory, because of its connection with the posterior column of the cord, is wrong in principle, and involves a *petitio principii*, as it is necessary first to prove the sensory property of the posterior cord itself. Neither the external nor the internal bundle forms any direct continuation with the spinal cord.

Experimental physiology is thus, with one exception, in the dark as to the nature of the pyramids. It says that the negative results obtained by section of these parts renders their nature enigmatical. An experiment by Harless, confirmed by Cyon, is the only one that bears out the author's views. The correctness of the conclusion deduced from this is, however, disputed. Pathology, according to the author, if properly viewed, presents a more satisfactory solution of the question. Careful observation of disease has convinced him that, when these parts are affected, there is a certain innervation of the motor power, more particularly of the upper limbs, a disagreement between antagonistic groups of muscles, the result of which is an inaccuracy in obeying the ordinary motor impulses of the will. If, however, the will be more powerfully exerted, this inaccuracy is overcome.—*The London Medical Record.*

MAYER ON RESPIRATORY MOVEMENTS.

It has been observed, that by the stimulation of certain inhibitory nerves in the vagus, a longer or shorter pause of the heart's action is produced. The disturbance thus caused in the normal circulation, Dr. Sigmund Mayer has utilised in study of some questions connected with respiration (*Sitzungsberichte* of Vienna Academy, Band lxix.).

The experiments were made on dogs; (for details of the method, we must refer to the memoir). A stoppage of the heart, lasting at least eight to ten minutes, can be produced as indicated. It is best to stimulate the right vagus, as this has a greater inhibitory action than the left. During the heart-pause, the respirations become quicker and deeper. If, now, the stimulation be stopped, so that, with returning heart-contractions, the blood-pressure quickly rises again to its former state, there follows on the deep and quick respirations, a complete stoppage of breathing, which may last for half a minute. If the stimulation of the vagus be continued so long that the heart begins again spontaneously to beat, though more seldom than before stimulation, it is found that the respirations, which had become quick and deep, now, on renewal of the heart-beats, are separated by long pauses, or entirely cease. If the stimulation be stopped

after a short heart-pause has been produced, so that a series of quick pulses follows, and then the vagus be again stimulated, renewing the heart-pause, there follows a longer pause in the breathing. The experiments yield essentially similar results when, besides the vagus subjected to stimulation, that of the other side also is cut.

The stoppage of breathing is in the position of expiration. This is indicated by the curves, also by the fact that, in emerging from that state, the animal begins with an inspiratory movement.

Dr. Mayer offers the following explanation of the phenomena: By stoppage of the heart we stop the transmission of blood to the brain; and the blood, which now stagnates in the latter, becomes impoverished in oxygen, stimulates the respiratory centre, causing quicker and deeper respirations (dyspnœa).

But these quick and deep respirations have evidently the effect of an excessive arterialisation of the stagnating blood in the lungs (greater than can be produced by blowing air into lungs with a bellows). Now, when the heart begins to act again, a current of highly arterialised blood is sent to the brain-centres, and such (as has been shown) is not capable of causing respiratory movements. This stoppage of breathing is an apnœa which hitherto appears only to have been produced by injection of air with a bellows.

This method, the author points out, has advantages over that with bellows. It is more simple and direct. The change is wrought by the animal's own vital functions; and the effects of variation in the quantity of oxygen and carbonic acid in the blood upon the respiratory centre, are compressed into a comparatively short space of time.

He next brings evidence in support of his explanation. It has been shown before that dyspnœa can be produced by stoppage of the blood-circulation; some observers having done so by cutting off the supply of blood to the brain. Then as to the apnœa, produced by over arterialised blood; if the deep and quick respirations were, in some way, prevented from so affecting the blood, the cessation of breathing should be excluded. It is actually so; if the animal, during stoppage of its heart, be made to breathe, not free atmospheric air, but from an enclosed space, by a narrow connecting piece, rendering the exchange of gases difficult, there is no stoppage of respiration, and the dyspnœic effects continue. The same result is had, if, during stoppage of the heart, the trachea be closed.

Some might, perhaps, say that the apnœa is not due to direct influence of the highly arterialised blood on the respiratory centre in the brain; but to changed reflective action on that centre, through excitation conducted from the periphery, especially the excitation shown by Hering and Braun to arise from artificial inflation of the lung, and propagated by the vagi. In reply, Dr. Mayer points to the fact that the results were not

affected, though the second vagus was also cut. Besides, the animal emerges out of its still state, in the other case (of inflation of the lungs), by an expiratory movement.

Dr. Maye. points out, that the above method of changing the velocity of the blood-current in the lungs may be variously used for regulating, within certain limits, the proportion of gases in the blood; further, that in all experiments on respiratory movements it is indispensable to have exact control over the action of the heart, so as to be able to distinguish the alterations in the breathing-movements produced by changes in the circulation, from those produced otherwise (nerve-stimulation, etc.); and lastly, that this method of making an animal apnœic is well suited for lecture experiments.—*London Medical Record.*

SURGERY.

[Compiled by SAMUEL LOGAN, M.D., Professor of Anatomy and Clinical Surgery, Medical Department, University of Louisiana.]

NUSSBAUM ON THE TREATMENT OF UNUNITED FRACTURE BY TRANSPLANTATION OF BONE.

In the *Aerztliches Intelligenz-Blatt*, February 23, 1875, Professor Nussbaum, of Munich, publishes a very interesting and practical clinical lecture on the treatment of ununited fracture, its pathology and methods of treatment, and particularly on the treatment by the transplantation of bone, in complicated gun-shot fractures, resulting in an open false joint, with great loss of bone-substance and necrosis, where the cartilage-encrusted extremities are merely bound together by a long thin tendinous band. As regards the limbs, he confesses that he has had only hitherto one instance in which he has employed the method, but with such a singular amount of success as to afford great encouragement to further attempts in the same direction.

A Saxon lieutenant, twenty-four years old, on July 12, 1870, in the fight at Mars la-Tour, received a very severe gun shot wound in the right forearm. The ulna was smashed in the middle, the spinters of bone had necrosed, the periosteum had been destroyed, and subsequent cicatrisation had resulted in a false joint, having about two inches and a half of open wound. The two approximating ends of the fractured bone were united by means of a thin fibrous cord. Although the radius was intact, the functions of the bone were so limited, and its abnormal motion so exaggerated, that the patient was invalided. On July 14, 1874, the patient being chloroformed, the false joint was exposed. Both ends of the fractured bone were thin, covered with a pointed cartilaginous process, and slightly united by means of a weak, tendinous false ligament. The pointed cartilaginous extremities and the thin false ligament, being rather in the way than useful, were cut off with strong scissors. Next, the upper sur-

face of the proximal end of the ulna was half sawn through, about two inches and a half from its extremity, and with a sharp cutting chisel this upper piece of the ulna, with its periosteum, was split off, parallel with its upper surface, yet so that the periosteum of the pointed extremity and of the under surface were not both cut through; thus the detached portion of bone had still a slight nutrient bridge derived from the periosteal covering. Finally, the portion of bone thus detached was so deposited in the gap, that its internal upper surface now became external, the under internal, and the outer surface became the upper one. Had the transplanted portion been turned downwards so that the now upper surface had become the under, the periosteal bridge remaining on the under surface must have been much more dragged upon and torn, and it would have been probable that the blood-communication, through the connecting periosteal slip might have been entirely cut off.

[Without the accompanying engraving the description given reads somewhat obscurely, but it would seem that the tranplanted portion of the bone obtained its new position by a sort of *mouvement en bascule.—Rep.*]

In the gap in which the transplanted portion of bone had been placed, a tolerably deep incision had been previously made into the indurated soft parts, to promote some inflammatory action in the neighborhood, and to favor the adhesion of the introduced portion of bone. The wound was dressed with carbolised dressing and closed with seven sutures, and subsequently enclosed in a gypsum bandage furnished with a trap door.

The operation was so successful that in December, 1874, the patient was gazetted to a grenadier regiment.

Professor Nussbaum makes the following remarks on the two great mishaps after fracture, viz., healing bent, or with considerable shortening. Supposing a case is met with within six months, the badly united fracture should be simply broken up again under chloroform, as, before the definitive callus is formed, a refracture is neither difficult or dangerous.

A linen cloth should be laid on the edge of a table, and the fracture to be rebroken brought quite to the margin. A strong pressure downwards readily breaks the provisional callus, and it is best broken in the direction corresponding with the faulty curve, and should be commenced by extension (for which purpose an extension bandage is most serviceable). Considerable risk is run in refracture, during this stretching, of rupturing some artery adherent to the callus, since the process is never effected slowly but always with a powerful jerk. But if the callus be broken up by bending inwards, the necessary amount of stretching can be conducted slowly and surely. A good position having been obtained, the new fracture can be treated as a simple one.

If six or seven months have passed and the definitive callus have become of ivory hardness and stronger than the sound

bone, should any attempt be made at refracture, it would remain intact, and the resulting fracture of the normal bone would render the condition worse than before. Under these circumstances only operation is of use.

Langenbeck employs two processes in the subsequent operative procedure on the bones. After having made a small incision in the skin, he first bores through the callus at the angle; he then enters a small fine key-hole saw into the hole thus bored, and cuts through the bent bones right and left, to such an extent that merely a thin bridge of the cortex of the bones remains in tact. The wound is then carefully cleansed. After granulation has taken place and the integument has healed over, he undertakes, as the second portion of the operation, the fracture of the remaining thin cortex, and treats it, by means of a gypsum bandage, as a simple fracture of the bone. The idea is admirable. The object of this partial sawing is, that the mass of definitive callus, which has become as hard as ivory and could itself not be broken up, is readily ruptured when it has been about three parts sawn through, and the fracture can be effected at the 'place of election.' It is a matter of fact that the wounds effected by the boring and sawing portions of the operation produce such inflammatory reaction that the remaining lamellæ thereby become soft and elastic, and so the rest of the operation is rather a bending than a fracture. The most important advantage, however, of Langenbeck's operation, consists in this, that when there is a wound there is no fracture; and at the time when one has to be made and treated, there is no open wound.

The American surgeons reduce the bones to be broken later on, simply by drilling five or six holes through them. Szymanowsky saws a wedge-shaped piece out, three parts of the thickness of which he removes, and after the healing of the soft parts, breaks through the remaining portion. Professor Nussbaum's plan is to avoid the sawdust and *débris* arising from the drilling and sawing operations, by using a fine sharp cabinet-makers' chisel. He chisels through about three-quarters of the thickness of the bone, and then withdraws the chisel, allows the wound to heal, and afterwards breaks through the remaining portion.—*London Medical Record.*

RUPTURE OF THE BLADDER.

A case of spontaneous rupture of the bladder was recently observed by Colombat, of Marseilles. A man, twenty-eight years of age, who had had gonorrhœa twice, had retention of urine. While making an ineffectual attempt to evacuate his bladder, he suddenly perceived a sensation as if something had burst in his abdomen. A feeling of relief was first experienced, but excessive pain soon commenced in the bowels. On admission to the hospital the diagnosis of the rupture of the bladder was

made, not only from the above symptoms, but also from the fact that only a small quantity of urine flowed from the catheter, although the man had passed no water for two days. The patient died in three days, and, on section, a rent about the size of a half-franc was found on the anterior surface of the bladder, two or three millimetres from its summit. The edges of the rupture presented a ragged and discolored appearance. The prostate was the seat of an immense abscess.—*Marseilles Méd. and Ugeskrift fur Laeger*, August, 1874.

SALICYLIC ACID AS A DISINFECTANT.

This agent has been recently introduced into the surgical department of the Bellevue Hospital, and serves a much better purpose than carbolic acid. The great advantage it possesses is, that it is destitute of odor, while it thoroughly deodorizes all discharges that it comes in contact with. It is used in solution directly to the granulating surface by means of a syringe or irrigator. The solution is made by combining and dissolving the following: salicylic acid, one part; phosphate of soda, three parts; water, one hundred parts.—*New York Medical Journal.*

ASCITES—RECOVERY AFTER TAPPING ONE HUNDRED AND THIRTY-THREE TIMES.

Dr A. Jamieson (*Edinburgh Medical Journal—London Medical Record*, April 14, 1875) reports the following remarkable case: A woman was tapped one hundred and thirty-three times on account of rapidly recurring ascites. Cause of ascites was obscure. Patient was temperate and had generally enjoyed good health. The ascites came on gradually, her age being sixty. There was no heart disease; no albuminuria; never jaundice; size of liver normal; no ovarian disease. The operations were all performed between April, 1870, and September, 1874. At one time the patient had to be tapped every week, three gallons being removed on each occasion. Towards the end of this period the fluid accumulated more slowly, but the interval between the one hundred and thirty-second and one hundred and thirty-third tapping was only three months. Since last operation there has been no appearance of the dropsy; the patient now gets about actively, and is in excellent health.—*Medical and Surgical Reporter.*

ANTISEPTIC JAPANESE PAPER AS A DRESSING FOR WOUNDS AND ULCERS.

Mr. Callender said that his friend Dr. Wallace of Colchester

had forwarded to him some samples of Japanese paper, with a request that he would see if any use could be made of the material as a dressing for wounds. Only one of the samples appeared to him to be suitable for this purpose; but the qualities of this specimen of paper made it very serviceable as a substitute for lint, whilst it had the advantage over lint of being very much less expensive. He had tried it as a dressing for various wounds and ulcers, and in a case of deep-seated inflammation of the hand, with very good results. It had been used in all instances as prepared by Mr. Jepps, superintendent of the apothecaries' department at St. Bartholomew's Hospital, with antiseptic solutions in one of the two following ways: 1. Solution of salicylic acid and mastich. Take of salicylic acid forty grains; mastich sixteen grains; rectified spirit one fluid ounce; dissolve the mastich in the spirit, add the acid, and shake till dissolved. 2. Solution of carbolic acid and mucilage of acacia. Take of carbolic acid one ounce; mucilage of acacia one ounce; water twenty ounces; dissolve the acid in the water, add the mucilage and mix. The strength of this solution might be varied, but it was desirable to prepare it for keeping of a greater strength than would be required for immediate use; first to allow for the loss of carbolic acid from evaporation, and secondly, to permit the dipping of the prepared paper in water before it was applied as a dressing; a process which necessitated some further dilution of the acid. The mastich and the mucilage were added to increase the softness of the paper. Two sheets of the paper were placed together, a single sheet being rather too fragile, and were saturated with one of the above mentioned solutions. They were then rapidly dried, and stored with others in tin boxes. When used, they might be applied dry to the surface of the skin or of a wound; or they might be moistened with water or with any kind of lotion after such application; or they might first be dipped in water or lotion, and then placed over the diseased or injured parts, just as lint was ordinarily used. The paper answered best when covered with oiled silk, so as to act as a warm water dressing. It appeared to be agreeable as an application. It was very readily adapted to irregular surfaces; and wounds and ulcers had healed rapidly under its protection. It was also available for carrying unguents and similar remedies, and seemed to be well adapted for use in various skin affections.—*British Medical Journal.*

IS STRAPPING NECESSARY IN THE TREATMENT OF INFLAMED TESTICLE?

By T. Curtis Smith, M.D., of Middleport, O.

This is a question I have often asked myself when called to treat difficulties of this nature. It is truly a practical question; for

upon its answer depends no little trouble to the surgeon, and annoyance, sometimes suffering, to the patient. That the strapping, when well done, will prevent further swelling of the testicle, and will promote absorption, all are probably ready to grant. But when the absorption or diminution of the swelling has fairly begun, the attendant finds it necessary to renew his strapping in order to secure the full value of this plan of treatment. Thus he finds himself set for a daily task, not always an easy one, until the case has quite recovered.

Equable pressure will certainly secure an increased absorption, but may it not be obtained by other means, of less trouble. I think it certainly can; as by the plan of enclosing the testicle in a light rubber sac, or condom, as some have recommended. Either of these will not require to be daily changed, for as the swelling diminishes, the sac closes in also, thus keeping up a continued and equable pressure from first to last. Another advantage in using these, is the fact that cold or evaporating lotions can be as readily applied as though no sac enclosed the testicle, and much more cleanly than when the common adhesive straps are applied. Another means of effecting pressure is by the use of collodion, which, after its application, immediately contracts, bringing to bear quite a strong pressure over the entire surface where it is applied. This can be removed and renewed, certainly, more easily than the straps.

But in my experience, very few cases need strapping. I have not strapped an inflamed testicle for years. Nor have I applied any kind of pressure, and yet I think I have uniformly good results. Many cases are very light, and need little more than a good suspensory bandage, a saline cathartic, and perfect rest. In severe cases, I put the patient in bed; give him a free saline cathartic, apply cold, *very* cold water or ice to the swelled organ, and keep it elevated as high as possible. The cold *constantly* and thoroughly applied, by which I mean that the testicle is never to be allowed to get warm; but the cold is to be kept applied continuously, will check the inflammation usually in twenty-four hours or less, and by the second day the swelling is found to be receding. After the saline has operated freely, opium in large doses is advisable, not only to allay the pain, but it should be given in antiphlogistic doses.

Very many of the cases are of syphilitic origin. When such is the fact, the free use of mercury is very judicious, or of mercury and potass. iodid. In all cases where I have any doubt as to whether the disease is of syphilitic origin, I invariably give the patient the benefit of the doubt, and give the mercury anyhow; for the reason that if it is not specific, the agent is a good antiphlogistic, and doubly so if the suspicion be correct. I have never met with a case that did not readily yield to the above plan of treatment, when well carried out by the patient and attendants.—*Medical and Surgical Reporter.*

EXASTOSIS OF INFERIOR MAXILLARY—DEATH FROM CHLOROFORM.

Hiram J., æt. 16; parents both living; says his health has always been good; states that his brother had tumor removed from left side of face, the character of which was unknown. Patient states that three or four years ago a swelling commenced on left side of symphysis of chin. Swelling has gradually increased; pain not severe.

Present condition.—Left side of face much larger than right, of a reddish color; there is no opening in the jaw—no discharge.

Prof. Dawson made an incision into the affected part, while under influence of chloroform, and found a softened condition of the bone, and while removing part of the jaw the patient ceased to breathe. Artificial respiration was immediately resorted to, but all that could be done failed to restore the patient.—*Medical and Surgical Reporter.*

CARIES OF THE VERTEBRÆ; TUBERCULAR DISEASE OF KIDNEYS AND TESTICLES.

At a meeting of the New York Pathological Society, held March 24th, 1875, Dr. Otis presented specimens of tubercular disease of the kidneys, with the following history:

The patient was a man aged forty-two, who in his youth had suffered from morbus coxarius, but since that time had recovered from it to such an extent that he became an athlete. Four years ago Dr. Otis was sent for to see him, and found that he had been rowing for several hours, and after this had suffered considerable pain in passing his water. An examination of the bladder showed no signs of disease. The urine was limpid, and presented nothing abnormal. The only relief the patient obtained was from narcotics, and these had to be continued at intervals. During the following two years the patient suffered from catarrhal inflammation of the bladder, but had not previously or at any time had gonorrhœa or any venereal disease. After suffering from catarrh of the bladder for two years, he found that, after urinating, he passed some blood, and it was then suspected that he might have stone, particularly as he was in the habit of passing calcareous matter, but a thorough examination failed to give any evidences of it. In the following year he was seen by Dr. Van Buren, and again examined in vain for stone. The spasm of the neck of the bladder increased to such an extent as to make the patient's life one of torture. Two years ago he was again seen in consultation, and it was suspected that the stone might be sacculated in the bladder, and, even if there was no stone, it was considered advisable to operate for the relief of the cystitis. The median operation of lithotomy was performed by Dr. J. W. S. Gouley, but no stone was discovered,

after a very careful exploration of the bladder. For several months after this the patient was very much improved but not thoroughly cured, and after a year the spasms of the neck of the bladder returned. The urination became so constant that it was necessary to wear a urinal. The patient, about this time, detected a lump in the back, in the region of the seventh dorsal vertebra, and on examination it was found to be caries. He was then placed under the care of Dr. C. F. Taylor, who applied an instrument for the cure of that disease, but the patient was unable to keep it applied for more than two weeks. With the development of Pott's disease, there was a marked improvement in his urinary trouble, and the pain then became located in a plane corresponding to the top of the hips. After removing the instrument from his back, he was placed upon a water-bed. Diarrhœa then set in and continued, in spite of treatment, for a week, and with the appearance of the diarrhœa the bladder-symptoms improved to a very marked extent, and on its cessation they grew worse. At times he complained greatly of pain in the penis, and found that he was greatly relieved by covering the head of it with snow. Two weeks ago he died of uræmic convulsions.

Autopsy.—Pus was found in the peritonæum, but there was no peritonitis. The pus was found beneath the sheath of the psoas, and came from two abcesses situated on the left side near the eighth dorsal vertebra. The left lung was adherent to the walls of these abcesses. During the life of the patient he complained greatly of cough, which could not be accounted for by physical signs; and the attachment of the lung cleared up this matter. The right kidney had undergone extensive cystic degeneration. The left kidney was three times larger, and had contained a large abscess in its pelvis, extending throughout its calices. The walls of the bladder were thickened and contracted. Behind the prostate was found a sac which was well suited to contain a stone, but none was found there or anywhere else. The right testicle contained tubercular matter, and had been affected for five years. The supposition at first was, that it was due to the irritation caused by the spinal disease. The President, after examining the specimens, said that he considered the kidney and testicle to have undergone tubercular inflammation. In answer to a question, he said that the tubercular disease was usually primary. Dr. Otis said that the incision into the bladder was kept open for a month.—*New York Medical Journal.*

DISEASES OF WOMEN AND CHILDREN.

BY THOMAS LAYTON, M.D.P.

The following extracts, taken from an article published in the *British Medical Journal*, by Graily Hewitt, M.D., may prove

valuable to practitioners who have exhausted the usual methods of treatment pursued in dealing with the vomiting of pregnancy.

ON DR. COPEMAN'S NOVEL TREATMENT OF OBSTINATE VOMITING IN PREGNANCY.

Dr. Copeman has described a process which he has, he states, accidentally discovered; viz., the artificial dilatation of the os uteri by the fingers as a cure for obstinate sickness in pregnancy. His results are remarkable, and, stated as they are by a gentleman of his known experience and accuracy, they are very important. Dr. Copeman, to use his own words, does not "attempt to explain the *modus operandi* of the treatment suggested;" and I desire to offer what I consider to be the true explanation.

In the year 1871, I read a paper before the Obstetrical Society (see *Transactions*, vol. xiii) on the subject of this vomiting in pregnancy. I there enunciated the theory, which I supported by facts and observations, that obstinate vomiting, and indeed ordinary vomiting, in pregnancy are due to a flexed condition of the uterus, the compression of the tissues of the uterus at the seat of the flexion constituting the irritation which gives rise to the vomiting.

Dr. Copeman's clinical contribution of three cases has a strong and direct bearing on the above question, and the cases offer to my mind strong confirmation of the truth of my original statement. The three cases occurred respectively at six months, two months, and eight months, and in each case the vomiting at once ceased on dilatation of the os with the finger. In the second case, Dr. Copeman says the uterus was "anteverted." He gives no account of its condition in the other two cases, so far as flexion or version is concerned. Now, it is my belief that all three cases were alike; that there was, or had been, acute flexion in each case, and that the dilatation operation of Dr. Copeman effected good and removed the vomiting by reason of its also relieving the cramped.confined condition of the cervix

On the supposition (which I make as regards two, but which is a fact in one of the cases, according to Dr. Copeman) that there was flexion in all three, the os must have been far back, and, in order to dilate it, it must have been pulled forwards. The dilatation would and must necessarily imply a righting of the os and lower segment of the uterus, and a consequent unbending of the organ; for I need hardly remark that to draw the os forwards would of necessity tend to tilt the fundus upwards. The uterus, as a whole, is on a pivot; direct pressure on or dragging on one extremity of it will affect the other extremity, and thus the process of dilatation, involving as it does the dragging of the os forwards, would practically aid in the placing of the whole organ in its proper position.

It is customary with obstetric authors to speak of the gravid

uterus as being naturally anteverted in the first part of pregnancy. This is a statement which requires important qualification. There are degrees of anteversion. It is one thing for the body of the uterus to be rather easily felt by the touch through the anterior wall of the vagina, as it undoubtedly is in ordinary cases, but it is another for the roof of the vagina to be actually depressed by the abnormal descent of the enlarged body of the uterus when it is anteflexed. In the latter case, the os is always further back than usual, and, in marked cases, the body of the uterus is for the time completely jammed in the pelvis. It is under these latter circumstances that obstinate vomiting most commonly occurs.

But it may be said, How do you explain the cases in which the vomiting persists as late as the eighth month, which was the fact in Dr. Copeman's third case? The answer is, that, when there has been an acute flexion in the early part of the pregnancy, as the uterus enlarges (if abortion do not occur), the flexion is in most cases abolished, and the effect of this is, that the sickness generally disappears under such circumstances. But the tissues of the uterus at the seat of the flexion are sometimes left in a diseased state, being stiffened and unduly resistent, and thus the irritation is kept up.

Dr. Copeman's treatment would undoubtedly tend to remove this stiffening and constraint. He himself says, in his paper, "I wondered whether the relief to the vomiting so urgent and threatening to her life could have been effected by my having dilated the os uteri, and thus removed any undue tension which might be producing sympathetic irritation." Undoubtedly, there was undue tension; this tension was, I consider, situated at or near the internal os uteri, which is the situation of flexion under ordinary circumstances; and Dr. Copeman's procedure acted precisely in the way he conjectures. I submit to his careful judgment, and that of others accustomed to consider such problems, whether my explanation of the utility of his process is not the sound one.

I have been accustomed to treat cases of obstinate sickness in pregnancy by elevating the body of the uterus, and I have found that the same immediate good result follows as was observed in Dr. Copeman's cases, viz., the cessation of the sickness; but I am quite prepared to hear that traction of the os uteri forwards will produce a like effect. Both procedures have the same result; the liberation of the tissues of the uterus at the internal os uteri from their cramped compressed condition.

I have had occasion, several times, in the first months of pregnancy, to elevate the body of the uterus, with the view of arresting vomiting. In some instances, the result has been so satisfactory that I intend to investigate the matter more thoroughly. In order to elevate the womb, the block tin ring pessary may be used and pushed well up into the parts, employ-

ing a rather large instrument, so as to be certain that the organ will be kept well elevated. I have not found that distention of the vaginal walls occasions any grounds for alarm, but on the contrary, it has appeared that if any benefit is to be derived from this plan of treatment, the womb must be kept considerably elevated by a rather tightly fitting pessary. When unable to procure a block tin ring pessary, I have employed the ordinary pessary for retroversion (Hodge's); and twice in cases of anteversion, I have turned the pessary around, placing the vertical bar in front of the uterus. Not only did this proceeding cause no annoyance to the patients, but on the contrary, the relief was so great that I felt encouraged to reverse the position of the pessary used for retroversion, in three cases of anteversion, outside of pregnancy. While remarking that this form of instrument requires to be modified to render it applicable to the treatment of anteversion, still the result has shown me, that the retroversion pessary may at times be advantageously used for anteversion. In two of the cases I was not troubled by sensitiveness either of the bladder or of the anterior vaginal wall; in the third, however, I had to withdraw the pessary. It would be difficult to describe the manner in which the pessary should be modified, when intended for use in anteversion, opportunity not having as yet presented to enable this point to be determined. The subject deserves careful consideration, and the experience derived from the four cases alluded to shows that the presence of the bladder does not always interfere with the adaptation of an instrument intended for use in retroversion. In the number of the *Obstetrical Journal* for April, in an article on the use of pessaries in the early months of pregnancy, by Dr. Albert H. Smith, of Philadelphia, attention is called to the fact, alluded to previously, that "when patients who have previously had children have become pregnant while wearing pessaries, they have observed * * * the fact, that the symptomatic *nausea has been greatly diminished.*" * * *

THE TREATMENT OF UTERINE DISPLACEMENTS, BY POSITION AND PNEUMATIC PRESSURE.

Under the above title, the *Atlanta Medical and Surgical Journal*, for June, publishes an article by Prof. H. F. Campbell, M.D.,

of Augusta, which is, in substance, contained in the following extracts:

Every sexual abnormality may present two momentous desiderata: first, the health of the patient; secondly, the relief of sterility. Both these ends, it is well known, are materially compromised by uterine displacements. Scarcely any uterine affection can escape complication with some form or degree of malposition; and on the other hand, no malpositition can persistently continue without at least a *liability* to both structural and functional change.

As the title of the paper would indicate, position and what he styles "pneumatic pressure," has the fullest consideration in Dr. Campbell's report. He urges the importance and indispensable necessity of knee and breast posture, in the treatment of nearly all those conditions which can properly be called uterine displacements.

In tracing the history of knee and breast posture, he finds that it is by no means a new or recent device—finding mention of it as applied, for one object or another, since the year 1701. Like many of the inventions of gynæcology—as the speculum, the sponge-tent, and uterine sound—"genu-pectoral posture" has been the subject, time after time, of discovery, oblivion, rediscovery, neglect and revival. The most recent revival of its application was that of Dr. Marion Sims, in 1852.

Dr. Sims, though he understood apparently its capabilities, did not appear to value it properly *as a means of replacing the dislocated uterus.* As in retroversion, the displacement for which, above all others, he places the patient in "semi-prone position," abandoning gravity and pneumatic pressure, and using sponge probangs and a complicated process to *imperfectly* restore the displaced organ.

Dr Campbell claims that, since his earliest days of practice, he has used this postural treatment, applying it to every displacement possible, as its value became understood by him. Using it as a means of diagnosis as well as of treatment, he insists that no investigation of any form of uterine displacement can be thorough or conclusive without "genu-pectoral" posture and "pneumatic pressure," by which we judge regarding the mobility, the extent of motion and the direction of motion possible to the displaced organ. He insists that no pessary should ever be applied, or its application attempted, *until after the dislocated organ has been reduced by knee and breast posture, assisted by pneumatic pressure.* The ordinary introduction of the pessary generally involves a *painful, pushing up* of the prolapsed or retroverted womb *upon the pessary;* whereas the womb *should first be replaced* to its fullest extent, in knee and breast posture, and then the pessary *laid upon* the posterior vaginal *cul-de-sac*, while the woman is in the inverted position. As the patient rises to the *erect* kneeling posture, the womb settles down upon the posterior

bar, or segment of the pessary, and thus she *begins* its use with comfort and freedom from pain. The particular rules, given by Dr. Hodge, for the application of his open lever pessary are diametrically reversed by Dr. Campbell, so as to adapt them to his far superior application of this valuable instrument in the "genu-pectoral position," after full reduction by "pneumatic pressure."

In his discussion of the rationale of the "genu-pectoral position," he demonstrated clearly to all present that like a pneumatic pump (which he actually used in the demonstration,) the descended womb, resting against the closed vulva, would not return to its position, even when dragged upon by its own weight, together with all the weight of the abdominal viscera, unless, as he expressed it, "*the suction is broken*," by the separation of the labia, to introduce air into the vagina, any more than was the piston of the reversed pneumatic syringe dragged down by the heavy book attached to the handle, until the thumb was removed from the opening above the plunger. He holds that in reduction of retroversions, except, in cases of adhesion or impaction, *nothing is necessary but "genu-pectoral pneumatic pressure."* and further, that Simpson's repositor, Bond's repositor, Sims' probangs, and the colpeurynter are useless instruments, except in extraordinary cases.

Dr. Campbell stated that for years he had found difficulty in securing to patients the full advantages of knee and breast posture, from the fact that the womb would not replace itself, unless air was allowed to enter the vagina. His advice of "nightly replacement," only practicable by the patient herself, but in his mind a very great desideratum, constantly failed to afford relief on this account; also in the case of patients in the condition of virginity, often the subjects of displacements, but averse to any manipulative treatment, simply "genu-pectoral" posture would not relieve. He therefore, after many progressive attempts, perfected a simple instrument for the purpose of "pneumatic reduction of the dislocated uterus."

His "*Pneumatic Self-Repositor*" is the idea of an "air-way" reduced to the last degree of economy, simplicity and convenience. They are so cheap that they can be ordered from the manufacturer by the gross at a price little above the cost of ounce vials, and given if desired without charge to each patient. It consists essentially of a glass tube of various forms, from two and one-half to three inches long, slightly curved near the end and bulbous, to admit of easy introduction. He presented specimens of various forms and sizes of this instrument. Some, very attenuated in calibre, to use in virgins, to pass above the hymen, which is generally more or less lunated, without injury to that important membrane. The application is very simple. The patient assumes the "genu-pectoral position," and while thus placed, or before rising, with or without lubrication, she introduces the tube, only for a moment. The air rushes in, the suction is broken, and immediately, whatever may be the dis-

placement, unless there is adhesion or impaction, "self-replacement" is completely and instantly accomplished She then lies quietly down for the night, and a night's rest, with unstretched uterine ligaments, and unimpeded uterine circulation, if often and regularly repeated, will, at least, go far in favoring a restoration to a permanently normal position of the organ.

QUININE IN UTERINE CONCEPTION.

Under this heading, the *Atlanta Medical and Surgical Journal* contains a contribution, by Dr. Wetherly, of Montgomery, which will be read with attention by physicians practising in malarial districts.

I have been prescribing quinine for the last twenty-five years, and I am satisfied that it will much oftener arrest uterine action than it will produce it. I do not mean that it will control active labor pains, but in those irregular or neuralgic pains which are frequently produced by malarial poisoning, a full dose, or several full doses, will almost invariably arrest them, just as morphine will do under the same circumstances. The woman rests, and also the womb; and if it is about her full time, when the pains return, she will probably be delivered without pain and immediately. Reasoning from wrong premises, it is announced that quinine or morphine has acted as an ecbolic, when, in fact, the action has been the very opposite.

A number of experiments and cases are then related, all of which contradict the assertion so frequently made in late years, that quinine acts "upon the pregnant uterus in such a way as to force it to expel its contents; and that, consequently, it should not be given to females who are pregnant, or if given at all, it should be given with great caution, even if the patient be suffering from malarial fever." Dr. Wetherly concludes by expressing the opinion that "fevers of any kind are apt to excite uterine action; that it is especially the case with malarial fevers; and if they are not promptly relieved the uterus will expel its contents, whether quinine has been given or not. The uterine action is, however, never due to the quinine, but is the effect of the disturbed circulation and the malarial poison itself."

ERGOT IN THE TREATMENT OF INCREASED MAMMARY SECRETION AND INFLAMMATION OF THE BREAST.

During an epidemic of raphania in the Russian department of

Simbirsk, Dr. S. made the interesting observation that a diminution, or even an entire cessation, of the secretion of milk in nursing women, was not of rare occurrence when symptoms of ergotism appeared.

He observed a similar phenomenon among cows fed with meal containing ergot, or allowed access to straw in the ears of which grains remained which had undergone similar changes. Since an accumulation of milk in the glandular parts of the breast is regarded as the chief cause of mastitis, he administered ergot in many cases in which this process was in an early stage.

In two cases of multiparæ, who at each confinement had suffered with mastitis, going on to suppuration, secale cornutum was administered as soon as any enlargement of the gland, due to an accumulation of milk, was noticed; and its administration was followed by the happiest results. Secale cornutum, in conjunction with quinine (aa gr. v. t. d.), was also used in cases of so-called milk fever. The same treatment which was used successfully in mammary trouble during the puerperal state was attended with equally good results in tumefaction of the gland, with febrile reaction, in women at a later period of lactation. Secale cornutum was also given at the time of weaning the children in cases in which a speedy cessation of the secretion was desired. In such cases it was given up to the amount of one drachm for a week, with no unpleasant results.—W. A., *Philadelphia Medical Times.*

In the last number of the *American Journal of Obstetrics*, there is published a paper by E. Noeggerath, M.D., entitled "The Vesico vaginal and Vesico-rectal Touch, and a New Method of Examining the Uterus and Appendages." Owing to the interesting nature of this communication, the following lengthy extracts are made:

The last steps made towards extending the sphere of physical examination relating to the organs hidden inside the pelvic cavity and beyond the roof of the vagina, were: the introduction of the uterine sound, the examination through the rectum, the use of sponge-tents, the introduction of a catheter into the bladder, while one finger explored through the rectum. Although a very large amount of pathological conditions is thus brought within the limits of physical diagnosis and within the scope of treatment, there remains a great deal to be accomplished, especially with regard to our means of diagnosis of alterations occurring in the uterine appendages. But even when exploring the uterus itself, the size of all its diameters, the density of its tissue, its true shape, the exact seat of painful affections, the extent to which a benign or a malignant deposit in the neck

involves the parts above, escapes our appreciation in the ordinary run of cases, and this is accounted for partly by the thickness of the abdominal walls, partly by the rigidity permanent or excited in consequence of the examination itself, of the lower section of the rectus muscles, and finally by the position and manner of suspension of the uterus in the pelvic cavity. In most instances, where we are called upon to examine a woman suffering from a uterine or a peri-uterine affection, we find the uterus slightly anteverted or anteflected, and in attempting to move it forwards towards the hand resting on the abdominal walls, by pressing upon the infravaginal portion, we only succeed in elevating it, leaving its axis in the same relation to that of the pelvis in which it was before the taxis, and although we are thus enabled very often to grasp the fundus and part of the upper section of the uterus adjacent to it, most of the anterior wall remains distant from the fingers examining outside. Alterations in or near the broad ligaments and in the tissues of the ovaries, if not of considerable size and density, are beyond our means of appreciation. If a method were at our disposal which permitted to touch the uterus and its surroundings without the interposition of the abdominal walls, a host of alterations would be cleared up during life which were out of our reach heretofore. By a lucky accident I have found, and now propose to your consideration and trial, a method from which I claim that it accomplishes the object in question. It consists in the palpation of the uterus and its lateral appendages by the finger introduced through the urethra into the bladder. This proceeding, though apparently very simple, has, as far as I am aware, hitherto escaped the notice of gynæcologists. I have looked over all the more recent text-books of gynæcology and gynæcological operations, but I was unable to find even an allusion to it in any shape whatever. When I had succeeded for the first time to complete the examination in the manner I am going to describe to you, I became greatly impressed with the new revelations which were imparted to the sense of touch. I had the sensation that I could feel the uterus as distinctly as we do it during an autopsy. The first case which offered an opportunity for the vesico-vaginal touch was the following:

Mrs. L——r, 53 years old, sterile, menstruated for the last time three years ago. She called to consult me in the spring of 1873, about a very troublesome affection of the bladder. I had treated her before for varicose veins in both the lower limbs. I learned from her now, that for several years she had to pass water frequently during the day, and that for the last six months the evil had much increased; she was forced to get up several times during the night.

On making a digital examination, I detected a tumor of the size of a small walnut close to the left side of the fundus uteri. I could grasp it between two fingers, one in the vagina, and one above the symphysis pubis, and when doing so, the patient re-

marked that this manœuvre gave her a desire to urinate. Thinking that I had to deal with a tumor in the bladder, I began to dilate the urethra with steel bougies of gradually increasing calibre. It was done in my office, and gave very little pain, so that I was soon enabled to introduce, first the fifth, and immediately afterwards the second finger of my left hand into the bladder. I now detected a small tumor, somewhat flattened from above downwards, protruding into the cavity of the bladder, to the left of its apex. It appeared to be attached to it with a base about one-third smaller than its largest circumference.

Not being thoroughly satisfied with the results of this first examination, I requested Mrs. L. to call again in a fortnight. On this second occasion the patient expressed her satisfaction about the result of the foregoing manipulation, because she had now been enabled to retain her urine much longer, and could rest through the greater part of the night. On examining the urethra I found that it had not contracted to its former size, but I could without any further preparation introduce the fifth, and immediately after, the second finger of the right hand. I now recognized that the membrane lining the tumor felt exactly like the mucous membrane of the bladder itself. I could easily move it over its body. I began at once to displace the uterus by pressing upon the vaginal neck, and with it I felt the tumor in the bladder move from side to side.

The patient called again and again, in intervals of from two to six weeks, to have the benefit of urethral dilatation. I repeatedly introduced the sound into the uterus, and moved it far into the sides of the pelvic cavity, the tumor following all the movements. On one occasion I pulled it downwards, and I was now able to so far displace the tumor from the bladder that I touched only a very small section of its surface. I could on several occasions feel a pedicle connecting the tumor with the left horn of the uterus, and I came at last to the conclusion that I had to deal with a diseased and misplaced left ovary. The fact that it protruded far enough into the bladder to convey the impression of an intravesical tumor is no longer surprising to me, and I will have occasion to mention a similar observation in the course of this paper.

After giving the history of several other patients examined according to this "new method," whose advantages are clearly shown, the article continues:

SPHERE OF USEFULNESS AND EVIL CONSEQUENCES OF THE OPERATION.

I have examined now thirteen cases in this manner, partly for affections of the bladder itself, partly for diseases of the uterus

and appendages, and lastly, in a few instances, with a view of testing the efficacy, the advantages and disadvantages of the proceeding.

I have only succeeded lately in obtaining all that I desired to gain from this investigation, because it requires a certain experience in the management of the parts involved in order to extend the sphere of the touch. I have thus become enabled to feel the outside of the whole of the uterus itself, one or both of the Fallopian tubes, either in part or to their full length, and in two instances I could feel the ovary.

The reaction following the operation, consisting either of retention of urine for a short while, followed by frequent inclination to pass water, with a sensation of burning about the vulva, or more or less severe abdominal pain, amounting in one instance to a renewed attack of perimetritis—this severe reaction took place in a more or less marked form in six cases. In one of these the examination was borne without any inconvenience the first and second time, while the third examination produced a pretty severe catarrh of the bladder. In all of these, rapid dilatation under chloroform was performed; in five of them there existed signs of chronic perimetritis; in the seven other cases there was observed very little irritation. In six of these, rapid dilatation was restored to; in one the slow method was employed.

In none of the thirteen a permanent painfulness of the parts involved, or incontinence, resulted from the examination; in a great many of these the orifice remained large enough to introduce the forefinger without previous dilatation.

Hemorrhage occurs in all cases, but ceases of itself. In one instance where I examined a patient for the second time, when she was near her menstrual period, she bled profusely, an accident which did not occur on the first examination.

Indications.—The vesico-vaginal and vesico-rectal touch is to be confined in its application to certain morbid conditions of the womb. It is not to be considered a supplement to the ordinary gynæcological examination.

Its sphere of application applies, however, to all those cases where an ordinary examination, performed by an experienced and skilful specialist, has not succeeded in giving full satisfaction, on account of thickness or rigidity of the abdominal and vaginal walls.

It is indicated:

1st. For the diagnosis of obscure tumors in the tissue or in the neighborhood of the womb. I need hardly recall to your mind or specify the instances of small tumors located within the pelvis, the nature of which was never cleared up by the ordinary method. I have no doubt that in cases of this kind the new *modus examinandi* will reap its most welcome harvest.

2d. To complete the diagnosis of inversion of the womb.

From my impressions as to the distinctness of touch, I do not

hesitate in stating that it will remove all doubts under the most difficult circumstances.

3d. In cases of suspected congenital absence or malformations of the uterus we will be enabled to make both fingers meet, introduced into the bladder and rectum, with the interposition only of the thin membranes of the bladder and rectum; in cases where the uterus is absent, and where there exists an arrest of development, its shape will be recognized distinctly.

4th. For the early diagnosis of pregnancy. Under these circumstances, this mode of examination is destined to supplant the sound, the use of which is not permitted under the circumstances. By measuring beforehand both the forefingers of the right and the left hand, we will be enabled to get at an accurate measurement of the uterus itself. If we take into consideration its volume and the nature of its tissues, of which we may gain a perfect knowledge by the vesico-rectal touch, we will be enabled to exclude or to recognize an altered physiological development of this organ. In cases of extra-uterine gestation we will not only feel the peri-uterine tumor, but also the enlarged and softened uterus itself.

The 5th indication for the employment of the vesical touch I will call Huguier-Pippingsköld's indication. Both of these surgeons have succeeded in guarding the bladder from injury, in removing part of the supra-vaginal neck, by introducing one finger into the bladder while the operation was performed. Prof. Pippingsköld of Helsingfors, has published four cases in "Beiträge zur Geburtshülfe und Gynäkologie," vol. iii., sec. 2, Berlin, 1874, in which he employed this proceeding. In this he followed the example of Huguier, who had applied the same manœuvre in two cases.

The 6th indication comprises the diagnosis of the extent of heteroplastic tumors of the neck.

The principal question in ventilating the chances of success in an operation for cancer, cancroid, or sarcoma of the neck, centres in the decision how far the supra-vaginal part of the neck has been involved. The new method of exploration will dissolve all doubts in this matter.

DESCRIPTION OF OPERATION.

Preparation of the Patient.—It is of importance to empty out the bowels, previous to the examination, in order not to have any encumbrance to hinder the finger, placed in the rectum, to receive as complete an impression only from the parts, to which its sense of touch is to be applied, as can be possibly done. Before dilating the urethra, it is of the utmost importance to thoroughly wash out the vagina with carbolic acid and water. I have seen that utero-vaginal secretion was carried into the urethra by the bougies employed for dilatation. The fingers to be used in the examination through the bladder, vagina, or

rectum must be anointed by a substance which contains one or the other of the disinfecting agents. All these precautions are necessary to counteract the effect of vaginal mucus on the urine, as a cause of alkaline fermentation.

After sufficient dilatation the patient must be placed in the so-called sacro-coccygeal position, the thighs being well flexed on the abdomen. This is necessary for the reason that the urethra runs parallel to the posterior surface of the symphysis pubis. If, therefore, we place the patient in the position indicated, a line drawn through the urethra and prolonged will touch the upper part of the womb. After sufficient dilatation, the forefinger of the left hand is now introduced into the bladder, previously emptied, while that of the right hand is placed into the vagina or the rectum, or alternately into the one or the other. It will then strike, when the uterus is in normal position, a point half-way between the fundus and the inner os.

In cases where the parts immediately above the neck, or morbid conditions of the regions in this neighborhood, are to be explored, it is not necessary to dislocate the uterus.

If, however, we attempt to explore the upper section of the uterus, it must be pulled down by means of a double hook, the points of which are turned outwards, introduced into the cervical canal, and it is perfectly safe to dislocate the uterus downwards about an inch and a half. When this is done, with one finger in the bladder and one in the rectum, we are enabled to thoroughly explore the whole of the uterus, from the fundus down to the external orifice.

In cases where it is desirable to push the examination beyond the uterus toward its appendages, the broad ligaments, Fallopian tubes, or even the ovaries, an instrument must be employed, by which we are enabled not only to pull down the uterus, but to turn its body either towards the right or the left side of the pelvis. For this purpose I have added to my double hook the upper 2½ inches of the ordinary uterine sound. By its means we can not only explore the sides of the uterus, its posterior surface, but even its lateral appendages to a certain extent. The introduction of the sound has the further advantage, that we can crowd the uterine tissue against it, and thus judge of its thickness and density. If the posterior surface of the uterus or of the broad ligaments should become special objects of investigation, it might be well to substitute the uterine redresseur, usually applied for the replacement of a retroversion.

After the examination has been completed, the bladder should be washed out with a weak solution of carbolic acid.

Methods of dilating the Urethra.—We may divide these methods into two different classes, the rapid and the slow process.

First, dilatation in one session. This may be effected in three different manners.

The quickest way of proceeding consists in introducing a Holt's stricture dilator and push the largest steel bougie at once be-

tween the two blades of the instrument, and to follow up the dilatation thus obtained, by using Busch's dilator sufficiently to permit the fifth finger to enter the urethra, after which the second passes in without difficulty.

The next, somewhat more protracted method, consists in using steel sounds of gradually increasing calibre, the last of which equals in size the forefinger.

Lastly, rapid dilatation of the urethra may be effected by Molesworth's hollow india rubber bougies, to be expanded by forcing water into them from a syringe.

For the slow process we have two methods.

The first consists in the use of graduated bougies, the same as employed in rapid dilatation. They may be employed two, three or four at a session, in intervals of two, three or four days, according to circumstances.

The second method is that proposed by Prof. S. Pippingsköld (Helsingsfors, Finnland) preliminary to the amputation of the cervical portion of the uterus. He introduces three small, smooth laminaria bougies into the urethra and leaves them in place all night.

Among these several methods we have to choose in a given case.

From the as yet limited experience I have received, the impression that the reaction following dilatation of the urethra and examination of the bladder, depends not so much on the manner or rapidity of dilatation, but rather on other circumstances, such as state of general health, power of resistance of the patient, and elasticity and vulnerability of the tissues constituting urethra and bladder. In cases where the individual is very sensitive, or where the dilatation precedes an operation on the neck of the womb, it would certainly be better to perform it in one session and under chloroform. I have seen, however, two instances where rapid dilatation could be performed to its utmost extent in one session without the use of an anæsthetic.

In cases where the examination permits ample time for preparation, and where the patient is not very sensitive, where the introduction of the smallest dilator is not followed by severe reaction, it would be better to resort to slow and gradual dilatation.

If the urethra is very sensitive, where there exist symptoms of perimetritis, and where the history reveals the existence of urethral or vesical catarrh at a former time, more or less severe reaction is pretty sure to follow, no matter whether dilatation be performed slowly or rapidly.

The reports of four cases, treated by Prof. Pippingsköld's method, are so favorable that I recommend this method for trial. We must, however, bear in mind that a proceeding which is borne very well by patients of that robust, northern physique, as we find them in Finnland, is very likely to lead to very dif-

ferent results among our weakly, irritable New York female population.

In conclusion, I have to remark that the novelty of the proceeding presented to you is not in the dilatation of the urethra for the purpose of entering into the female bladder, but in its application for examining the female genital organs.

HYDRATE OF CHLORAL IN CONVULSIONS.

So much has been written concerning the application and the action of chloral, that it may be deemed superfluous to express any further appreciation of this agent. Its effects were, however, so remarkable, in the case of my child, for whom chloral was prescribed by Dr. S. M. Bemiss, that it is believed the following history may prove valuable. On the 19th of August last, my son, a healthy average sized infant, was born. With the exception that the child had an unusually large number of the ordinary dark colored passages, no peculiarity was observed, until thirty-six hours after birth, when, with some straining, a stool was had containing mucus streaked with blood. As some pain was noticed, measures of relief were promptly adopted, but a restless night followed, during which another operation, of the same character as the last, was noticed. The next morning, at about 7 o'clock, without any further warning, the child had a severe convulsion. Dr. Bemiss, who had had the kindness to attend the case, was immediately sent for, and treatment was begun without loss of time. Not wishing to enter into unnecessary details, I will merely state, that although everything was done which skill and experience could suggest, yet the condition of things rapidly grew worse, and the convulsions became more frequent and violent. By 11 o'clock seventeen distinct convulsions had been counted, the child was black from head to foot, the surface was cold, and after the seventeenth convulsion the pulse and respiration were completely suspended. It was only after some moments of suspense that breathing returned. In this emergency, Dr. Bemiss recommended using chloral by enema, the condition of the throat being such as to preclude swallowing. An injection containing 1½ grains of chloral was administered. It seemed as though the action of the remedy was immediate, the convulsive motions ceasing almost instantaneously, the child falling into a deep and tranquil sleep of two hours' duration,

during which the deep black color of the integument gradually disappeared, being replaced everywhere, except on the forehead, by the natural appearance, with patches of a beautiful pink hue scattered over various regions. The heat of the surface became natural, and the rhythm of pulsation and respiration was normal. At half-past one, o'clock two more distinct convulsions occurred in rapid succession. They were much less severe than those mentioned above. Another injection of 1¼ grs. chloral was again followed by a deep slumber, during which his appearance and condition were the same as already described. At about five o'clock in the afternoon, another convulsion (the least severe of all up to this time) necessitated another injection with chloral. The child then slept soundly until eleven o'clock at night, when the last convulsion took place. Chloral was again given, and the crisis came to an end, sleep then ensuing and lasting until morning, when a little nourishment was introduced into his mouth by means of a spoon, and readily swallowed. Only five grains of chloral were administered in all, but the deep sleep alluded to lasted over twenty-four hours after the last injection had been administered. The action of chloral upon the circulation was clearly shown in this case, by the rapid substitution of a very handsome pink blush to the deep black hue which became every instant more and more marked, until the first injection was absorbed. The effects of the remedy upon the nervous system were so immediately remarkable as to appear a sufficient warrant for the publication of this recital.

OBSTETRIC EXCERPTA.

BY JOSEPH HOLT, M.D.

VAGINISMUS.

Spasm and pain of the sphincter muscle of the vagina, on the application of a stimulus, was first described by Dr. Burns, of Glasgow. He regarded it as due to a hyperæsthesia of the pudic nerve, and he often divided this nerve for its relief. In this treatment the late Sir James Simpson concurred, for he believed that "the best treatment for such cases is division of the affected nerve." But in the manner of dividing it, the two operators differed. This treatment was, at best, only palliative; for even after section of the offending nerve, the pain returned in some other part of its course, and the spasm continued. Courty treated this affection by forcible stretching with the finger and

thumb, under chloroform. In this he was followed by Dr. Tilt. Scanzoni opposes the use of the knife, and "has always succeeded in bringing relief by first subduing all inflammatory complications, and next by effecting gradual dilation by means of graduated glass specula, worn for short intervals at a time." Dr. Barnes has cured many cases by methods similar to those of Scanzoni, but he has "met with cases where the knife or scissors gave not only the quickest and most efficient relief, but also at the least cost of pain and other distress."

In the year 1857, Dr. Marion Sims had under observation, for the first time in his practice, a typical example of the disease, which he fully and graphically described. In two or three years after this, other cases of vaginismus came under his observation and treatment, and he devised an operation which happily is a certain and abiding cure for the malady. The following particulars of a case of vaginismus, which recently came under my notice, is, I think, a good example of the value of Dr. Marion Sims' mode of cure. Mrs. B., aged 25, residing a few miles from Gloucester, a fine, strong, healthy, young woman, consulted her medical man for some uterine discomfort. After digital examination, he told her that pregnancy existed, and intimated that her labor would be one of considerable difficulty, and would require both chloroform and instruments. Discrediting altogether his opinion that she was pregnant, she at once determined to come to Derby, her native place. She fell under my care. On July 14th, 1872, I examined and found her almost at the full time of pregnancy. I found also that there existed vaginismus to a severe degree. My examination gave her great torture, and it was with much difficulty that the index-finger of the right hand could be introduced into the vagina. On assuring my patient that she was with child, and would be delivered in not many days from that time, she was still sceptical, and pertinently asked how such a thing could be possible, since marital intercourse had never been consummated. This, I knew after my examination, and the difficulty I encountered, could not be otherwise; nevertheless, in five days thereafter, I delivered her with forceps of a full grown healthy child. It was after a rapid and excellent recovery from her confinement that I suggested to my patient the importance of having her ailment cured; and I described to her the nature of the operation and the subsequent treatment. She at once consented to undergo the operation; and accordingly, on November 5th, in conjunction with three medical friends, having placed my patient in the position for lithotomy, and fully under the influence of chloroform, I introduced a Sims' speculum into the vagina, and removed with a scalpel a strip of the width of from three quarters of an inch to an inch. The speculum, during the advance of the knife, was made to revolve round the vagina. Thus, at the moment of laying bare the fourchette, the speculum had advanced as far as the arch of the os pubis, and, when the knife had followed it to that position, the speculum had arrived

again at the fourchette, from which part it was throwing a flood of light upon the knife. Thus an entire ring of mucous membrane was removed from the vagina, an operation which was greatly facilitated by the above-mentioned management of the speculum. The next point of the operation was section of the sphincter vaginæ. The scalpel was introduced fully two inches into the cavity of the vagina, at a point about one inch on the right of the mesial line, as one sits facing the pelvis. It was carried along, making in its course a deep incision, and brought out at the fourchette. A corresponding incision was then made on the opposite side of the mesial line, and brought out the same point as the first; a junction having been effected between the two incisions about an inch above their termination. The two incisions, thus united, had the T-shaped character recommended by Dr. Marion Sims. The after treatment consisted of the insertion and retention, during several hours a day, of a metallic speculum. This was inserted not long after the operation, and had a desirable effect in controlling the hæmorrhage. This patient made an excellent recovery from the operation. Twelve months ago I delivered her of her second child at full term, and she is now two months gone with her third. I have reason to believe that conjugal relation exists without any inconvenience. —F. W. Wright, Derby.—*British Medical Journal.*

SINCLAIR ON MANUAL DILATATION OF THE OS UTERI.

Dr. A. D. Sinclair *(Boston Medical and Surgical Journal)* fears that, owing to the variety and perfection of the mechanical contrivances now used for dilating the os uteri, the use of the hand for that purpose is not so much kept in mind as it ought to be. Although sponge tents, Barnes' bags, etc., are most valuable instruments for inducing premature labor, yet in many cases of emergency, such as the occurrence of convulsions, or of uterine hæmorrhage, when prompt delivery is necessary and the physician is obliged to remain at his post, the use of the hand offers certain advantages. It is always available; there is no delay in searching for or procuring the necessary apparatus; wherever a sponge-tent or india rubber bag can be inserted, a finger can be introduced. The operator is kept informed as to the precise condition of the parts, and is able to regulate exactly the amount of force necessary to effect dilatation. The operation is exceedingly simple; one finger is first gradually insinuated through the os; then a second by its side, and so on, till at last all five, in a wedge-shaped mass, are inserted into the cervix. Soon the whole hand can be passed into the cavity, but it should be kept opposite the cervix until the os is fully dilated; if this point be not attended to, considerable difficulty may be met with in the subsequent operation of delivery after turning. Dr. Sinclair re-

lates the particulars of several cases in which he adopted this plan, on account of convulsions, placenta prævia, alarming accidental hæmorrhage, etc. One of the patients had only arrived at the fifth month of pregnancy; the others at the seventh or eighth. The time required for the operation may not, even in a primapara, exceed an hour; sometimes the proceeding is completed in fifteen or twenty minutes; but occasionally three or four hours of patient effort are necessary. The use of chloroform or of ether, of course, greatly facili ates the process.—J. W. Langmore, M.D.—*London Medical Record.*

THE DIAGNOSIS AND TREATMENT OF PLACENTA PREVIA.

Dr. Charpentier, in the *Archives de Tocologie*, gives some practical directions on this subject:

If attention be paid to the following points, the diagnosis can be made without much difficulty. First, the time at which the hemorrhage first makes its appearance, viz., from the seventh to the eighth month, in some rare cases as early as the sixth month; the fact that it comes on suddenly, without any known cause, and stops as suddenly; and that it reappears at uncertain intervals, but in increasing quantities, up to the time of labor. Second, the absence of ballottement, the thick mass of the placenta being interposed between the finger and the fœtal presentation.

The hemorrhage, in cases of placenta previa, is always external; it takes place during the uterine diastole, but is expelled during the sys ole, and if the latter were continuous it could hardly take place at all.

Artificial delivery is a most dangerous method, only suited to most urgent cases The rupture of the membranes is very good treatment, provided the os is partially dilated. It is hard to do when the presentation is complete. The use of ergot is a powerful auxiliary, but it increases greatly the danger to the child, and is contra-indicated in contraction of the pelvis, organic disease of the uterus, and mal-presentation.

The author looks upon the plug as the treatment *par excellence*. It requires to be applied skillfully to be of any great use. Charpie or tow are the best materials with which to plug, and if properly applied, the author considers such a plug superior to any description of India-rubber bag which can be introduced into the uterus and inflated. The great point to attend to when plugging is to introduce enough of the charpie or tow, as much as a pound and a half of the former material being sometimes necessary. The bladder and rectum should both be emptied before we proceed to plug. Some practitioners dip the first pledget in a solution of perchloride of iron. This is not necessary.

The charpie should be rolled into small balls, the first twenty

or thirty of which should have a piece of thread attached. Before being introduced they should be well covered with cerate. This renders a speculum unnecessary.

The author lays great stress on packing tightly the anterior and posterior cul de sac, but especially the latter. The success of the operation depends to a great extent on this being well done. The vagina itself should be filled with the small pledgets, until they appear externally. Then you apply a handful or more of dry charpie, and over that three or four compresses, the whole being fixed by a T bandage. If this plug be well applied there can be no hemorrhage. If the charpie at the vulva become moist it is a proof that the plug is badly applied, and it should be removed at once and reapplied. To be of much service the plug should be left in from 12 to 24 hours.—*Medical and Surgical Journal.*

SULPHATE OF QUINIA AS AN ABORTIFACIENT AND OXYTOCIC.

Dr. Chiari has given quinia to forty patients in the Royal Catherine Institution of Milan, and has come to the following conclusions as to its effects in such cases:

(1) The disulphate of quinia has no action as an abortifacient.

(2) Quinia cannot be trusted, either alone or in conjunction with mechanical means, for the induction of premature labor.

(3) In cases of slow, suspended, or irregular labor, it is not well to trust to the action of quinia.

(4) The assertion of Ponti, of Parma, that ergot must give way to quinia, is chimerical, at least as regards midwifery.

(5) When quinia is indicated by the presence of general morbid conditions during pregnancy, it should be given not only as a remedy for the disease, but also as the best means of preventing abortion or premature labor.

(6) Quinia has no power whatever in preventing or modifying morbid conditions of the puerperal state, whether of infectious or sporadic origin.—*Brit. and Foreign Med. Chir. Review*, October, 1874, from *Gazetta della Cliniche*, No. 29, 1873.

HYDRATE OF CHLORAL IN PUERPERAL ECLAMPSIA.

M. Fanny, in a thesis published in 1874 (*Revue des Sciences de Médicales*, July), records several cases of puerperal eclampsia treated by chloral. The patients were admitted into the maternity wards of the Charité and Cochin Hospitals. Hydrate of chloral was administered both internally by hypodermic injection, and was introduced into the stomach and rectum. In one case a subcutaneous injection of hydrate of chloral was given by means of a large Pravaz's syringe. Five hypodermic injections were

given to this patient without any ill consequences to the subcutaneous cellular tissue.

The two following statistical statements are extracted from M. Fanny's thesis:

1. Chloral given after other preliminary treatment, bleeding, leeches, purgatives, revulsives, anæsthetics, etc.; women treated 16, cured 14, died 2.

2. Chloral given alone: women treated 20, lost sight of 1, cured 19.

The results obtained by the use of this agent are, therefore, very encouraging, and M. Fanny believes himself authorized to draw the following conclusions: Hydrate of chloral affords, at the present time, the best treatment for puerperal eclampsia. It is indicated not only when the attacks openly declare themselves, but also when any symptoms suggest coming trouble.

Dr. Charrier's case, published in the *Annales de Gynæcologie* for January, 1874, is also strongly in favor of the use of chloral in puerperal eclampsia.

A young woman, the daughter of neuropathic parents, suffered two attacks of puerperal eclampsia, in the middle of the ninth month of her pregnancy. Two injections, each containing four grammes of chloral, were given to her. On the occasion of a third, but slight attack, a third injection of two grammes of chloral was administered. Dr. Charrier induced premature labor by dilating the os uteri by means of India-rubber bags filled with tepid water. The mother and child were in good health when this case was published. The child, when two months old, had three eclamptiform convulsive attacks; four small teaspoonfuls of syrup of chloral were given, and the attacks never reappeared.—*London Medical Record*, Oct. 28, 1874.

MATERIA MEDICA AND THERAPEUTICS.

BY E. S. LEWIS, M.D.,

Professor of Materia Medica, Medical Therapeutics, and Clinical Medicine, University of Louisiana.

TREATMENT OF PHTHISIS PULMONALIS BY CHLORIDE OF SODIUM.

Mr. Amedée Latour extols the use of this agent blended with milk as effectual in arresting this disease in its incipiency, and as retarding the inevitable end when given in the latter stages. When possible, he prefers the natural admixture of chloride of sodium with the milk, through the food of the cow or goat, to which it is added in large quantities, so as to impart a well marked saline taste to it.—*Journal de Medicine et de Chirurgie*, March, 1875.

The action of chloride of sodium in phthisis is readily under-

stood when we recollect that it retards the disintegration of the blood corpuscles, by which their capacity for carrying oxygen is augmented—that it increases oxydation and furnishes the muriatic acid of the gastric juice, and consequently improves nutrition.

HYGIENIC TREATMENT OF CHRONIC HEART DISEASE.

In this article copied from the *British Medical Journal*, Dr. Durant lays down certain rules, a non-observance of which, he deems a frequent cause of many sudden deaths. He advises those so affected to avoid sudden and quick movements, especially against the wind, fatiguing voyages, eating too much, drinking cold drinks which may produce syncope, particularly if exercise is taken too soon after, the abuse of tea and coffee, and sexual indulgence.—*Jour. de Medicine et de Chirurgie*, Mar., 1875.

MERCURIAL INUNCTIONS IN ANTHRAX.

Dr. Miramont claims that one friction with two drachms of mercurial ointment over the site of an incipient carbuncle and its vicinity for two minutes, and the subsequent application of a simple compress will, in the large majority of instances, cause them to abort.

TREATMENT OF THE SUPPLEMENTAL HEMATEMESIS OF WOMEN.

The author of this article, Mr. Lorey, after dwelling on the importance of early recognizing this vicarious hæmorrhage, which is not always easy in those cases not occurring periodically, as are sometimes noticed about the change of life, passes on to the treatment which he says should be directed to the amenorrhœa, to the hematemesis, to the gastric derangement, to the connective anemia and to the hysterical symptoms when present. Two or three days before the expected vomiting of blood, he recommends warm hip baths, dry cups to the loins and inferior extremities, one or two applications of leeches to the upper and inner portions of the thighs; or else one or two leeches to the os uteri and internally capsules of apiol and emmenagogue pills composed of two grains aloes and one grain each of rue, savin and saffron. The use of ice, food of easy digestion, exercise, long walks, and in the interval of the periods, a milk diet and as much exercise in the open air, cinchona and iron, as the patient's

state of health will permit, together with bromide of potassium where there are nervous symptoms.

TREATMENT OF CORYZA WITH TANNIN.

In the commencement of coryza the indication is to produce energetic contraction of the swollen mucous membrane in order to diminish its volume. This can be effected by insufflations with tannin mixed with any inert powder. For children, the tannin is mixed with lard and introduced up the nostrils by means of a little cylinder of paper.—*Journal de Medicine et de Chirurgie*, April, 1875.

SYMMETRICAL GANGRENE OF THE EXTREMITIES.

This rare form of gangrene, of which an interesting account is given by Dr. Lucas Championnère, (Paris), affects both sides at the same time and occurs in paroxysms. It is regarded by Mr. Raynaud as due to a local asphyxia of the extremities from an exaggeration of the excito-motor power of the gray matter of the spinal cord controlling the vaso-motor nerves. The symptoms are variable, but generally the gangrene is preceded by sensations of numbness and tingling. The treatment should be directed towards relieving this spasmodic contraction of the vessels (like that produced by ergot) which, by means of the descending current along the spine and extremities, Mr. Raynaud claims he has succeeded in effecting, and consequently in arresting the gangrene.

TREATMENT OF PROLAPSUS ANI.

Dr. de St. Germain recommends the direction of a forcible stream of water against the perineum and anus in children thus affected, after first reducing the tumor; the application to be continued daily for several weeks.

TREATMENT OF NIGHT SWEATS AND DIARRHŒA OF CONSUMPTIVES.

Mr. Chouppe recommends injections twice a day of a decoction of bruised ipecac root as the best remedy which can be used for the relief of these obstinate complications. The formula used by him, is as follows: Bruised ipecac root ʒjss; water ʒjjj, boil till reduced to ʒj then filter. The residue is then boiled over

in three ounces more of water and then strained; the two strained solutions mixed and given in one injection. Debility need not preclude its use nor is it likely to produce vomiting.—*Journal de Medicine et de Chirurgie*, May, 1875.

ACTION OF PICROTOXIN AND THE ANTAGONISM BETWEEN PICROTOXIN AND CHLORAL HYDRATE.

Dr. Crichton Brown states that picrotoxin produces convulsions somewhat analogous to those produced by strychnia, except that it seems to exert a greater influence over the cerebral and a less influence over the spinal centres than the latter. "The spinal cord does not appear to share so much in that instability of nerve tissue which is set up by picrotoxin as in that caused by strychnia, since pinching or pricking the feet or tail, which in strychnia poisoning would certainly induce spasms occasions no disturbance in animals under the influence of picrotoxin. Picrotoxin stimulates the action of the alimentary canal, the flow of saliva is greatly augmented. It lowers the temperature of the body. The minimum fatal dose in a rabbit weighing three pounds was found to be 1-20th of a grain. This quantity or more was accordingly given to a number of rabbits, and it was found that the effects of the 1-20th of a grain were neutralized by 10 grains of hydrate of chloral, the animal sometimes exhibiting in a singular manner the struggle between the poison and the antidote."—*British Medical Journal*, March 27, April 3 and April 10, 1875.

GOA POWDER AND PO 'DI BAHIA.

Dr. Selva Lenia considers that the Goa powder used in the East as a cure for ringworm is identical with the Po 'di Bahia, employed for a similar purpose in Brazil.—*Medical Times and Gazette*, March 6, page 249.

Dr. Henry Blanc, Surgeon Major of the India army, regards Goa powder as the most efficacious application in the treatment of ringworm. He had occasion whilst returning from China to India by water, of testing its virtues on the soldiers of his regiment, who were nearly all affected with ringworm, and every instance was successful in curing this annoying complaint after a few applications. He says it is a vegetable substance prepared in Goa, but the origin of which is scrupulously preserved a secret by the inhabitants, although it is thought to be derived from a species of lichen which is exported in large quantities from Mozambique. Its composition is as follows: Water, a saccharine principle, one or two bitter principles, a variety of arabine, chrysophanic acid, resinous matter, ligneous fibres and mineral matter (ashes). Chrysophanic acid is the most important part of this powder and to it the antiparasitic properties of

this powder may be due. The manner of using it is very simple. The affected part should first be washed with water, and whilst wet the powder should be lightly but thoroughly rubbed over. Two applications a day suffice—recovery takes place generally in three or four days.—*Journal de Therapeutique*, published by M. A. Gubler, Paris, May 25, 1875.

ACTION OF PICROTOXIN.

From a series of experiments performed by Dr. Planat (de Vollore Ville), with picrotoxin on inferior animals he is authorized to conclude from the results obtained:

1. That picrotoxin acts specially on the cerebro-spinal nervous system.
2. That this action spares the brain, properly speaking, and is directed to the cerebellum, the medulla oblongata and the spinal cord.
3. That it is characterized by an over-excitement of these elements, from which there results at first exaggerated movements and subsequently paralysis from excessive waste of nervous power.
4. That the most remarkable consequence of this functional over excitement is the more or less complete arrest of the heart during the convulsions; the slowing and evident weakness of its pulsations in the remissions, and finally the stasis of the capillaries, thence it follows that picrotoxin is above all a cardio-vascular agent.—*Journal de Therapeutique*, by Gubler, May 25, 1875.

ACTION OF IRON ON NUTRITION

Mr. Rabutan, from the result of experiments performed on himself with proto-chloride of iron, arrives at the following conclusions:

1. That iron does not sensibly modify the quantity of urine.
2. That it increases the acidity of this fluid which would render it useful in phosphatic gravel, and oxaluria, to increase the solvent properties of the urine relative to the phosphates and oxalates of lime.—(Rabutan's Lesson of 1st May, Society of Biology.)

ACTION OF SULPHATE OF QUINIA.

The following is an extract from Rabutan's article on **Cinchona**

and its alkaloids, translated from the revised edition of his "Elements de Therapeutic," 1875:

Introduced in the stomach, quinine or cinchona at first produces eupeptic effects like all the bitters; sometimes at first it produces vomiting, which is not astonishing, as a bitter substance, simarouba, which has been employed to break fevers, occasionally produces the same effect. It sometimes produces constipation, at other times diarrhœa. Its absorption is followed by a slowing of the circulation, a lowering of the pulse, and nutrition is moderated. The slowing of the circulation is often so great that fatal syncope has been known to follow.

At the same time that these effects are manifested there occurs after a slight excitement, cerebral troubles, buzzing in the ears, hardness of hearing, vertigo, titubation—in other words, all of the manifestations of cinchonism. In poisonous doses the respiration is considerably diminished in frequency as well as the circulation; the pupils are dilated, and sensation and motion abolished.

These symptoms prove that quinine acts at the same time on the nervous and on the muscular systems. The nervous system is slightly excited at first, then paralyzed, as is shown by the diminished sensation, the impossibility of performing voluntary movements—for the muscles can still contract under the stimulus of electricity when the will has lost its controlling power over them, but later they are also paralyzed, and electricity fails to excite. The cessation of the heart's action is owing at first to paralysis of the auto-motor ganglia, then of the muscular elements of this organ. The involuntary muscles are stimulated by quinine, as is proved by the uterine contractions which it produces. Quinine therefore produces, in weak doses, a tonic action in this sense, that it stimulates the nervous and contractile elements, and in large doses it paralyzes them.

In speaking of its influence in malarial affections, this author gives the following explanation of its action: We know that the heart beats slower under its use, that the involuntary fibres contract, from which the calibre of the vessels diminish, as also the size of the spleen—an organ rich in involuntary fibres. Its action is just the opposite to that of a substance which would produce a paralysis of the vaso-motor nerves, a dilation of the vessels, and fever. He concludes that it prevents fever in the same manner as it prevents artificial elevations of the animal temperature and the production of sweat. Kenner found that gymnastic exercises which would raise his temperature two degrees centigrade (equal to about 4° Fah.), would not raise his temperature two-tenths of a degree when he had taken a full dose of 18 grains of quinine.

CORRESPONDENCE.

LOUISVILLE, KY., May 8th, 1875.

To the Editor of the New Orleans Medical and Surgical Journal:

DEAR SIR—The American Medical Association, pursuant to adjournment one year since, at Detroit, held its twenty-sixth annual Meeting in this city during the present week. The new plan of organization which went into effect one year since, promises to be very satisfactory to all interested, and to add much to the prosperity and usefulness of the organization. One important feature of the new plan is the establishment of a judicial council to which all vexed questions of an ethical character are to be referred. Both on account of the improvements in organization, and the presence of an unusually large number of representative men, the session which closed this day will long be remembered as one of the most harmonious in the history of the Association.

On Monday evening the Association of Medical Editors of the United States convened in a parlor at the Galt House. This Association meets annually at the place of meeting of the National Association, on the evening preceding the organization of the latter. The objects of this Association seem to be quite indefinite. The President, Dr. Edgar, of St. Louis, delivered an address which elicited many complimentary expressions. The subject of the address was Medical Advertising. The following extract will indicate one variety of this growing evil which receives attention: "A dozen or fifteen, or twenty doctors, more or less, meet and organize themselves into a medical faculty, a charter is procured and the chairs 'panned out' among them, and circulars scattered thick as black birds in autumn, heralding the wonderful advantages of this new school. A card is in all the publications of the city, secular and scientific; thus no means are spared to make it known that Prof. A. has the chair of obstetrics, and Prof. B. that of surgery, etc., then come many more names (with their addresses), as assistant lecturers, waiting to don the discarded mantles of their superiors. In this way, twenty-five or thirty doctors are advertised into practice over their neighbors, often every way their superiors." The evil influence of such schools upon the profession at large were clearly pointed out by Dr. Edgar, and he suggested as a remedy the

formation of State examining boards, which shall furnish the only right to practice medicine in the various States.

This subject, which has agitated the medical public for so long a time with so little benefit, was ably and elegantly handled by Dr. W. K. Bowling, of Nashville, upon taking the presidential chair of the American Medical Association. He enunciated as the subject of his address, Medical Education, and the relation of the American Medical Association to the same in the United States. This address, although upon a hackneyed subject, was listened to with the closest attention throughout, for it was written in Dr. Bowling's original, quaint, and pleasing style. After giving due notice to those "diploma shops" which obtain classes by underbidding other institutions, and whose only requirement for the doctorate is "two full courses of lectures, the last of which in this institution," he advocated the demand of more thorough preparation from those applying to physicians to become office-pupils. He insisted that physicians throughout our country should refuse to take under their care, as students of medicine, any persons who are not properly prepared for the study of a profession requiring, more than any other, good habits of study and a thoroughly trained mind.

On the first day of the session, Dr. S. D. Gross, of Philadelphia, gave notice that he would read a paper with the following unique title, "One of the Lost Arts in Medicine." Much surprise was manifested when it was discovered that it was his purpose to make a plea for blood-letting. By special permission, the paper was read before the entire body instead of being referred to one of the sections. After referring to the abuse of venesection in former times, he spoke of its neglect of late years, and advocated its use in many acute and chronic diseases. Doubtless a large number of the profession will concur with Dr. Gross in maintaining that blood-letting has fallen into undeserved neglect; few, however, will join him in advocating its employment in chronic phthisis and cholera infantum. The position assumed in this paper by one who has grown eminent as well as old in the profession, will doubtless be criticized by more competent persons than your correspondent, and we will only express our surprise that such teachings should emanate from such a source at the present day. Few men who have seen as much of their profession, and who have been so long and steadily in the harness, have

borne the wear and tear better than Professor Gross. His life has been one of earnest and constant labor, and at an age when the confreres of his earlier life have retired, some from practice and many from life, he remains on full duty as a practitioner and teacher of surgery, honored at home and abroad, and the author of a work on surgery among the most thorough and comprehensive in our language.

Dr. Austin Flint, Sr., of New York, chairman of the section on practical medicine, made a report on the progress in that department during the past year. Dr. Flint is a fine writer, and his address was a scholarly resumé of the advances in practical medicine during the past year. It was delivered in elegant and impressive style, and received the undivided attention of the whole body. He first spoke of the action of certain new remedies, as jaborandi, salicylic acid, and some other agents which as yet have scarcely found their proper place in our therapeutics. The researches of Anstie and others upon the behavior of alcohol when introduced into the system, were thoroughly discussed, from which it was concluded that a small portion is excreted by the lungs, skin, and kidneys, while the greater part is consumed in the body. Six hundred grains of absolute alcohol, he said, can be disposed of without injury to the functions of a healthy adult. After some remarks upon transfusion, and the treatment of gastric ulcer, as advocated in the late work of Dr. Balthazar Foster upon practical medicine, he concluded his address by calling attention to the natural history of crime. The relations of hereditary and diseased conditions to the commission of crime, and the feasibility of medical treatment in such conditions, were thoroughly and ingeniously presented. One main object of the address was to secure from medical men that consideration of this subject which its importance demands, so that its relation to responsibility in criminal acts may be clearly understood.

Dr. H. M. Moore, of Rochester, N. Y., chairman of the surgical section, delivered a very exhaustive address upon the subject of transfusion of blood. In fact, the resumé of the literature of the subject given in this address was *exhausting* to the audience as well as *exhaustive* of the subject. He advocated immediate transfusion, and reported several interesting cases, but nothing new was presented except some changes in the method of operating.

Dr. Byford, of Chicago, followed with an address upon the hypodermic use of ergotin in the treatment of uterine fibroids.

The address upon State Medicine and Public Hygiene was delivered by Dr. Bowditch, of Boston.

During the course of the session much valuable work was done in the various sections, although some papers were quite feeble, indicating a desire upon the part of their authors to introduce themselves to notice rather than to present any new ideas.

Several items of peculiar interest to the profession at large were acted upon during this session; among other things a distinct plan was perfected to perpetuate the memory of the "Father of Ovariotomy," and a committee of able and influential men appointed as the trustees of the "McDowell Memorial Fund."

Philadelphia was selected as the next place of meeting, and the Association honored itself by electing Dr. J. Marion Sims, of New York, President, and Dr. John G. Jackson, of Kentucky, First Vice President. These gentlemen, of more than national reputation, are so identified with the profession of the South as to make any eulogy or introduction unnecessary to the readers of the *N. O. Medical and Surgical Journal.*

The Association was received and entertained by the profession, assisted by the citizens, of Louisville with that generous and elegant hospitality so characteristic of Kentucky. The proceedings of each day were followed by magnificent entertainments at night, which caused the social features of the meeting to rank among the most pleasant. Though many bitter feuds exist in the ranks of the profession in Louisville, to the credit of all be it said that no evidence of bitter feeling was manifested during the session, and, on the surface at least, all was as quiet and peaceful as a summer day.

As indicating the order of talent of the various delegations composing the Association of 1875, we will mention the following gentlemen, who were actively engaged in its proceedings. The names of many are familiar wherever medicine is cultivated as a science. Delegations were present from almost every State and Territory, and many others of more than local reputation were Drs. Bowditch, Clark, and Storer, of Boston; Drs. Flint, Sayre, Sims, and Wood, of New York; Drs. Gross, Atlee, and Wood, Jr., of Philadelphia; Dr. N. S. Davis, of Chicago; Dr. J. M. Toner, of Washington; Dr. Paul F. Eve, of Nashville; and Dr. W. O. Baldwin, of Montgomery, Ala.

The greatest harmony and best feeling characterized the meeting throughout, and at its close Dr. Bowditch, of Boston, congratulated the Association upon the absence of any partisan spirit, and expressed his gratification in meeting upon the same floor gentlemen from the extreme South as friends and members of the same brotherhood devoted to the same noble work. He was eloquently and appropriately responded to by Dr. Baldwin, of Montgomery, and after brief addresses from Dr. N. S. Davis, of Chicago, and Dr. S. D. Gross, of Philadelphia, the Association adjourned.

The limits of this communication forbid any detailed account of the work done in the various sections, which was scientifically the most valuable transacted by the Association.

This meeting of the Association was entirely a success, both scientifically and socially, and it is the hope of its friends that, with the new departure in its method of organization, it will in the future bear that relation to the profession of the United States which the British Medical Association holds to the profession of that great nation.

With these disconnected impressions of the workings of a body capable of doing much for the medical profession in this country, I am, sir,

Respectfully, A DELEGATE.

NOTICES OF NEW BOOKS

What Young People Should Know. The Reproductive Function in Man and the Lower Animals. By Burt G. Wilder. 12mo.; pp. 212. Boston: Estes & Lauriat; 1875. From R. G. Eyrich, Bookseller and Stationer.

In the preface the author remarks: "The complete title of this little work should be 'Some of the Things Young People Should Know.' For the writer believes that the whole subject should be explained as soon as it can be understood by the young. * * * This volume, however, is intended to include only those things which most directly concern young unmarried persons of both sexes."

We have long been of the opinion that too great reticence is observed by parents and others concerned in the care and training of the young on matters concerning the reproductive system.

Young people have been left to find out such matters in their own way, without assistance from those better informed than themselves; consequently their information has been defective, and to a great extent erroneous. The imagination is sure to attempt to supply defects of knowledge, and, when once called into play, this faculty of the mind is not likely to be restrained by any bounds of reason or moderation.

The intent of this little book is to supply a much needed want, and it is now our purpose to see whether it has been well carried out. We confess that the title of the book did not prepossess us in its favor, on account of its sensational style, coupled as it is with the motto displayed on the outside—"*Honi soit qui mal y pense.*" There is a prurient look at the first glance, inviting such curiosity as is excited by indelicate pictures, and exciting the suspicion that the book was made rather for the pecuniary profit of the author and publisher than for the benefit of its readers. An examination of the contents partially dispels this prejudice, but not entirely. The anatomy of the sexual organs seems to us needlessly minute for the non-medical reader, as well as the description of the functions concerned in the processes of reproduction. Probably the book would be less attractive to the general reader with less minuteness in these particulars, but its real value might perhaps be greater.

In one point we must disagree with the author, that this "whole subject should be explained as soon as it can be understood by the young." It could be understood even before childish curiosity is much directed in this channel, in families where children are carefully reared; but we doubt the propriety of volunteering information on such subjects much before the period of puberty, when the natural process of development is sure to call forth new desires and a curiosity previously greatly in abeyance.

Having thus freely criticised what we consider faults in this book, we are bound to declare that it contains much information valuable to the young, much sound advice—not the least important of which is to shun newspaper medical advertisements. Its impression on young readers will probably be rather salutary than otherwise, but we apprehend that many will be a little disappointed, when they find that its contents are not quite in keeping with its apparently meretricious dress.

S. S. H.

A Series of American Clinical Lectures, edited by E. C. Seguin, M.D., Vol. I. No. II.—Acute Rheumatism in Infancy and Childhood. By A. Jacobi, M.D., Professor of Diseases of Children, College of Physicians and Surgeons, N. Y. Pp. 38. New York: G. P. Putnam's Sons; 1875.

This number formed the substance of two lectures delivered in the amphitheatre of the Bellevue Hospital, February 13th and 20th, 1875.

After speaking at some length on the association of articular rheumatism with cardiac inflammations, illustrated by cases in presence of the class, Prof. Jacobi proceeds to discuss the subject proper, as indicated by the title. As to the pathology of rheumatism, he discards the idea that the cause is to be found in any particular quality of blood, averring that "neither the lactic acid, nor the lithic acid, have ever been shown to exist; not even in the liquids effused by the effect of vesicatories have they ever been found." "It is much more rational," he adds, "to assume that some changes in the blood-vessels must coexist with the multiple fluxions which constitute the fundamental phenomena of the disease." It appears, therefore, that he inclines to *solidism* rather than *humoralism*. In his view, endocarditis is not a "complication of rheumatism, but its highest and most developed expression." On the other hand, he attributes polyarthritis in many instances to prëexisting endocarditis, on the supposition that emboli are carried from the inflamed endocardium into the joints. It is then simply accidental whether the emboli lodge in the joints, or in other organs—in other words, whether the result be rheumatism or paralysis, or pulmonary infarction, etc.

With regard to comparative liability, he finds rheumatic affections rather common among young children, and somewhat more so with females than males; also that heart complications are decidedly the rule in young subjects. This last fact he thinks attributable partly to the fact that the heart in early life bears a higher ratio to the aggregate weight of the body than at a later period.

An interesting point made by the author is the frequent association of chorea, endocarditis, and articular rheumatism. As these three affections may succeed in no particular order, it

follows that they are correlated to a common cause, instead of serving to each other in the relation of cause and effect.

Another idea is, that "*growing pains* are not infrequently inflammatory rheumatism, and many an endocarditis of later years may be traced back to the *growing pains* which are but little remembered."

With regard to treatment, in the acute stage he finds indication for immoveable rest in the partially flexed position for the affected joints. In case of high temperature and swelling, he would apply ice until these conditions have ceased; then poultices and warm applications promote absorption. "To relieve vascular pressure, aconite, digitalis, veratrum, colchicum, or quinia, are administered." Quinia is placed "at the head of antiphlogistic remedies;" but he uses it in decided doses, out of proportion to the age of the little subject. In choreic rheumatism arsenic is the remedy of prime importance, and bromide of potassium is assigned the next rank.

On the whole, we regard this paper as a very interesting and valuable contribution to our literature on a subject of great importance from the frequency of the maladies in question, and from the serious permanent results which so often accompany their subjects through life.

S. S. H.

Pneumo-thorax. Vol. I., No. III. By Austin Flint, Sr., M.D., Professor of Principles and Practice of Medicine, Bellevue Hospital Medical College. Pp. 18.

The subject is treated under four different heads, according to the causes on which the gaseous accumulation in the pleural cavity is dependent. These are stated as: (1) empyema, (2) interstitial emphysema, (3) circumscribed gangrene of the lung, and (4) phthisis.

Pneumo-thorax is, in the first instance, a consequence of pleurisy, in which a simple serous effusion is not liable to such a result, but a purulent deposit seeks exit either through the chest walls or through the pulmonary structure. Purulent expectoration is the signal of the latter course. The treatment pursued by the author is paracentesis, with a permanent opening for drainage, and daily washing out with tepid water containing a small portion of carbolic acid.

The second cause named is stated to be merely inferential, as it does not lead to a fatal result which might be verified by *post-mortem* examination. His deduction is drawn from observing *post-mortem*, in some instances, bleb-like elevations of the pulmonary pleura, which he supposes are liable to burst, leaving open a communication between the air cells and the pleural sac.

The third cause is considered as comparatively rare. The slough progresses outwardly, and, not being checked by pleuritic adhesions, acute inflammation ensues, followed by empyema, the generation of fetid gases, and rapid sinking.

The author relates that, in an analytical study of nearly 700 cases of phthisis, he has found pneumo-thorax in about three and a half per cent. A much larger proportion, he thinks, would suffer this complication, but for the pleuritic adhesions which arrest the ulcerative process, and prevent perforation. When this conservative provision fails, extensive pleurisy ensues, and the serous sac is liable to hold serum, pus, air and putrefactive gases. As aspiration is one of the methods in use for evacuating the liquid contents, the author gives a caution, that laceration of the pleural membrance is liable to be made by the needle of the aspirator, when coughing takes place, on the expansion of the compressed lung. On this ground he prefers a blunt pointed tube.

Another point may best be stated in the author's words:

"An important practical question relates to the employment of aspiration in the cases in which it is known that pneumo-thorax preceded the filling of the pleural cavity. Is it advisable, under these circumstances, to withdraw the liquid? An objection to it is this: the compression of the lung by the liquid closes the opening, and, if this compression be maintained, the opening may become permanently closed. Another objection may be raised, namely, the rapid expansion of the lung may lead to a reopening of the perforation, when, if the expansion were to take place slowly, as would be the case if the liquid were removed by absorption, this result would not be so likely to follow. In a rational point of view, these seem to me valid objections, and I would meet them as follows: If the pleural cavity become filled after pneumo-thorax has been known to exist, I would not resort to aspiration so long as the quantity of liquid was not large enough to occasion suffering from dyspnœa, that is, assuming that the liquid is not pus—and this is readily ascertained by exploring with the hypodermic syringe—but, if there be sufficient dilatation of the chest to occasion dyspnœa, I would withdraw a certain quantity of the liquid, enough to relieve dyspnœa, leaving sufficient to secure the possible advantage of compression; and

the withdrawal of liquid within this limit may be repeated *pro re natâ*."

As cases of this complication are almost of necessity fatal, thoracentesis can only be regarded as a palliative measure for the relief of dyspnœa. In this regard merely, it gives a useful result; but the author questions whether it may not give promise of positive cure, in case the tuberculous ulcer penetrating the pleura is of small dimensions, and the disease not progressive. A prospect may then be afforded, that free evacuation of offending matters, and repeated cleansing of the cavity, may be followed by recovery; while in any case no harm is likely to result.

It is the intention of the publishers in this series of medical papers to present lectures on important topics by teachers of acknowledged reputation, and that of these two is so well known as to bespeak for them, in advance, both interest and confidence. The object of the present notice, consequently, has been rather to designate points of special significance than to criticise the productions. S. S. H.

Annual Report of the Officers of the Mississippi State Lunatic Asylum for the year 1874. Pp. 51.

The report of the Trustees shows that the appropriation for the support of the institution was not all expended, which fact proves an able and honest expenditure of its resources.

The portion of special interest to the medical profession, is that contributed by the Superintendent, Dr. Wm. M. Compton. Several tables are given, showing "Movement of Population;" "Admissions and Discharges," variously classified; "Nativity;" "Residence," classified; "Occupation," "Civil Condition," etc.; "Supposed or Assumed Causes of Insanity;" "Form of Disease;" "Duration;" "Recoveries;" and so on, making twenty-seven in all. These are interesting, and appear generally to have been prepared with care and accuracy. It seems to us, however, that table 11, "Supposed or Assumed Causes of Insanity," is an exception to the general statement, inasmuch as 56 of the 86 admitted during the year are designated as "Unknown." It certainly seems to us that the cause of insanity ought to be at least *supposed* or *assumed*, in much larger proportion than one-

third—indeed that it ought to be *known* in more than one-half. Intemperance is generally accredited by writers on Insanity as the cause of a large proportion of cases; yet in this table we find but 2 of the 86 attributed to this cause; and of the total number in 19 years, 12 in 1094. This discrepancy with ordinary statistics is hardly attributable, we think, to preeminent sobriety among the people of Mississippi. Pecuniary trouble is represented by a single case in the whole 1094, which would seem to indicate an unexampled prosperity or content among our neighbors, not attributable however to the blessings of "reconstruction," as the peculiarity dates back previous to this important event. Still it is according to our observation, that dread of poverty is much less prevalent in the South than in New England, where it is an actual, if not an acknowledged, principle, that the *want* of money is the root of all evil.

A strong and well-founded plea is made for an extension of the Asylum so as to accommodate a larger number of inmates. On account of limited space, numbers are necessarily turned away, while, if they could be admitted at an early stage of their malady, the chance of recovery would be much greater. Under the present restricted plan, the Asylum is mainly filled with incurable cases, and recent ones are necessarily excluded, until they become chronic and incurable, before room can be made for them.

A table is given, showing the comparative expense per week, for each inmate, in nineteen of the principal Lunatic Asylums in the country. It appears that the most expensive is the Pennsylvania Hospital, where the weekly cost is $8.68, and the least the Eastern Asylum of Kentucky, where it is $4.13. In this institution it is $4.50, and only four show a lower rate

On the whole we think the report shows a prudent and successful administration of the Asylum, and trust that the recommendation of the Superintendent for increased accommodation may obtain the necessary legislative action. S. S. H.

Contributions to the Pathology and Therapeutics of Diphtheria. By A. Jacobi, M D., Clinical Professor of Diseases of Children in the College of Physicians and Surgeons, New York.

In this paper Professor Jacobi commences by referring to two

articles, previously written by him on the same subject. He then alludes to the epidemic of 1875, in which he states—"that the nature of the cases were the same"—and continues with an interesting description of the local changes produced by this disease, of which he makes four forms.

In the first, there is a catarrhal condition of a part, or of the whole of the pharynx, which is a precursor of the local affection, he describes as a "slight film of what appears to be mucous * * * but we have in reality to deal with diphtheritic changes in the epithelium, and not infrequently are these the cases in which fever is unusually high and general symptoms prevalent."

In the second form, he says: "We have to deal with small deposits, as described above. They are not inflammatory, for there is no nuclear proliferation and subdivision, no intimate admixture of leucocytes, a few of which may however be found adhering to the lower surface. The superficial epithelia are the principal sufferers; the lower strata are less changed."

Further on he remarks on the granular material found in the deposit, "Because it has been observed to spread rapidly, and because of its similarity to the botanical parasites in putrifying material, it has been taken as botanical, parasitical, and called either Sphaero Bacteria, Micrococci, or Monades."

Then follow quotations from Hueter, an advocate of the parasitic origin of diphtheria; from Billroth, who believes "that a chemical poison is the source of infectious diseases, but this may result from the presence and influence of cocobacteria in the blood;" from Tom Hiller who is sceptical on the bacteria theory.

The third form is then mentioned as resembling the 2d, but as also involving the substance of the mucus tissue from which it cannot be removed without exposing an ulcerated surface.

"The last form of diphtherite, as found sometimes on the conjunctiva, and in all cases of diphtherite of the œsophagus, vagina, trachea, and lower portion of the larynx has been taken to consist of fibrine as principal constituent."

Concerning this form the author adopts the views of E. Wagner, that the croup membrane, although in part composed of genuine exudation, is principally, "the result of a metamorphosis of the epithelium."

Further on he attempts to account for the preference shown by these various forms to certain localities, on the variations "in

the condition of the mucous membrane in different organs and locations;" and gives a description, both anatomical and physiological of the nasal, oral, pharyngeal, laryngeal, and tracheal mucous membranes, dwelling particularly on the arrangement of the lymph vessels, and on the quantities of elastic fibres contained, from which, by an ingenious process of reasoning, he accounts for the various forms of diphtheritic deposits observed, whether superficial, or deep seated, whether loosely attached or strongly adherent, to the anatomical and physiological differences he describes. As regards the general symptoms he says: "The distribution of blood vessels, and more still of lymph ducts is of the greatest importance," etc. "Their absence from the tonsils explains the benign character of tonsillar diphtherite; their number and size, and the direct connection with lymphatic glands in the Schneiderian membranes explain the danger of nasal diphtheria." He then enters into an account of the various theories, explaining "the connection of the lymph vessels within the fibres and cells of all connective tissue." Citing the views of Köllicker, of Relinghausen, of Newman, etc., and deducing from their conflicting statements, that the origin of lymph capillaries may vary in different organs. Continuing, he states: "the liquid contents of the tissues, or such particles or ingredients as can be suspended in them, of a gaseous, or chemical, or parasitic character, are swept off to the lymph glands, the peripheric fascia of which forms a first resting place." * * * "and if small enough * * * will be introduced into the unimpeded current of lymph and blood circulations,"—but that sometimes the foreign admixture may be too large to pass easily—then there will be stagnation, irritation, the substance of the lymphatic glands whence the swelling and inflammation, leading sometimes to the formation of abscesses, by which it is eliminated, and its injurious consequences to the system obviated, as occasionally occurs in syphilitic and other poisons.

"The glands may be engorged even when the foreign material is not excessive in quantity, but only highly irritating in character by being of a heterogeneous nature; no matter whether chemical or parasitic. In cadaveric infections the axillary glands will swell to fifty times their original size. * * * The glands of the neck swell in diphtheria in a few hours to an unseemly extent."

In another place he says: "But when the irritaments are very

small and very numerous, large numbers may be swept into the general circulation before resulting in local swelling." * * * "That not infrequently do we find that the very mildest cases—apparently—result in the most severe attacks. Sudden collapse and death in diphtheria is generally observed in alleged mild cases." * * *

He then proceeds to consider whether it is at first local or general—taking the latter view, and placing the deposit in the same category with the eruptions in the various exanthematic diseases. Whilst concerning the etiology, he concludes from clinical observation, that certain cases must be due to a gaseous or liquid substance as they "cannot be explained by the bacteria theory as well." * * *

This view has many opponents, particularly among the Germans; Oertel, for instance, whose article in "Ziemssen" is familiar to the majority of American practitioners.

Trousseau in his exhaustive clinic on this subject, advocates the local origin of the disease and the subsequent infection of the blood.

On the sudden deaths which often occur in this affection, he says some, as Hiller and Mosler, "emphasize in such cases the degeneration of the heart muscle. * * * Others look for the explanation of the sudden death in the interrupted innervation of the heart"—through implication of the pneumo-gastric or sympathetic. * * * "A paralyzing influence working on the tissue of the former will accelerate the pulse; a degeneration of the sympathetic heart ganglia renders it slower, and death may finally occur in either condition. It is the same apparent incongruity of symptoms, easily explained, however, which we notice in the common form of fatty degeneration of adults.

We must look upon the changes leading to death in the majority of such cases, as of the same character, although of different degree, as those belonging to diphtheritic paralysis.

In another place he cites the views of Oertel, that the paralysis is progressive peripheric, creeping away, as it were, from the first attacked mucous membrane. With this explanation he takes issue, believing that it may depend on granular degeneration of muscular fibre (Buhl), or from capillary hemorrhage and waxy degeneration, and that in some it may be central. He states that those cases with "no fever or but little fever are more

frequently followed by paralysis; that in cases with high fever the poison is more rapidly eliminated."

Under the head of prognosis, he first treats of the class of persons most apt to be infected by diphtheria, and secondly of the class of cases most apt to prove serious or fatal.

He regards children as most prone to become affected, because of "their greater softness and moisture of tissue, their larger number and size of lymph vessels."

Concerning the local manifestations he says, that when limited to the tonsils it is decidedly favorable; when the larynx is involved it is almost always fatal; when the nares are implicated it is always serious. The laryngeal diphtheria in children, owing to the narrowness of the glottis, is apt to produce asphyxia—in the adult to assume a septic character. As regards the form attended with most gravity, next to the implication of the larynx the septic and gangrenous form of diphtheria are most to be dreaded. The temperature is not significant of gravity.

The author, after some remarks concerning the complications liable to occur, as broncho-pneumonia, embolism, passes on to the management of diphtheria, premising the treatment by some words of advice, as the necessity of removing every exciting cause, such as nasal or oral catarrh, avoiding operations in times of epidemics of diphtheria, and giving chlorate of potash and chlorate of soda for its influence in bringing about a healthy condition of the mucous membrane. He then passes on to the consideration of the remedies, which he divides into three classes. "1st. Those which dissolve the false membranes and thus facilitate their removal. 2d. Substances modifying the surface from which the membranes have been removed. 3d. Disinfectants equally capable of arresting chemical changes and of destroying animalcular life, according as either theory is adopted."

But the first class is specially mentioned. Gum water, glycerine, moist heat, and the local applications of ice, when the enlargements and secondary inflamations are great. In the second class, besides chlorate of potash, he recommends the perchloride of iron or the muriated tincture of iron; but to be of any efficacy it must be given in large doses frequently repeated. From five to fifteen drops every quarter, half, or every hour, is a dose that alone fairly tests the effective powers of the medicine. Gargles and direct applications to the pharynx may be dispensed with. The muriate, he says, acts upon the surface from which the men-

branes have been removed, lessening the hyperemia, reducing the swelling, and seeming to limit the reproduction of the exudation. The perchloride is generally useful, being specially distinguished by a capacity for stimulating the nervous system; probably by increasing the arterial tension in the nerve centre, which renders it useful in warding off collapse.

In the 3d class, or disinfectants, he recommends carbolic acid for its known properties in arresting chemical changes and destroying bacteria or micrococci. Where possible, the false membranes are touched with the pure carbolic acid, but no attempt should be made to tear the false membranes, thus leaving a raw and bleeding surface, as that will spread the process. To the simple cases he gives frequent small doses of chlorate of potash, combined with lime water or tinct. ferri mur. ʒss.—ʒii per day, generally mixed with a little glycerin. For the relief of the swelling he recommends applications of cold water or of ice; and in laryngeal diphtheria, notwithstanding the unsatisfactory results of tracheotomy, he nevertheless recommends it whenever asphyxia is imminent. During the entire treatment his patients are well nourished.

As a means of checking the spread of diphtheria, he suggests the appointment of a physician in every district, whose duty it shall be to "look after the throats of every pauper or tenement house child with symptoms of either diphtheria or pharyngitis." "This plan," he says, "will be more successful than the disinfecting of infected houses." E. S. L.

Other Pamphlets Received.

A criticism on *Cooper's Dictionary of Practical Surgery and Encyclopædia of Surgical Science.* By Paul F. Eve, M.D.

The History of the Philadelphia School of Anatomy and its Relations to Medical Teaching. A Lecture Delivered March 1st, 1875, at its Dissolution. By Wm. W. Keen, M.D., Lecturer on Anatomy and Operative Surgery in Philadelphia School of Anatomy.

An Account of the Epidemic of Cholera, during the Summer of 1873, in Eighteen Counties of the State of Kentucky. By Ely McClellan, M.D., Assistant Surgeon U. S. Army.

EDITORIAL.

Professional Items and News.

Since the last issue of this JOURNAL, the progress of practical medicine has been marked by the publication of several papers upon subjects of great interest to the general practitioner.

Standing at the head of this list, both as it respects intrinsic merits and the independent manner in which its propositions are set forth, is Prof. Gross's paper upon "A Lost Art in Medicine." Those veterans in our ranks who, like Dr. Gross, have battled with disease when blood-letting was the practitioner's chief weapon, having for themselves witnessed the good effects following its employment, are certainly well qualified to deduce a comparison between the results of practice then and practice now. It is somewhat to be regretted, that our libraries do not afford carefully compiled mortuary statistics relating to the blood-letting era, which, being placed side by side with those of recent practice, would exhibit in tabular form, the results of both modes of practice in the treatment of disease. But the assertions of experienced practitioners must be considered as representing the lessons derived from accumulated facts. When Rush declares that "it imparts strength to the body by removing the depression which is induced by the remote cause of the fever," and again, "that it belongs to this remedy to prevent the chronic diseases of cough, consumption, jaundice, abscess in the liver, and all the different states of dropsy which so often follow autumnal fevers,"* and Gross says, in his "Lost Art in Medicine," "another effect of bleeding not to be overlooked in this discussion, is the diminution which it causes in the quantity of fibrine and white globules, so remarkably augmented in inflammatory affections," we are forced to allow that in each instance the assertion is based upon observations sufficiently numerous and reliable to afford a competent foundation.

It is very difficult for those practitioners whose medical lives date no further back than the days of "Toddism," or "Bennettism" perhaps, to accept in full confidence the correctness of these propositions. They are apt to inquire if the advocates of blood-letting are not mistaken when they contend that it is capable of

* Medical Inquiries, defence of blood-letting.

curing the most opposite conditions of disease. They feel that they have the right to ask the question, Is the human economy so contrived, and its forces so arranged, that an upward recoil follows blood-letting, even though the diseased states in which it is practised are quite antagonistic, the one to the other? We have put the question in this form, because the perturbating effect of a remedy—the revulsion, or impression of shock, or change it exerts upon the system—is many times, the foundation of the philosophy which dictates its use. In the great majority of cases in which we administer medicines for such a purpose, a question might be entertained whether catharsis, emesis, diaphoresis, or venesection, would best meet the indication. There are certainly cases in which the mode of action of blood-letting as a cure may be differently explained, as for example, when done for the relief of any condition of vascular "suffocation," wherever situated. We think it no less susceptible of positive proof, that very nearly all the indications which led our ancestors to practice blood-letting were too wrongly based to be consistent with our more advanced knowledge of pathology and therapeutics.

The most ancient of all indications for which blood-letting was practised, appears to have been to diminish, by reducing the mass of sanguineous fluid, the materies morbi it was supposed to contain. This idea has but little support at the present day, and was, perhaps, indirectly referred to in "the lost art," by the remarks upon the efficacy of bleeding in uræmic coma and convulsions. Our own actual experience satisfies us of its control over convulsions, unattended with blood poisoning, as in hysteria, and is positively adverse to its good effects in pathological states, due to blood inquination. We have never practised general or very large local blood-lettings in Yellow Fever, but among the many good results which Rush supposes he obtained from its employment, he mentions the lessened frequency of convulsions and urinary suppression. Rush sums up eleven different states of the pulse, which call for blood-letting.

In endeavoring to procure at the hands of his professional contemporaries, a reconsideration of their abandonment of blood-letting, Professor Gross should not be understood as advocating a return to the violent practice of Rush, who with all his genius and goodness was an enthusiast and extremist.

We regret that we have not been able to publish in the present

number more of Dr. Gross' paper than is to be found in the Report of the Transactions of the American Medical Association. It is a valuable paper, and ought to be carefully read by every practitioner; but we seriously hope, that during its perusal, each reader will carefully note one statement made by its author: "The influence of authority, annually slays millions of human beings." This admonition should be permitted to have application to the authority with which the present paper comes invested, as well as to that of those writings which have preceeded it.

Medical Protective Association of New Orleans.

The physicians of New Orleans have formed an association for mutual aid and protection. So many and such overgrown abuses of the policy of the profession, in regard to its emoluments, have been allowed to encumber its practice in this city, that instances of actual thrift have become the exception; retrogression in business and financial prosperity is the rule. The evils have become so pinching in their effects, that the sufferers finally began to look to each other for counsel and support, and thus has resulted the organization of the "New Orleans Medical Protective Association."

What a wonderfully self-contradictory agent self-interest is. In prosperity its tendencies are centrifugal; when want or woe threaten, they suddenly become centripetal. Now these reflections are simply in the way of the most innocent soliloquy, without the least breath of invective. I know, and every physician knows, that there is no part of the civilized world in which the medical profession is not freely permitted to determine and regulate for themselves all matters concerning their fees and emoluments. And this permission is sustained both by legal countenance and by the consent of communities among which they practice The city of New Orleans is not only no exception to this statement, but affords an illustration of a community remarkably liberal to its learned professions, as long as liberality remained a possibility. The move made by our profession is a good one. After having committed the great error of wronging each other by accepting the salaries of heartless associations,*

* Few truisms are more apt to be remembered now than the old Jacksonian deliverances in regard to the "soullessness" or "heartlessness" of Corporations. I never look upon the

whose pay for the services rendered, was at the rate of from "five cents" to "twenty-five cents" per visit;—after taking families year after year at ruinously cheap rates, lest some others of the brethren might supersede them; after competing with each other, more after the order of rival inns† in a country village, than members of a dignified and honorable profession, at last the light bursts upon us, and we see how impolitic, improper and unseemly it is to tolerate selfish conduct in our ranks, or to fail to rebuke every exhibition of trickery tending to sink us to the level of petty, haggling traders. Dr. D. C. Holliday is President of the Association, and Dr. W. H. Watkins, Secretary.

Operation on Gen'l John C. Breckinridge.

The operation on Gen'l John C. Breckinridge by Professors Sayre and Gross, has been explained by the former in an "open" letter—(so "open" that it has been copied by the daily press). The patient suffered from abscess of the liver, which had spontaneously opened through the bronchial tubes. The Surgeons attempted to accomplish the desirable end of establishing a direct outlet for the pus. The patient died; exactly, from what cause the letter fails to disclose, and there is no report of any autopsy. Some daily paper was wrong enough and silly enough to say that the patient died of "New York Surgery." Nothing could be more malevolent and unjust than such an imputation, and the severest accountability should be visited upon its author. It is almost a rule for death to result in cases of abscess of the liver. We believe that Frerichs estimates the percentage of mortality at 80 per cent., but we are sure that more than 90 per cent. of our cases have died, whatever course may have been pursued. These points are obtained from the letter in question,

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picture of the pelican immolating herself for the preservation of her offspring, as the adopted emblem of various so-called beneficiary associations, without deciding, that however romantically correct it should chance to be for the poor bird, it is, as a motto of the society, a most unnatural and deceptive metonymy. The matter of the public beneficiary character of these associations is not a subject for discussion. Their requirements of the medical profession appear to justify the use of the word "heartless."

† Nothing is more common than for the Jeremy Diddlers among travellers to lodge at one of these unneighborly hostelries until board bills are pretty urgently pressed, and then to emigrate to the rival, and by artfully decrying the former, to quarter themselves snugly upon the latter.

which was published in the "American Medical Weekly," June 12th, and copied by the "Daily Courier-Journal."

Statue to Dr. Wells.

The Legislature of Connecticut, and the city of Hartford, have appropriated *five thousand dollars* each, to erect a colossal bronze statue to Dr. Horace Wells, the discoverer of anesthesia. A great many medicial gentlemen have suggested that so laudable an undertaking should be participated in by the profession at large, realizing, as we above all others do, the immense benefits conferred upon ourselves, as well as mankind generally, by the discovery reverted to. Letters of inquiry may be addressed to Dr. E. K. Hunt, Chairman of the Committee of the Hartford Medical Society. Subscriptions may be forwarded to Dr. G. W Russell, Treasurer, Hartford, Conn.

Correction.

An important typographical error occurs in Doctor Sternberg's paper which was not included in the list of errata. On the 21st page, 17th line, it should read "where the mucous membranes are pallid," instead of, "where they are filled."

Too Late for Extended Notice.

We have received No. IV of the Series of American Clinical Lectures from R. G. Eyrich. The subject is "Rest in the Treatment of Nervous Disease." The author is S. Weir Mitchell.

The Journal.

Mr. James Gresham has transferred the proprietorship of this JOURNAL to Messrs. Seymour & Stevens. The new proprietors possess facilities for its publication superior to those of other business establishments in this city. They will endeavor to forward the enterprise with the energy and executive ability, which have given them success through a mercantile career of nearly a

half century. The friends and correspondents of the JOURNAL will find Messrs. Seymour & Stevens prompt in attending to their letters and interests.

All business communications, subscriptions, advertisements and exchanges, should be addressed to Seymour & Stevens, Nos. 96 and 98 Common Street, New Orleans. All articles intended to appear in the JOURNAL, or letters in respect to professional or editorial business, should be addressed to P. O. box, No. 2188.

The Centennial in Respect to Oaths.

The majority of our readers are aware that Professor S. E Chaillé, of this city, has been selected by the Centennial Medical Association of Philadelphia, to deliver an address before the Medical Congress expected to assemble on that occasion.

Pending Dr. C.'s acceptance of the appointment, a letter was published from the Governor of Georgia, containing a copy of an oath sent to Mr. Hillyer for his signature.

As soon as an intimation of such a requirement reached Dr. Chaillé, he addressed a letter to Dr. Gross, the President of the Medical Centennial Association, desiring correct information. The following correspondence will set the matter at rest, and our readers will percieve, that,

"1. None connected with the Centennnial are required or expected to take any oath at all, except U. S. Commissioners."

"2. *All* U. S. Commissioners, whatever (whether for the Centennial, or what not), are required *by law* to take an oath; and over this Congressional Law the Directors of the Centennial have no control whatever."

CHAILLE.

PHILADELPHIA, June 21st, 1875.

Prof. Samuel Gross, M.D., Philadelphia.

DEAR SIR—I am in receipt of the letter of Dr. S. E. Chaillé, of New Orleans, addressed to you relative to the oath that it is alleged was required of Mr. Hillyer, of Georgia, on assuming the duties of a Centennial Commissioner.

The letter of Governor Smith, to which reference is made, was evidently written under a misapprehension. By a clerical error an "iron clad oath" was enclosed for Mr. Hillyer, but the error

was corrected by the Secretary of State, immediately on having his attention called to it. Mr. Hillyer is now an active member of the commission. The letter of the Secretary to Gov. Smith, on the subject, a copy of which I regret I have not at hand, fully and satisfactorily explained the mistake. It is unfortunate that equal publicity has not been given to the letter of Mr. Fish as has been to that of Gov. Smith. I am sure there is no desire upon the part of the Governmental authorities to discriminate against any class of citizens, and especially in connection with the great celebrations of next year, which we have all looked forward to as an opportunity to unite every section of the country in harmonious feeling and most friendly intercourse. This has uniformly been the aim of the management of the exhibition, and I have not the least doubt but our expectation will be fully realized. I am, with great respect,

Yours very truly,

A. T. Goshorn,
Director General.

Philadelphia, June 22d, 1875.

Dear Doctor Chaillé.

The accompanying communication from Director General Goshorn explains itself. You will perceive that no such thing as an "iron clad oath" is demanded by the managers of the International Exhibition or any body else. One great object of the Exhibition, as set forth in the letter, is to bury all sectional feeling and animosities, if such still exist, to bring us into more intimate social relations, to shake hands with one another, and to become a truly reunited people. The projectors of the International Medical Congress, to be held here in September, 1876, have the same object in view; and hence they desire on this great occasion to see as many of their Southern confréres as possible. For the same reason they have assigned to Southern physicians the preparation of at least three of the discourses to be delivered at the meeting. As the President of the Centennial Medical Commission, I feel authorized to extend to all our friends a most cordial welcome.

With best wishes for your welfare, believe me to be, very cordially yours.

S. D. Gross.

Jaborandi the new sialagogue. At I. L. Lyons.

METEOROLOGICAL REPORT FOR NEW ORLEANS.

Table I---May.

Day of Month.	Temperature.			Mean Barometer Daily.	Relative Humidity—Daily.	Rain fall—inches
	Maximum.	Minimum.	Range.			
1	83	72	11	29.795	77	.00
2	81	68	13	29.902	67	.00
3	81.5	68	13.5	29.830	84	1.36
4	75.5	63.5	12	29.930	61	.00
5	80	62	18	29.998	70	.00
6	85.5	67	18.5	29.969	76	.00
7	85	72	13	29 932	79	.00
8	87.5	72	15.5	29 934	77	.00
9	88	73	15	29.9 3	71	.01
10	83	71	12	29.981	65	.00
11	87	70	17	30.050	74	.00
12	78	70	8	30.042	67	.00
13	81.5	66	15.5	30.046	52	.00
14	84	66.5	17.5	30.065	53	.00
15	88	67	21	30.023	47	.00
16	89.5	70	19.5	29.997	60	.30
17	83.5	70	13.5	30.005	73	.09
18	83	69.5	13.5	30.058	72	.04
19	83.5	68	15.5	30.130	67	.00
20	85	68.5	16.5	30.111	69	.00
21	83.5	68.5	15	30.044	67	.00
22	85	68	17	29.911	61	.00
23	88	69	19	29.875	62	.00
24	89	70.5	18.5	29.907	66	.00
25	90	72	18	29.854	64	.00
26	90	73	17	29.825	68	.00
27	88.5	74	14.5	29.893	82	1.12
28	87	73	14	29.992	71	.00
29	90	70	20	29.990	61	.00
30	87	72	15	29.923	57	.00
31	90	75	15	29.867	66	.00
Mean..	85.19	69.64	15.55	29.961	67.1	Total. 2.92

Table II---June.

Day of Month.	Temperature.			Mean Barometer Daily.	Relative Humidity—Daily.	Rain fall—Inches
	Maximum.	Minimum.	Range.			
1	91	75	16	29.914	69	.00
2	91	74.5	16.5	30.007	69	.00
3	90	76	14	30.094	68	1.75
4	85	70.5	14.5	30.080	76	.00
5	85	73	12	30.060	79	.01
6	81.5	72.5	9	30.015	78	.40
7	82	70.5	11.5	29.976	67	.00
8	83	67	16	30.000	54	.00
9	86.5	70.5	16	30.006	64	.00
10	89	72	17	30.019	67	.00
11	89	72.5	16.5	30.081	65	.00
12	90.5	73	17.5	30.105	56	.00
13	94	74	20	30.048	58	.00
14	94.5	77.5	17	30.004	59	.00
15	94	76.5	17.5	29.977	65	.00
16	92	75	17	29.989	62	.00
17	90	75	15	29.979	69	.00
18	93	74	19	29.950	65	.00
19	94	77	17	29.988	65	.20
20	92	76.5	15.5	30.020	65	.00
21	88	78	10	30.017	70	.00
22	85	76 5	8.5	30.010	79	.42
23	83	75	8	30.025	76	.04
24	86.5	73	13.5	30.033	78	.68
25	87	74.5	12.5	30.040	77	.00
26	82	75	7	30.075	82	.03
27	84	72	12	30.061	83	.76
28	84	72	12	30.022	83	.34
29	85	73	12	30.033	—	.00
30	87	73.5	13.5	30.092	—	.11
Mean..	87.95	73 83	14.12	30.023	69.5	Total. 4.74

Mortality in New Orleans from May 3d, 1875, to June 27th, 1875, inclusive.

Week Ending	Small-Pox.	Malarial Fevers.	Consumption.	Diarrhœal Diseases.	Total Mortality.
May 9.....	10	1	13	3	83
May 16.....	3	5	13	13	103
May 23.....	6	2	15	7	102
May 30.....	7	7	11	15	115
June 6.....	7	1	11	31	144
June 13.....	9	3	16	14	130
June 20.....	7	12	23	16	156
June 27.....	7	11	9	13	121
Totals.....	56	42	111	112	954

THE

NEW ORLEANS

MEDICAL AND SURGICAL JOURNAL.

SEPTEMBER, 1875.

ORIGINAL COMMUNICATIONS.

SELECTIONS FROM THE SURGICAL CLINIC OF PROF. SAMUEL LOGAN,

OF THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF LOUISIANA.

(Mostly reported by the Students in attendance.)

CASE OF KOLPOKLEISIS.

Reported by Mr. G. A. Wise.

C. A. C. (colored), aged 34; native of North Carolina; came to Louisiana in 1865, and has been living in Bayou Sara; was a field hand until she moved to this State, and then became a house servant.

Menstruation began in her 17th year, and she has never suffered any from irregularity; has never had a single abortion; has always been in absolutely robust health, and says she was a very good field hand.

Gave birth to her first child at the age of 25; the labor was somewhat protracted (about 24 hours), but not attended with very severe pain. The child was still-born. The history she gives is somewhat singular. She says, "on a Thursday" (about the time for her confinement), she was washing, and her back seemed to give away; she fell forward, her abdomen striking against a wash-board; she felt no pain from this accident—only a little discomfort in her lumbar region, which was increased when she would try to stand or move about. She said the child died on the Thursday night following this accident. When asked how

she knew when it died. She said, "I felt it give a strong flutter, and it never moved again." She gave birth to it on the Sunday night following its supposed death; there was a deep depression across its forehead, caused by the fall upon the wash-board.

She gave birth to her last child three years ago; this one was also still-born, but she does not know of any accident that caused its death. The labor was quite protracted. She says her pains began on a Monday, and the child was born Wednesday night. The pains were so intense she was thrown into convulsions, and after they passed off, she remained in a stupor until a day after the child was born; had cold sweats the whole night before her pains came on.

Applied for admittance into Charity Hospital to be operated on for vesico-vaginal fistula, (caused by birth of last child 3 years ago), April 5th, 1875. On examination the following condition was found present: About one-half of the vesico-vaginal septum was entirely gone, and through this fistula the mucous membrane of the anterior wall of the bladder protruded, forming a red tumor the size of an egg. The whole of the urine passed through the fistula into the vagina; none through the urethra. The dribbling was of course continuous. The protruded mucous membrane could be easily pushed back into the bladder. The womb was high up in the pelvis, and the os could barely be felt by digital examination, projecting into the bladder. Health otherwise good. She complains simply of the incontinence of urine, and its disgusting consequences.

April 13th, 1875. Prof. Logan operated this day. Before doing so he explained the nature of the case. He remarked that of course the operation was not one of choice, but of necessity. Fortunately the vast majority of vesico vaginal fistulæ are curable in the true sense of restoring the parts to their natural condition, and to their natural capacity for normal functional action. But we are often obliged in surgery to content ourselves with endeavoring to obviate the results of injuries which are in themselves irreparable. At any sacrifice of the functional capacity of the vagina this poor woman must be relieved of her dreadful infirmity, and the operation of kolpokleisis or closing up the vaginal canal entirely, first, as he believed, practiced by Prof. Simon, of Heidelberg, was the best that could be done for her. But what are the conditions which force us to this alternative? He would say, *mainly* two coincident circumstances, i. e., great

loss of parts with firm cicatricial adhesions binding down the adjacent tissues. Either of these conditions, singly, may be usually overcome. A vagina may be in great part reformed, provided there be not too much cicatricial tissue binding down the surrounding parts and impairing their elasticity; and, on the other hand, a great amount of cicatricial condensation around a fistula may be so overcome by preliminary stretching, incisions, etc., as to permit us at last to bring together the edges and close up a previously rigid opening, provided the latter do not involve too large a portion of the vaginal walls. But when we find excessive loss of parts accompanied with great surrounding cicatricial rigidity and firm adhesions, it not unfrequently happens that we are obliged to give up all hope of doing more than merely obviating the most distressing symptoms of the case. But to do this is often to do a very great deal. It is in this case to restore to a comfortable existence, one whose life has been for three years a burden to herself and all around her. We will then close up her vagina, and, permitting the womb to continue menstruating into the bladder, as it has been doing for the last three years, we will so confine both urine and menses as to subject them to the control of the sphincter vesicæ, to be evacuated at certain intervals under the control of the will. In doing this we confer—thanks to modern surgery—an inestimable blessing on one whose life has been rendered truly miserable.

Operation—April 13th, 1875. A circle of the vagina was vivified, the raw surface being about an inch in width, the outer margin of the same being about an inch within the genital orifice. This raw band was made wider, however, on each side, the additional paring being made on the external margin. Prof. Logan, in his description of the operation, laid special stress on the importance of this procedure for the following reason. As the vaginal walls are to be sewed together transversely—the anterior and the posterior walls being approximated—there is a tendency on each side towards a puckering at the extremities of the line of intended union. This puckering is apt to bring undenuded surfaces into apposition when the sutures are tightened. But if the raw surfaces be made wider as described, the angles of union of the anterior and posterior surfaces on each side are, so to speak, tapered off, gradually losing themselves in the area of widened denudation.

Twelve silver wire sutures, simply twisted together, were used

in the customary manner, and the parts were nicely approximated throughout.

The patient was cautioned to retain a prone or semi-prone position; she was kept under the influence of opium for four days, her bowels having been previously emptied by castor oil and an enema, and the urine was regularly drawn three or four times a day by Mr. Larcade, the ward student, to whose attentive care the success attained in the case was in a large measure due.

She had not a single unfavorable symptom, and at the end of ten days, when Prof. Logan removed the sutures, firm union was found to have taken place, except at a point a little to the left of the center, where an opening about the diameter of a lead pencil was found.

May 19th. Another operation was made to-day in order to close the little opening. Four sutures were used, and a complete and permanent success was achieved.

It was intended that her water should have been drawn as before, but this proved impossible as she was passing it herself every two hours or oftener. On the 9th day the sutures were removed; from about the 12th to the 20th day she suffered from some cystic irritation, and a little mucus was found in the urine.

June 15th. The relief from her distressing inconvenience is now perfect. She can hold her water for two or three hours at a time, and the retentive capacity of the bladder is daily improving.

VESICO-VAGINAL FISTULA—ONE OPERATION—CURE.

Reported by Mr. G. A. Wise.

Mrs. P., aged about 20; quite fat; had very prolonged labor about three months ago, without any medical attendance except towards the last, when a physician was called in and promptly terminated the labor with the forceps, by removing a dead child. This physician reports, that he found the head impacted in the pelvic cavity, and he supposed this condition may have obtained for many hours, as the waters had been lost the day before. It was not long after the delivery before the physician ascertained the existence of a vesico-vaginal fistula. He, some month or six weeks after, took Prof. Logan to the case, and requested him to operate for its cure. A detachment of the class was invited to attend as assistants, and the final examination and

operation was made Nov. 29th, 1874. A fistula of about ¾ of an inch in longitudinal, and an inch in transverse diameter, was found about midway on the vesico-vaginal septum. Its edges were easily approximated, showing no cicatricial contraction of consequence. The edges were pared in the ordinary manner, and the fistula was closed transversely with silver wire simply twisted. A hard rubber Sims self-retaining catheter was retained for two days, and then the water was drawn for three more days, after which time she was allowed to pass her urine in the semi-prone position as often as her desire prompted. She was kept bound up with opium for a week, and then had her lower bowels washed out with an enema. On the tenth day Prof. Logan removed the sutures, and perfect union was found to have occurred. She is now, six months after the operation, well and sound.

LITHOTOMY.

Reported by Mr. Henry Veazie, Hospital Student.

Charity Hospital, ward 23. George McK——, 23 years of age; born in New Orleans, La.; father Irish; mother German. He says that at the age of 5½ years he complained of pain in end of his penis, and that when he was urinating the water would sometimes suddenly stop flowing.

When six years old he went to Ireland; lived in Ireland for eleven years; had a very bad attack of sickness when he first arrived in Ireland; came back to New Orleans in 1869; has been living in New Orleans since 1869.

On the 29th of December, 1874, the pain in loins, back and penis became so intense that he could not work. This continued to increase as long as he worked or walked, but when he rested for a few days, it got better.

He applied for admission into the hospital, and was sent to Prof. S. M. Bemiss' ward. Prof. Bemiss examined him, and diagnosed a calculus in the bladder. He was sent by Prof. Bemiss, to Prof. Samuel Logan's ward.

Admitted into ward No. 23 on the 3d day of January, 1875.

Complained of a pain which would extend from loins into end of penis, then down the thighs.

Urine contained abundance of mucus, some pus, and a little blood.

General character of urine cloudy, with a heavy white deposit of phosphates, etc.

Prof. S. Logan examined him, and felt the calculus very distinctly situated in the lower back portion of bladder (patient on his back).

January 6th, 1875. Prof. Logan succeeded in catching hold of stone with a lithotrite. He could not get a good hold on it for reasons which will be understood hereafter (size of calculus prevented). He got off a few fragments; some of which came away with the instrument; but the marked cystic irritation did not permit of either frequent or prolonged efforts at lithotrity. "Urethral fever" was easily excited—even the preliminary examination for diagnostic purposes was followed in six or eight hours by a chill, succeeded by a fever. To meet this tendency, Prof. Logan ordered five grains of quinine three times a day, and ten grains immediately after the operation, in addition to the hypodermic injection of morphine. The professor called the attention of the students to the advisability of pursuing this plan as a general rule in all operations about the genito-urinary apparatus—more particularly in such cases as showed unusual sensitiveness under the manipulations. Sometimes it is advisable to give iron also; indeed, the quinine, opium and iron, may be combined in the form of a pill composed of two grains of quinine, one of iron by hydrogen, and a quarter of a grain of powdered opium, one of which may be taken every four hours for twenty-four hours after the operation.

The effort at lithotrity was repeated three times, but without any satisfactory results, and each attempt was followed by an increase of cystic irritation. Only a few scales, evidently from a large phosphatic calculus, could be procured. At none of the attempts except the first could such a grasp of the stone be effected as would enable him to accurately measure its diameter.

The question then presented itself, whether it was not advisable to resort to lithotomy. The professor gave a resumé of the relative advantages of the two operations, i. e., lithotrity and lithotomy, and summed up the subject by saying that, as a general rule, lithotomy was best in the young, and lithotrity in the old. In the case before us, we might choose either operation. The milder proceeding having been tried first, and giving unsatisfactory results—on the contrary, seemingly to aggravate the existing tendency to inflammatory trouble—it becomes neces-

sary to resort to the more severe one. At last the cystic irritation became so great that Prof. Logan ordered a suppository of a grain and a half of morphine with half a grain of extract of belladonna to be inserted every night. This seemed to procure better rest, and was continued to the date of the operation.

Operation.—Mar. 13th, 1875, the usual preparatory measures had been adopted, namely, the bowels had been acted on freely by oil administered the day before, and a large enema had been given in the morning. He could retain his urine but for a very short time, and therefore his bladder was filled moderately by means of a catheter and syringe. The usual lateral method was adopted, the operation taking but a very few moments, and a very large phosphatic stone was cautiously extracted. It was shaped like an old fashioned watch, weighed two ounces and five drachms, and measured in its longest circumference 5⅞ of an inch, and in its shortest 5½. The bladder was carefully washed out, and the patient was simply placed in bed, with clothes between his legs to catch the urine, no tube being placed in the wound, Prof. Logan expressing the opinion that such an instrument would only prove an additional source of irritation.

After the operation the patient's whole expression changed. The distressed appearance he had so long exhibited was replaced by a pleasant and hopeful countenance, and he expressed himself as if relieved of a great load, which indeed was literally the case. His recovery was prompt, and interrupted only by one attack of chill and fever, which came on the third day, and created a little uneasiness for a time. It only proved, however, to be similar to the attacks he had frequently had while lithotrity was being tried. He was kept under the quinine, iron and opium pills for a week, at the end of which time he had a dose of oil, and was allowed to sit up a little each day. In three weeks' time nearly all the urine passed per vias naturales, and only a minute fistula remained, which soon closed up. The patient rapidly regained his general health, and is now, July 3d, a robust, hearty man.

RESECTION AT WRIST-ELBOW JOINT,

Reported by Mr. A. Gayden, Resident Student at Charity Hospital.

W. F., male, colored, aged 23; common laborer—chiefly on steamboats; says he contracted syphilis about two years ago, but was not

treated for it till about nine months ago, when he was admitted into the hospital for that purpose. About six months after the primary sore had healed, a scaly, non-suppurating eruption made its appearance on the lower portion of both legs, but nowhere else on the person. About this time he also experienced a stiffness, first of the ankle joints and then of the knee joints. This stiffness lasted for some time, interfering much with locomotion. He next had a feeling of stiffness in both elbow joints. Under treatment the eruption was healed, and the articular stiffness left all the joints affected except that of the right elbow. This remained useless and painful—indeed, became worse and worse. A large abscess formed immediately below the joint, which, when opened, discharged very freely, leaving a fistula leading to dead bone. He had another abscess on the forehead, caused from a blow, he thought, but which remained open a long time, and also another over the side of the lower jaw, from which afterwards came some fragments of dead bone. Both of these last mentioned troubles healed up under anti-syphilitic treatment, but the elbow continued to give more and more trouble. Extensive purulent infiltration of the soft parts, accompanied with great pain and swelling, occurred all around the joint, and a number of fistulæ formed, running to dead bone on all sides.

January 23d, 1875. Was taken into the amphitheatre and operated on by Prof. Logan, before the class, to-day. The patient is emaciated and worn out with pain and want of rest; the elbow looks like an immense tumor, having lost all characteristic shape. The part is honey-combed with fistulæ, which discharge almost incessantly a sanious fluid of a horrible odor. In his remarks about the case, Prof. Logan insisted on the marked difference—so far as prognosis is concerned—in such cases of caries and necrosis recurring in the upper and lower extremities. The conservative surgeon can hope for far better results, other things being equal, in surgical procedures practiced on the arm and fore arm than on the thigh and leg.

Again, in forming our prognosis, there is another circumstance which bears markedly on the result, and which must enter into our calculations. There are three chief diatheses which meet the surgeon on every side, and complicate his cases—the scrofulous, the rheumatic, and the syphilitic. The rheumatic seldom leads to destructive processes requiring the removal of parts. The tendency of inflammatory processes under this diathesis is

to the production of deformities, rigidities of joints, etc., and when obliged to operate on a patient who is the subject of such a diathesis, the surgeon need not fear that the constitutional tendency will materially interfere with the healing process. It is not so, however, in either the scrofulous or the syphilitic patient. In these cases, the inflammatory process has a marked tendency towards local death in the form of suppuration, caries, necrosis, etc. Our wards are full of cases illustrating these statements. After operating on a scrofulous or syphilitic patient, the surgeon has to fear that the inherent tendency may reappear after the operation, even if it has been checked by treatment. In this respect, the scrofulous and the syphilitic diatheses are similar, but they differ very decidedly in one particular, and that a very important one. The syphilitic diathesis is, as a rule, but not invariably, more under control than the scrofulous. It sometimes surprises us to see how much good can be effected by medication in syphilitic affections, even when, seemingly, we are dealing only with a local trouble. Never forget this fact. It will bear application to medical as well as surgical cases, and will sometimes enable you to accomplish most happy results. The syphilitic diathesis, in greater or less intensity, either acquired or inherited, prevails to a much greater extent than you would suppose. Take my advice, and look out for it in all grades and classes of patients. Detect it in a given case, and you will often find you have discovered the key of success when others have failed to attain it.

But the scrofulous diathesis is generally far less amenable to control, and exercises a corresponding deleterious influence over the best devised and most skillfully executed operation. Bad, therefore, as this case appears, we may hope for a pretty fair success. Even if the elbow remain stiff, we will have accomplished a great benefit in saving the limb from amputation, which would otherwise soon become necessary on account of the exhausting effect this rotting mass of dead bone is exerting on the vitality of the patient.

As illustrating the bearing of the scrofulous diathesis on surgical cases, I may point you to the case of resection of the wrist joint operated on by me some two and a half months ago.* You

* See the case of C. E. A., further on in this paper.

will recollect that the patient showed other evidences of scrofula besides the scrofulous caries of the wrist. He had numerous white scars about the neck, and a chronic inflammation of the elbow joint. The wound of the operation has not yet closed, nor is it likely that it ever will, for notwithstanding cod-liver oil, tonics, etc., the patient is now dying of marasmus, with probable scrofulous disease of some internal organ. The disease of the elbow has also become more extensive.

After thus explaining the case, Prof. Logan resected the joint, which was found much diseased—a mere mass of stinking pus and crumbling carious bone. At least two inches of the humerus and about one of the radius, with a corresponding portion of the ulna, had to be removed. Esmarch's bandage was found very useful, rendering the dissection perfectly bloodless. The H shaped plan of incision was adopted, as best suited to the case on account of the great swelling of all the parts. A few vessels had to be twisted, but none required ligature. The parts were thoroughly washed with a two per cent. solution of carbolic acid, and afterwards dressed with carbolic oil—one part to eight. The limb was placed on a splint at nearly a right angle—the most useful position in case of anchylosis. The case not belonging to Prof. Logan's ward, was then turned over to the care of Mr. A. C. Wilcox, the Resident Student attached to the ward from which he had been brought for operation by Prof. L. Instructions were given that the wound should be kept as clean as possible by careful syringing with the carbolized water as often as necessary to remove the excess of suppuration, which it was to be expected would be great and prolonged on account of the very unhealthy condition of all the tissues. It was also advised that the anti-syphilitic treatment, with iodide of potassium combined with a bitter tonic, should be continued, and that the diet should be of the most nutritious attainable.

The incision healed in the greater portion of its extent quite promptly, while an almost immediate and great improvement took place in the general health and strength of the patient. The wound, however, has never entirely healed up, a few fistulæ remaining; and it may be that some pieces of dead bone will yet come off or require removal. His general health, however, is now very good, and he feels no pain about the parts, and is highly pleased with the result of the operation. But little move-

ment obtains at the position of the joint. It may be that continuous passive motion may yet bring it about to some extent.

CASE OF RESECTION OF WRIST JOINT.

J. P.: white; native of Italy; aged 30; hearty; in New Orleans since a baby.

In October, 1870, a brick wall on which he was at work fell with him, and he received an injury to the wrist. Great inflammation followed, resulting finally in necrosis and caries of the end of the radius.

Admitted to Charity Hospital January 9th, 1875.

The hand is bent at the wrist towards the radial border to precisely a right angle, the ulna projected under the skin. Considerable œdema occupies the vicinity of the wrist joint, and a number of small ulcers and fistulæ are located around the part. A probe readily finds rough bone on the radial border. There is considerable pain in the limb, and the hand is perfectly useless, having been so since the injury. It has never ceased running since December 31st, 1871.

Prof. Logan, in lecturing on the case, took for granted that an unrecognized fracture of the end of the radius must have been at the bottom of all the trouble. These fractures, even when unskillfully treated, usually unite with ease; but if no retentive apparatus be applied, the constant movement of the parts will often result in just such a condition of affairs as we see before us. He then made a straight incision over the back of the radius, the use of Esmarch's bandage enabling him readily to avoid injuring any of the extensor tendons. The necrosed end of the radius was sawed off, and then a similar incision was made over the ulna, and the end of that bone was removed on a line opposite the divided extremity of the radius. No ligatures were required. The hand was readily brought into a straight position and retained there by means of an anterior splint. The wound promptly healed up, and a very useful degree of motion now (May 20th) obtains at the site of the new joint. The hand has remained nearly straight, and is of great service to him. For the first time since the receipt of the injury near five years ago, he can resume his occupation of peddling along the levee, by which means he supports his family.

RESECTION OF WRIST JOINT.

Reported by Mr. F. de Roaldes, Resident Student of Charity Hospital.

C. E. A., 26 years of age, colored, private U. S. A., entered the Charity Hospital, ward 32, on July 11th, 1873. The patient shows upon examination evidences of marked scrofulous diathesis. By looking at the neck, we find numerous cicatrices of ulcerated glands. The radio-carpal articulation and the elbow joint of the right arm are both affected with chronic arthritis. During eighteen months the patient was, without any beneficial result, subjected to a thorough constitutional treatment, such as cod-liver oil, tonics, etc.

On December 1st, 1874, he was sent to Prof. Logan's clinic to be operated upon.

The patient presented at this time a fistulous opening on the anterior portion of the radius, about half an inch above the wrist joint. The necrosed bone could be easily felt with the probe. Several fistulous tracks existed above the elbow, the humerus nevertheless not being as extensively denuded of periosteum as the radius.

The resection of the lower end of the radius was immediately performed by Prof. Logan, who left the elbow to be operated on at a further time.

A month after the operation the wound had entirely closed with the exception of a fistulous track, which after probing showed the ulna to be diseased. The head of this bone was consequently resected. From this time the wound presented a very pale and languid appearance, the granulations springing very slowly. The condition of the elbow joint was meanwhile becoming worse, and the patient's general condition was soon so depressed that on February 10th, 1875, he died in a state of marasmus.

At the necropsy the organs were found sound with the exception of the kidneys, which presented several cysts, one of them having attained the size of a pigeon's egg. The cortical portion was at that point nearly destroyed: it was reduced to a thin membrane, which prevented the bursting of the cyst.

The inferior extremity of the humerus was extensively diseased. Granulations could be seen on the resected portions of the radius and of the ulna.

Strange to say, the patient never showed any symptoms of renal disease.

TRAUMATIC NEURALGIA · EXCISION OF ONE INCH OF EACH ULNA NERVE.

Reported by Mr. G. A. Wise.

John McCabe, native of New York; white; aged 37; blacksmith; been living in New Orleans 18 years; hearty all his life; was wounded on 14th of September, 1874, in both fore arms, the ball fracturing both ulnæ about the centre; was treated in Charity Hospital for the fractures till they both finally healed up with tolerably good union, leaving the flexor muscles of the ulnar half of both fore arms bound down with tight adhesions, producing contraction of the ring and little finger of right hand, and ring and middle finger of left hand. Within five weeks after the healing severe neuralgia, corresponding precisely to the course and distribution of both ulnar nerves, began. The agony was very great from its commencement, and seemed to be increasing daily.

February 28th, 1875. Presented himself to the surgical clinic this day for relief with a distressed and haggard appearance, pale and thin from pain and loss of sleep; says he is in constant torture, which has never ceased from the time it commenced; excessive hyperæsthesia on the surface of the ulnar half of both forearms and corresponding portion of ring and middle finger; prays that something be done for his relief.

Prof. Logan excised about one inch of each ulnar nerve just above the point where it passes behind the joint, between the internal condyle of the humerus and the olecranon process of the ulna.

Immediate relief was experienced. This continued for five weeks, when he began to suffer from a burning sensation located only in the centre of the metacarpo-phalangeal and the proximal inter-phalangeal joints of each little finger, although the anæsthesia produced by the operation continued so perfect that a pin could be forced through the fingers in the immediate vicinity of the pain without the least sensation being produced by its presence. This pain was precisely of the same character, degree and location on each hand. It gradually grew worse, till it became a source of considerable annoy-

ance, though never torturing him as that he suffered before the operation. The patient was placed under the use of quinine (grs. 2), reduced iron (grs. 2 ½), and extract belladonna (gr. 1-5), three times a day. He was also subjected to about 8 or 10 applications of the interrupted current passed through the painful spots, under the direction of Prof. Joseph Jones. This sometimes gave him relief, but not of a permanent character. The pain, however, gradually changed its character, and slowly lessened in degree. At present (July 6th), he has only a peculiar "*drawing*" sensation in the metacarpo-phalangeal joints alone, which gives him little or no trouble. We cannot yet say whether the relief will be permanent.

LEPROSY.—SYN:—ELEPHANTIASIS GRÆCORUM; LEPROSY OF THE EAST; TRUE LEPROSY; LEPRA TUBERCULOSA; SPEDALSKHED, MAL DE ST. LAZAIRE, etc.

BY JOHN WALTON ROSS, M.D.

Passed Assistant Surgeon United States Navy.

During a recent four months' visit to the Hawaiian (Sandwich) Islands, I had, through the courtesy of Dr. Hoffmann, who for many years has had charge of the leper institutions of the kingdom, and Dr. Trousseau, Physician to the Royal Board of Health, an opportunity to see a good deal of this most interesting disease. Excellent treatises have been written upon the subject by MM. Danielssen and Boeck, and Drs. Simpson and Webster. The 107 reports elicited from that able body of men, the medical officers of India, by interrogations drawn up by the Royal College of Physicians, London, are very valuable; an analysis of them by Dr. Macnamara, of Calcutta, is probably the best article ever prepared upon the subject of leprosy.

History and Habitat.—Egyptian, Hindoo, Chinese, Hebrew, Arabian, Grecian, and Roman records trace leprosy from the remotest antiquity down to the middle ages. It is frequently stated that it was introduced into Europe by those returning from the Crusades, but that such was not the case is proved by the fact that the disease was far from uncommon in Europe as

early as the tenth century, laws having existed in England at that period making it a sufficient cause for divorce. After the Crusade, leprosy had increased to such an alarming extent throughout Europe, that innumerable leper hospitals—prisons, in reality—were established, and in them immured for life, after the most solemn performance of their burial rites, all those afflicted with the disease or anything resembling it. Michaud states there were more than 2000 of these lazar-houses in France alone. There were 112 in England and Scotland. Wherever this rigorous course was pursued, the disease has almost entirely disappeared, while in those countries where nothing was done it has increased. Royalty seems to have conferred no immunity from leprosy, several kings of England and Scotland having succumbed to it—among them King Robert the Bruce. Leprosy is now endemic in Norway, Sweden, Spain, Greece, Asia Minor, China, India, and most of the islands of the Pacific. It is also not uncommon in Mexico, the West Indies, Russia, Tartary, and many other parts of the old and new worlds.

PATHOLOGY AND ETIOLOGY.—Leprosy is a disease of nutrition, and possessed of as perfect an individuality as small-pox or syphilis. Of its *origin* nothing whatever is known, To my mind the evidence is conclusive that it is *propagated* by inheritance and contagion, and probably in no other way. That it is hereditary is the firm belief of the vast majority of the best observers, both ancient and modern, and of the natives of those countries in which it prevails. In saying that leprosy is *contagious*, I mean that it is *inoculable*, and that to produce the disease in a healthy individual, it is necessary to *introduce some of the discharge from a leprous sore into the blood*. No attempts have been made to ascertain whether the disease is inoculable through the blood or secretions of lepers. To elucidate this point, the coöperation of a bold philanthropist like the Pacha of Egypt, who placed condemned criminals at the disposal of a physician to be inoculated with the virus of the plague, is needed. Leprosy is probably contagious and hereditary exactly as is syphilis. Carrying the parallel between these diseases still further, leprosy is in the vast majority of cases contracted during sexual intercourse. Lepers have almost invariably abrasions and ulcerations of the genital organs, and the sexual appetite is generally increased until toward the close of the disease. A recent letter

from a prominent member of the Royal Hawaiian Board of Health, informs me that 3 of the 4 Caucasians in the leper colony of Malakai confess that they acquired the disease during sexual congress, and that the evidence was almost positive that the 4th came by it in the same way. I have never seen or heard of a case of leprosy, not inherited, for which inoculation was not the most natural and probable cause. It is believed among the Hawaiians that many contract the disease by smoking pipes fresh from the mouths of lepers. They -the Hawaiians—are very fond of smoking together, passing their pipes from mouth to mouth. The children of lepers are generally delicate and poorly framed, but sometimes show no signs of the taint before puberty. If brought up under proper hygienic influences, the appearance of the disease is often delayed to middle or advanced life, and in some cases does not show itself at all. When it skips the first generation in this way, it may reappear in the third or fourth. The susceptibility to leprosy is by no means so general as to syphilis, many persons placing themselves under the most favorable circumstances for its inception escaping. If such individuals are ever afterward reduced in health by exhausting diseases, etc., they are exceedingly apt to develope the disease. After the entrance of the virus of leprosy into the system, the incubation is sometimes very long—in this resembling that of hydrophobia. Many influences, hygienic, climatic, dietetic, etc., have been advanced as causes of leprosy, but its occurrence at the present day among human beings in every part of the globe, at all elevations above the level of the sea, both inland and on the seaboard, among people of all customs and classes, proves that it must depend upon some cause capable of existing and operating in all climates and under all circumstances. Dr. Hoffman, who has seen more of leprosy than any other medical man in the Hawaiian Islands, believes that syphilis has the power to develope the susceptibility to the disease in persons who do not possess it. Leprosy may occur at any period of life from infancy to old age, but generally makes its appearance between the years of 20 and 50. It is more common among males than females, in the proportion of about 2 to 1.

Morbid Anatomy.—According to Danielssen and Boeck, in the first stage of leprosy the true skin is found infiltrated with an albuminous material containing numerous adherent whitish

granules, some fat, and a few deformed red blood corpuscles. In the second stage, where ulceration and destruction of tissue have occurred, there is seen only a softened amorphous mass, and remnants of cells and nuclei. The exudation is found in the skin, the mucous membrances, the nerve-trunks, and spinal cord, where, by cell-proliferation, it gradually produces enough pressure to prevent the transmission of blood and nerve-force—when anæsthesia, ulceration and death of the parts involved result. Dr. Carter, Surgeon of the Jamsitjee Jeejeebhoy Hospital, Bombay, who has more recently investigated this part of the subject, says that the mischief *begins* in the nerve-trunks, and ascribes all the phenomena of the disease to interference with innervation. This view is proved not to be correct by the frequent absence of all symptoms referrable to the nervous system throughout the whole course of the disease.

Clinical history.—The following is a description of leprosy as it exists in the Hawaiian Islands, and is, as far as possible, based upon my own personal observations of the disease. It may naturally be divided into three stages, as follows: 1, the stage of invasion; 2, the tubercular and anæsthetic stage; and 3, the stage of mutilation.

1. *The invasion of leprosy* is generally very gradual, exceptionally preceded by well marked premonitory symptoms, such as chilliness, lassitude, loss of appetite, general depression, feverishness, and a sensation of heaviness, called by the natives "kaumaha," in the parts to be first attacked. These symptoms are said by Dr. Hoffman to be "vomiting in the majority of cases, but occur often enough to be highly characteristic." Soon the integument of the face, the part generally first attacked, becomes dry, harsh, rough, slightly thickened, and less flexible, giving to the features a strangely stony expression. The deeper structures of the integument become reddened and darkened, to which the dried epidermis gives a grayish tinge which is very striking. Dr. Trousseau attaches much significance to this "teinte argentée." Lepers in this stage of the disease may transmit it to their offspring, but there being no danger of contagion from them they are allowed to go at large. Dr. McKibben, Surgeon to the Queen's Hospital at Honolulu, to which no leper is admitted, showed me a boy and girl from whom the above description is taken, saying that he expected to "turn them over to the Kalihi Hospital before

long." Lepers may remain in this condition for years, and even for life, with little or no change; but if attacked by syphilis, or reduced in any way to a low state of health, the second stage of the disease supervenes. The duration of the first stage is generally from 5 to 10 years.

2. *The stage of tuberculation and anæsthesia* commences sometimes abruptly, none of the symptoms of the first stage having shown themselves. It generally begins with a heavy, dull, aching pain in the part affected; there now appear puffiness under the eyes, and a thickening of the integument covering the lower eyelids, cheeks, lobes of the ears, and also nose; livid red spots make their appearance on these parts, and small knobs or tubercles, of the same color; these spots and tubercles increase in size, becoming darker and shiny; the diseased integument is greatly hypertrophied, thrown into folds and ridges, and, sometimes, devoid of sensibility, so that it may be cut or burned without giving rise to any pain. About this time occurs the "irresistible and fixed turning inward and upward of the little fingers," mentioned by Surgeon Payne, U. S. N. I saw two instances of this, and in both there was complete anæsthesia of the parts supplied by the ulnar nerve. The disease involves the whole thickness of the integument and the subcutaneous cellular tissue, destroying the sebaceous glands and the sweat and hair follicles, causing the hair to become white and fall out. The enlarged lividly-discolored cheeks, lips, nose and eyelids, with the loss of the lashes and eyebrows, give to the face a most hideous unhuman appearance, altogether indescribable. No sight has ever given me so much pain as the first case of this kind shown me by Dr. Trousseau. The skin covering the hands and feet is also hypertrophied, discolored, tuberculated, and, sometimes, devoid of sensibility, as are also, in many cases, the mucous membranes. There is generally a firm, symmetrical contraction of the flexor muscles of the leg and forearm, giving to the hands a very striking resemblance to the claws of a bird. In many well marked cases I found the sensibility normal over all parts of the affected integument, and my belief is that anæsthesia is still rarer on the mucous membranes. Sooner or later ulceration takes place in the hypertrophied tissues, generally beginning in the integument of the feet, and extending to the hands, face, and mucous membranes, producing conjunctivitis, coryza, huskiness or extinction of the voice, cough, etc. The

discharge from the ulcers is exceedingly and peculiarly offensive. Strange at it may seem, up to this time the Hawaiian leper presents almost no constitutional symptoms. Dr. Hoffmann says: "During the progress of the disease the pulse is regular, the appetite good, and no internal symptoms appear."

3. *The stage of mutilation* must be disposed of in a few words, this article having grown so much longer than at first intended. No description can convey a full and accurate idea of its effects; to realize its horrors, its unfortunate victims must be seen. Its most odious features are the mutilations it causes of the fingers and toes, removing these, and in many cases the whole of the hands from the wrists, and the feet from the ankles the latter producing very much the same result as Syme's or Chopart's operation. The authorities cited at the commencement of this article describe the mutilation as resulting from a "dropping off" of the fingers, toes, hands and feet; on the Hawaiian Islands it is brought about by a process of interstitial absorption. In many cases I saw nails on hands and feet which had no fingers or toes, the bones, tendons, ligaments, and muscles having disappeared, leaving the integument and nails. Not seeing this mentioned by any observer in any other part of the world, I conclude that it is peculiar to the Hawaiian Islands. Caries and necrosis of the bones, with their results, oftenest observed about the nose, and destructive inflammation of the eyes, frequently supervene. A peculiar symptom is often seen in advanced cases, viz., a large, painless bleb, generally under the inner malleolus, which finally breaks and discloses deep ulceration beneath. In addition to the hideous appearance of the leper during this stage, he exhales an almost intolerable odor, which makes him still more an object of horror and commiseration.

In every description of leprosy as seen outside of the Hawaiian Islands, which has fallen under my notice, the disease is divided into two varieties, the tubercular and the anæsthetic; they are spoken of as generally blended, but as not infrequently distinct, the distinction only occurring at the second stage, the first and third stages being the same. This seems to me to be merely a temporary and occasional divergence of the disease at a certain point, and not sufficient to justify its division into two distinct varieties. Still less should this be done in describing leprosy as it exists in the Hawaiian Islands, where anæsthesia never exists

without tuberculation, and where, in many cases which had gone beyond the first stage, I found no anæsthesia whatever. Dr. Hoffmann says: "In my first report, I considered anæsthesia as an almost necessary symptom of leprosy, but my opinion upon that point has not been verified by increased experience. I find that in a number of cases it does not exist at all."

Diagnosis.—The features of leprosy are so strongly marked that there is little danger of its being mistaken for any other disease. As has been shown, there are several points of resemblance between it and syphilis. The two diseases are, however, widely different as regards symptoms, course and results. An unquestionable proof of their non-identity is, that a leper is fully as susceptible to syphilis as is a healthy man. They may, and often do, coexist in the same individual. I saw many illustrations of this, the syphilis disappearing under treatment while the leprosy was unaffected, or went steadily on from bad to worse. In the face of these facts, it is to me inexplicable that some writers upon the subject consider leprosy and syphilis identical. The former disease existed in India hundreds of years before syphilis was ever heard of. From the similarity of their two most important synonyms—elephantiasis Arabum, and elephantiasis Græcorum, respectively—Barbadoes leg and leprosy have for a long time been very generally confounded. The former disease is, however, a local hypertrophy of the skin and subcutaneous areolar tissue, and, except in name, bears little or no resemblance to leprosy. To make "confusion worse confounded," a species of skin disease, classed by Willan under the order Squamæ, has been called leprosy, with which it has no more relation, however, than leprosy has with scabies.

Prognosis.—Since the age of miracles, no well authenticated recovery from leprosy has ever occurred. A leper, in otherwise good health, and able to surround himself with proper hygienic influences, may attain a good old age, and have the satisfaction of dying of some less loathsome disease; but leprosy, once established, never yields its place, and unless cheated of its prey by some more active destroyer, always causes death.

Duration and Termination.—An uncomplicated case of leprosy attains its maximum in about 10 years from its beginning,

and lasts 25 or 30 years. The great majority of lepers die much earlier than this however, syphilis being frequently the precipitating cause of death among the Hawaiians. Sometimes the disease runs a comparatively acute course, destroying life in from 2 to 5 years. This is exceedingly rare. Death is generally due to diarrhœa, dysentery, or laryngitis, resulting from involvement of the mucous membranes.

Treatment.—No human skill can cure leprosy. Mild cases may sometimes be arrested in the first stage by strict attention to the general health, removal of all depressing influences, generous diet, cleanliness, and exercise in the open air. Of all drugs arsenic has been found the most useful. Dr. Trousseau showed me several not very pronounced cases, which he was holding in check by this medicine. He several times suspended its use for a short while, aggravation of the symptoms always resulting. Mercury has achieved some reputation in the treatment of leprosy, solely, I believe, by its influence upon the syphilis with which it is so often associated. Hydrocotyle Asiatica has been highly spoken of by some authorities, but its value seems apochryphal.

Complete isolation of the disease is then the only measure upon which any reliance can be placed. There is no reason to suppose that it would prove less efficacious now than it did in the middle ages. Rigid segregation of all lepers throughout the whole earth would, in a few generations, free mankind from one of its oldest, most horrible, and most implacable enemies.

Leprosy in the Hawaiian (Sandwich) Islands.

The natives think that the disease was introduced among them by the Chinese about 25 years ago, and have hence named it "mai pake" (Chinese disease). Dr. Hillebrand, who has lived in the Islands since 1853, rather inclines to this belief. Dr. Hoffmann thinks that leprosy has existed in the Islands for at least 40 years, an undoubted case having been seen near Honolulu in 1843. However this may be, the disease was exceedingly rare until about 15 years ago, when it was found to have increased very greatly. This is accounted for by Dr. Hoffmann in this wise: "During the year 1853 the Islands were visited by the small-pox, which raged fearfully for nearly five months. The natives were nearly all unprotected by vaccination, but soon after

the outbreak of the epidemic, this method to arrest the disease was resorted to. Vaccine virus being very scarce, almost unattainable, a great many of the white residents, with the best intentions, vaccinated indiscriminately the diseased and healthy ones from the virus of those suffering from syphilitic and other diseases, and probably leprosy. Five years from that time the disease was recognized by medical men, and ever since the number of lepers has increased at a rapid rate."

In the year 1865 leprosy had assumed such formidable proportions that the Government became seriously alarmed. The legislature appropriated the comparatively large sum of $30,000 for the establishment of a secluded leper colony on the little island of Malakai, about 60 miles distant from Honolulu, and a law was enacted that all lepers should be arrested, adjudged civilly dead, and sent to this place to be isolated for life.

The locality selected seems to have been expressly designed for the purpose. It is a large, beautiful, fertile valley, surrounded on three sides by the ocean, with a precipice 2000 feet high at its back.

Nature and the Hawaiian Government have done everything possible to make tolerable the fate of the poor wretches sent to this place to die. They are provided with small farms, upon which they are able with little or no labor to raise abundance of fruits and vegetables, for which they find ready sale, and are supplied with plenty of good food, clothing, etc., by the Board of Health. They have their horses, without which no Hawaiian can live long, and their climate being probably the finest in the world, they are happy and contented so long as they are able to go about. They give way to the most heartrending manifestations of grief when first arrested as lepers. There is nothing the Hawaiians enjoy so much as mourning. Wailing they have carried to the highest perfection. When a leper is sentenced to transportation to Malakai, he and his family and friends luxuriate in their sorrow until the parting is over, when they seem to feel better and soon are all smiles again. When a leper at Malakai becomes helpless he is put in the hospital, a large airy pavilion, where he is well attended, receiving extra supplies from the Board of Health as long as he lives—generally a very short time. Among the inhabitants of this "City of the Doomed" are four white men—an American, an Englishman, a Frenchman,

and a German; and six Chinamen. There are two churches in the colony, the one Protestant, with a native pastor, the other Catholic, with a young French Priest. They have also a post-office, and a store where articles are sold at very reasonable rates. Since the establishment of the leper settlement on Malakai, January 6th, 1866, 1120 cases, all told, have been sent there; 810 of these are still living, 380 having died. There are still some lepers secreted on the Islands, others in whom the disease is not fully pronounced, and some in the detention Hospital at Kalihi (to be presently described); so that we may fairly estimate that of the 52,000 inhabitants of the Hawaiian Islands, 2 per cent. are lepers. Of those received at Malakai, 764 were males and 426 females; among them are about 50 children, between the ages of 5 and 14. No children have ever been born in the colony, confirmed lepers being always sterile.

At Kalihi, on the Island of Oahu, near Honolulu, there is a detention hospital, consisting of two long pavilions with the necessary out-houses, where those suspected of being lepers are kept, when first arrested, under the practical eye and skillful treatment of Dr. Trousseau, until he is satisfied as to the nature of their disease. The number of patients here necessarily varies very greatly. There is great unhappiness among the inmates of this hospital, the dread uncertainty seeming harder to bear than burial at Malakai. During my stay at Honolulu, one of these patients attempted and came very near taking the life of Dr. Trousseau, upon hearing his doom pronounced.

In spite of these humane and admirable arrangements for rooting out leprosy in the Islands, the disease has gone on steadily to increase from a proportion, in 1866, of 1 leper to every 250 inhabitants to 1 in 50 at the present time, March, 1875. The reason for this is that Kamehaha V, who ruled the Hawaiian kingdom from 1863 to 1873 with almost despotic sway, himself a leper, prevented the thorough enforcement of the laws. After his death, not from leprosy, several of the worst cases of the disease which it was my fortune to see were from among his retainers. They had been secreted for years around the palace, serving as foci of contagion. Since the death of this "Last of the Kamehaha's," the laws upon leprosy have been vigorously enforced, and there is every reason to hope that in a few years this scourge will depart from the "Paradise of the Pacific."

ON THE MEDICAL TREATMENT OF NATURAL LABOR AND CHLOROFORM AS A SPECIFIC, OR THE ART OF ALLEVIATING PAINS DURING PARTURITION.

BY J. C. FAGET, D.M.P.

"It is the office of the Physician not only to restore health, but to mitigate pain and dolor."
—Bacon.

It is generally true that all animal functions, in a physiological state, are accomplished without pain; and the fact of their being painful shows that they have become pathological. Hence working to sooth and shorten pains during confinement is endeavoring to bring it to the state of a physiological function, and performing a medical duty.

Art being powerless in allaying labor pains, is the only reason why they have been so courageously borne by the woman, and so readily abandoned to nature by the physician. In fact that inability has been the cause of the most intense suffering to which humanity is doomed, being considered as physiological. Some have even gone so far as to regard them as necessary!

In reality the pains were unavoidable and inseparable from the last act of the great function of generation; and, as soon as they could be overcome, it was ascertained that far from being necessary, they were noxious. The use of anæsthetics in obstetrics has actually aided in analysing the phenomena of labor and separating its physiological and necessary, from its pathological and contingent phases. Now chloroform only destroys the latter, and does not affect the contractions of the womb.

This wonderful agent, which thus converts parturition into a physiological function, really deserves to be called the specific remedy against labor pains. It takes the precedence over ether, because it acts more readily, and is more transient in its effects; thus allowing the accoucheur the facility of following the pains, and administering the anæsthetic, as it were, with intermissions.

Chloroform has now been experimented with at the child-bed for over one-fourth of a century, and it seems time that we should review the knowledge which has resulted from this special clinical medicine. During the first twenty years of my practice in midwifery, I have abandoned labor to nature, while during the last ten years I have submitted such cases to active treatment

by chloroform; and I shall in this paper consider the advantages which I have found in the latter practice.

The honor of first using anæsthetics, and especially chloroform in obstetrics, belongs to Simpson, of Edinburgh. It was natural that the services derived from anæsthesia in surgery, should lead to its use in midwifery. And, from the moment that the great advantages of general anæsthesia to both the patient and operator were known, there was reason to apply it in cases of dystocia, or morbid labor, in which the accoucheur becomes a surgeon, intervening either with the hand or instruments.

It is thus that Simpson would put his patients in a state of insensibility when he had to apply forceps, or perform version; and the results were most satisfactory; and now he observed two facts, the consequences of which were of great value:

1st. "In all of them the uterine contractions continued as regular in their occurrence and duration, after the state of anæsthesia had been induced, as before anæsthesia was begun." (p. 524.)

2d. "The state of anæsthesia did not seem to be injurious to the child." (p. 560.)

After establishing the truth of these facts, he tried anæsthesia in normal labor, first with ether (February, 1847), and chloroform (November, 1847), and with the same complete satisfaction in both instances.

But Simpson was more of a surgeon than an accoucheur, and consequently behaved in normal labor as he would in a case of surgical operation, exhibiting the anæsthetic at once at full dose, as if an amputation had to be performed. So he produced complete anæsthesia in all cases, even in natural labor. No doubt he soon found out that it was unnecessary to resort to anæsthesia in normal labor to such a degree as is required in operations generally, and in *obstetrical operations* more especially. But I have reason to believe that he remained in the habit of giving full doses *abruptè*, and as it were, *uno haustu*, even in ordinary accouchement.

On this subject we read, at page 3 of the "Treatise on Etherization in Child-birth," by Prof. Channing, of Boston: "Of the two methods recommended in midwifery, the one by Prof. Simpson, which directs so much of the anæsthetic to be used, and after such a manner as shall in the shortest time produce the fullest effects, and the other, recommended by observers

here, in the same practice, which seeks its object by a less quantity, and that moderately administered—I think of these the latter is decidedly to be preferred."

In the last and most intense pains of ordinary accouchement we would not hesitate to follow Simpson's method rather than Channing's; and being called upon to assist a poor woman struggling in the last throes of confinement, we should endeavor to put her as speedily as possible in a state of "surgical" anæsthesia. But such anæsthesia is admissible only for a short time; whilst labor is sometimes protracted. In primipara, for instance, it may continue nights and days; and, in such cases how could we help striving to ease such pains at once if possible, and as long as practicable.

Wishing to furnish a woman with relief as soon as labor pains commence, especially when they are expected to last several hours, is equal to feeling the necessity of medical treatment in child-birth. First comes the part of the nurse, hip-baths, enemata, general baths, vaginal injections, inward and outward anointments, frictions over the lumbar regions, etc., which often may relieve, and even prove sufficient in cases of normal labor, as it did for ages—*natura medicatrix* taking charge of the remainder.

But how numerous are cases in which pains are so intense, and continue so long, that to abstain from relieving or shortening them when practicable, would be worse than indifference—it would be imprudence! And now the physician or surgeon becomes necessary.

Besides the cases of tedious labor, the practitioner will meet, from time to time, robust and nervous women, plethoric to a high degree, in whom true labor is preceded by a kind of preparatory labor which is protracted, painful, and presents almost the conditions of a morbid state; the temperature is high as in fever, and its consequences might become troublesome if no judicious interference is resorted to by the experienced physician.

Under the influence of the reaction that took place against the antiphlogistic system of Broussais, *blood-letting*, which was used abusively by our predecessors, especially in France, is now-a-days almost absolutely rejected. One exaggeration led to another; it is none the less true, however, that slight depletion may at times prove beneficial, even during labor, as, for instance, in the cases just mentioned, in which blood-letting might act as a preventative against convulsions.

Most frequently opiates, or even antispasmodics, may prove sufficient, as laudanum by the mouth or per rectum, a subcutaneous injection of morphia, a mixture containing hydrate of chloral, valerian, or assafœtida. They may be particularly applicable to primipara, and happily prepare the ultimate action of chloroform by inhalation. And is not a physician needed to judge of the opportunity to resort to those means, and cause them to be applied properly, or *secundem artem?*

Furthermore, the part of the physician is not limited to overcoming and subduing the pains in confinement; he must also watch and direct, as it were, the *contractions* of the womb, which are so special, and which constitute really the physiology of labor. Hence the power of the physician to act on the *muscular* element, which power may be in fault either by excess, or deficiency. When the uterine contractions seem to pass the proper bounds, *opium* will restrain them, and at the same time allay pain; and when inadequate, materia medica places at the disposal of the accoucheur *ergot of rye*, which exerts an elective action over the uterine muscles. The valuable services which prudent and experienced practioners derive from that precious substance cannot be denied; however, with what caution and reserve must it not be resorted to, especially in behalf of the child! but how many blunders are daily committed on this point!

Be it what it may, we have before us a series of therapeutical agents almost especially applicable to the uterus in labor, and yet *child-birth* would be considered as a purely physiological or simple function! The truth is that there are but few pathological states requiring as much solicitude on the part of the physician, and very few indeed for which materia medica affords so many means of relief. Even surgeons have been strongly inclined towards shortening its duration.

Some surgeons are of opinion that the forceps must be applied as soon as possible, in all cases. But in natural labor no idea of resorting to instruments could be entertained, except at the inferior straight; quite late, consequently after long suffering being endured, and when it would only be in order to gain time. Is it then necessary to frighten the woman with one of the most dreaded contrivances of the surgical arsenal? Is it worth offending her modesty, as it is unavoidable to do when the forceps are used, whilst a little chloroform would remove all difficulties?

But other surgeons have thought that their intervention was required much sooner, and they would readily *induce labor* in almost every case, and they believe that the *artificial dilatation of the os uteri* must be resorted to early, and accomplished promptly.

Assisting dilatation with the fingers has undoubtedly been practised in all times. It was the first step towards surgical interference, but it is not free from inconvenience, owing to the accidents it is liable to produce. "Since 1855, Mattei used the sheep's bladder to dilate the neck of the womb in a case of protracted labor, the bladder being attached to a metallic catheter and filled with water." (Joulin, p. 1112.)

This idea was ingenious, as it was an artificial means closely resembling the natural process. This *artificial bag of waters* being introduced into the neck would gently open the womb, by pressing its orifice from inside out, as the *true natural bag of waters*.

Barnes & Tarnier's india-rubber tubes and bags, used to induce premature labor, would, however, be preferable to Mattei's bladder in cases of protracted labor. But such artificial dilatation being a surgical interference, would call for chloroform, and with it the pain being subdued, natural dilatation may patiently be allowed to go on.

In a word, the object of surgeons is evidently to shorten the duration of natural labor, and the duty of the physician is to diminish its pains and institute complete and proper treatment against them.

The Broussaists bled almost every woman in confinement, whilst the followers of the system of John Brown resorted, under the same circumstances, to alcoholic stimulants, attributing anæsthetic effects to them, and even attempting to substitute them for chloroform. But in order to obtain sufficient effect with alcoholics, it is evidently necessary to administer them rather freely, and indeed until intoxication be produced! In this state no doubt a woman may give birth to a child whilst unconscious, and such facts are on record. Yet inebriation, even produced by champagne wine, and under the supervision of a physician, would nevertheless constitute a somewhat venturesome method, which, without appealing to temperance societies, could scarcely be made general.

But modern chemistry has extracted from alcohol two quin-

tessences more subtile than itself—ether and chloroform. As is well known, when sulphuric acid is mixed with alcohol and submitted to distillation, ether is produced, and when chloride of lime is used, chloroform is the result.

In the hands of the physician chloroform is as legitimate a drug as any of the most active and powerful remedies in materia medica. Professor Channing, of Boston, calls it the "remedy of pain," and, applied to labor pain, it is no exaggeration to say that it is a *specific*.

It is a subtile vapor which, being inhaled, penetrates into the blood, without altering it, and is exhaled as quick as it has reached it. During its rapid passage its effects are astonishingly prompt, ceasing almost as quick as they are produced. We see at once how such properties are happily adapted to child-birth pains, which are intermitting, intense as they are fugitive, returning and passing off from time to time. The physician, besides, can always control the doses of this drug, which is administered under the form of vapor and in the open air. Indeed, it is the atmosphere which serves as a vehicle, or natural supporter; therefore, by allowing air it will prove sufficient to weaken at will, and at once, the inhaled anodyne.

It is not all; chloroform inhaled during labor, after producing slight troubles in hearing, soon affects the labor pains, but without stopping or disturbing the uterine *contractions*, unless excessive doses are given for a long time, or unless the inhalations should be too hasty or premature, before the labor is sufficiently advanced; otherwise, every day experience proves that chloroform soothes and regulates the uterine pains without diminishing the contractions, even before producing inebriety or sleep, or sometimes even without blunting sensibility.

I could mention several ladies who had lost all sensibility to *uterine pains* under the influence of chloroform, and who could not be touched, however lightly, without feeling it at once, or had enough self-possession to enable them to talk. One of them said, whilst almost out of breath during the last pains: "I feel that I am bearing down, but I cannot say that I suffer." This same lady, at the same period of her next confinement, was sleeping whilst labor was going on, and afterwards remembered nothing. Another lady, also sound asleep whilst in the last throes of labor, unconscious of her pains, had her sensibility

so acute that the muscles of her face would contract every time that a fly would alight on her face.

A strange sleep that which is brought on by chloroform, in which the labor pains are destroyed, at the same time that the greatest muscular efforts are being made, whilst the sensibility of the skin remains normal, and confinement takes place as in a dream! "No, I cannot believe that the child is born," said a lady whom I asked if she heard her child cry; and she could scarcely believe her senses, because she had no recollection of anything since the first inhalation of chloroform, no more than if she had been absent.

The clinical facts of the same kind, observed at the formerly "*lit de misère*" but now transformed into "*lit de repos*," for some at least, are every day gathering to bear testimony in favor of the *specific* action of chloroform, as a *remedy for child-bed pains*, when it is properly administered.

In order to see cases analogous to the above, we must aim merely to the suppression of pain– in other words, to the *anodynie* state of the woman, and not at all to her *anæsthetic* state. In technical language we might say that we must look for *anodynetocia*, and not *anæsthesitocia*, or obstetrical anæsthesia. Those words say clearly, what we would express less to the purpose, with long circumlocutions; I shall therefore make use of these terms, notwithstanding my opposition to any exaggerated use of greek words in medical language!

It is important to know that pain (ὀδύνη) is the element which it is urgent to overcome in confinement, and it is a blessing when it can be done without affecting general sensibility, and without exciting or repressing the cerebral functions. The fact is that pain is always productive of mischief in all living organism, and in cases of labor it must only serve as a warning to call in the obstetrician.

Therefore, soothing uterine pain during confinement is not only an invaluable advantage for the woman, that of escaping the most intense pain that she can be submitted to, but it is also that most precious result of avoiding, partly, at least, the *dangers* which too often accompany or follow the crisis of the function of generation (parturition), especially when it is protracted and extremely painful.

Simpson has established a law, in saying that "the saving of human suffering implies the saving of human life." (P. 536).

The words *anodynetocia* and *analgesitocia* are equivalent, and might serve to designate a group of therapeutical agents constituting the medical treatment of parturition, whilst the term *anæsthesitocia* might be reserved for anæsthesia applied in obstetrical operations, i. e., for obstetrical surgery.

As *anodynetocia* (or analgesitocia) will grow into use, no doubt the chapter on *dystocia* of obstetrical books, will lose its importance.

HEMORRHOIDS—OPERATION WITH THE GALVANOCAUSTIC—CURE.

BY Y. R. LeMonnier,

Visiting Surgeon to Charity Hospital; Chief of Clinic to the Chair of Chemisty, Medical Department, University of Louisiana; Member of Board of Health, State of Louisiana

Observation.—Mr. L. has suffered from hemorrhoids for several years, and is subject to frequent and copious losses of blood from the fundament.

Present Condition.—Mr. L. is *very anæmic*; tips of fingers, nose, lips and ears of a yellowish-white hue. His general appearance is of a straw color, leading to the belief that he suffers from a cancerous affection. He walks with difficulty, and can scarcely accelerate his gait or ascend a flight of stairs on account of the great exhaustion which follows, accompanied by difficult breathing and palpitations of the heart. There exists, with the first sound of this organ, at its base, the characteristic *bruit de souffle* of anæmia. The mucous membranes are pale and discolored; appetite poor; digestion languid; strength greatly diminished; emaciation great.

Such was the general condition of the gentleman when he called on me for the first time.

Local Condition.—At the anus, immediately above and below the sphincters, are four hemorrhoidal tumors, bleeding easily. A digital examination discovers no tumors above these. This examination is painful. A slight bearing down on the part of the patient prolapses these tumors. The two largest ones are the size of an ordinary peach stone. Two are external and two internal. Defecation is painful.

Sept. 12th, 1874—2 p. m. All preparatory steps being taken, the battery charged, the operation was performed with the kind assistance of Drs. D. Tureaud, F. L. Taney, and M. M. J. L. Deslattes, Ducoté, and ———, medical students. The patient lying on his right side, the largest tumor is encircled with the platina loop and severed, next the second and the third, the operation in each case not lasting over five seconds. The loop was now changed for the acute cautery, which was darted twice through the fourth hemorrhoid.

It was only now that the patient became aware that he was being operated upon, so rapid were we in acting and so slight the pain. He was under the belief that we were *preparing for the operation*, no chloroform being given.

Not over half a teaspoonful of blood was lost, and that was before the removal of the tumors. After their excision all loss of blood stopped.

After the operation the patient walked to his bed, a distance of a few steps, complaining of a burning sensation at the fundament, which he considered less disagreeable than the pain occasioned by the presence of the hemorrhoids.

℞—Cold applications to the fundament; Battley's Sedative, 2 s., to relieve pain; ferrated cinchona wine; best nourishment.

Sept. 13th. Spent a restless night, but did not suffer much. Not a drop of blood has passed from the fundament. No fever. Continue same treatment.

Sept. 15th. Much better; smokes his cigarette. Treatment same. Might leave his bed if he chooses.

Sept. 18th. Greatly improved; got out of bed day before yesterday; appetite good. No more pains at fundament; had an almost painless operation yesterday. Discharged cured.

July 14th, 1875. I have met the gentleman since; he is entirely relieved of his piles and greatly improved in health.

Remarks.—This case speaks for itself. The operation was almost painless, not necessitating the use of chloroform; bloodless, insomuch that but a few drops of blood were spilt during the preliminary examinations: rapid, and the cure radical. The patient is to day entirely well, never having suffered nor lost a drop of blood since the operation, eleven months ago.

At a future date I will give the result of a case of cancer of the womb successfully operated on by this method.

28 Conti Street, New Orleans, La., July 14th, 1875.

OBSERVATIONS UPON THE URINE IN YELLOW FEVER.

BY GEO. M. STERNBERG, M.D.,

Brevet Major and Assistant Surgeon U. S. A.

The following observations, which for convenience of study I have arranged in tabular form, were made at Fort Barrancas, Fla., in 1873 and 1874. Twelve cases occurred in the former year and two in the latter.

In the table, the amount of urine passed during the 24 hours is given in fluid ounces in the column headed Am. A— after the figures indicating the amount, shows that only a portion of the urine was collected. These incomplete observations are excluded in calculating the average amount for each day. The specific gravity is given in the second column. It was taken with an ordinary urinometer, and no correction for temperature was made. For convenience the first two figures are omitted in the table, and consequently 1000—the specific gravity of water—must be added to the figures given.

In the third column "A" indicates that the urine was albuminous, "a" slightly albuminous, "N. A." non-albuminous. The day upon which fatal cases terminated is marked by an *.

The normal amount of urine passed by a healthy adult male in twenty-four hours is estimated to be fifty fluid ounces, having a specific gravity of 1020 at 60° Fahr. (Flint's Physiology, Vol. Secretion, etc., p. 189.)

For the purpose of comparison, I shall take the product of the number of fluid ounces passed in twenty-four hours multiplied by the specific gravity as representing the total solids excreted by the kidneys each day.

Am. × S. G. = total solids. As 1000, the specific gravity of water is a common factor it may be eliminated from the calculation. By this method we obtain from our table of observations upon eleven non-fatal cases in previously healthy adults, the following table of averages:

Observations upon the Urine in eleven (11) NON-FATAL Cases of Yellow Fever, at Fort Barrancas, Fla., in 1873 and 1874.

Day of Disease.	FIRST.			SECOND.			THIRD.			FOURTH.			FIFTH.			SIXTH.			SEVENTH.			EIGHTH.			NINTH.			TENTH.					
CASE.	A.M.	S.G.	Al.	A.M.	S.G.	Al.	A.M.	S.G.	Al.	A.M.	S.G.	Al.	A.M.	S.G.	Al.	A.M.	S.G.	Al.	A.M.	S.G.	Al.	A.M.	S.G.	Al.	A.M.	S.G.	Al.	A.M.	S.G.	Al.	Age.	Sex.	Highest Temp'e.
No. 1	....	..	..	....	..	....	....	....	A	....	..	....	12-	1[illegible]	A	....	10	....	20	.	...	52	11	a	35	..	....	23	....	....	26	M	105[illegible]7
No. 2	....	....	....	....	..	A	21-	25	....	7-	25	A	26	27	a	24	....	....	16	....	...	16	....	.	32	25	N A	....	....	....	25	M	104 5
No. 3	....	....	....	41	15	A	24	15	A	....	15	a	22	15	A	33	10	A	24-	10	A	30	11	A	36	12	A	52	14	a	24	F	103
No. 4	12-	25	N A	40	28	a	2[illegible]	[illegible]	N A	24	25	N A	27	30	N A	23	23	..	32	....	..	32	..	..	....	..	....	....	....	....	23	M	104
No. 5	....	....	....	20	..	....	6-	30	N A	14	30	N A	21	30	N A	35	....	....	25	..	....	24	....	....	....	..	....	....	....	..	23	M	102 5
No. 6	....	....	....	..	....	....	14-	23	N A	22	22	N A	22	17	a	26	26	a	30	24	a	20	22	N A	28	19	A	24	30	N A	30	M	105
No. 7	....	....	....	....	....	....	24	25	N A	24	15	N A	20	22	N A	24	20	N A	25	23	N A	....	..	....	....	..	....	....	....	....	30	M	102
No. 8	....	....	....	26	23	N A	24	20	N A	23	22	N A	....	..	....	....	....	....	....	....	....	....	..	....	....	....	...	..	....	..	30	M	103 5
No. 9	17-	33	N A	....	....	N A	35	15	N A	17	27	N A	30	26	N A	25	26	N A	24	23	N A	27	26	N A	14	29	N A	22	33	N A	28	M	104
No. 10	....	....	..	..	33	N A	18	32	N A	26	19	N A	8-	25	N A	20	26	N A	...	26	N A	....	....	....	....	....	....	....	....	....	37	M	103
No. 11	....	....	..	8-	26	N A	1-	....	N A	13	24	A	22	2[illegible]	A	16	25	A	32	24	A	26	22	A	8—	24	A	16	34	A	26	M	104
No. of Cases.	...	2	2	4	4	7	6	9	10	8	10	10	8	10	10	9	8	6	7	6	6	8	5	5	5	5	5	5	4	4	11	....	11
Average.	...	24	N A	32	25	3.7 A	24	24	1.5 A	21	22	3–10 A	24	23	½ A	26	20	½ A	26	22	½ A	28	18	3.5 A	29	20	2.5 A	27	30	½ A	28	...	103 7

Observations upon the Urine in three (3) FATAL Cases of Yellow Fever, at Fort Barrancas, Fla., in 1873.

Day of Disease.	FIRST.			SECOND.			THIRD.			FOURTH.			FIFTH.			SIXTH.			SEVENTH.			EIGHTH.			NINTH.			TENTH.					
CASE.	A.M.	S.G.	Al.	A.M.	S.G.	Al.	A.M.	S.G.	Al.	A.M.	S.G.	Al.	A.M.	S.G.	Al.	A.M.	S.G.	Al.	A.M.	S.G.	Al.	A.M.	S.G.	Al.	A.M.	S.G.	Al.	A.M.	S.G.	Al.	Age.	Sex.	Highest Temp'e.
No. 1	....	....	....	....	....	....	....	....	A	....	..	....	4-	10	A	16	10	A	10	10	A	7	....	...	9	....	*	....	....	....	30	M	105[illegible]
No. 2	5—	25	N A	25	31	N A	30	20	A	8	10	A	3	....	A	3	15	A	0	....	....	0	....	*	....	....	....	....	....	....	25	M	105 5'
No. 3	....	....	....	24	17	A	10	11	A	4	10	A	3	*	A	....	....	....	....	....	....	....	....	....	....	..	....	....	....	....	60	M	104 5

TABLE NO. II.

	Am.		S.G.		
Normal in adult male.....	50	×	20	=	1000
1st day of yellow fever.....	—		—		
2d " " "	32	×	25	=	800
3d " " "	24	×	24	=	576
4th " " "	21	×	22	=	462
5th " " "	24	×	23	=	552
6th " " "	26	×	20	=	520
7th " " "	26	×	22	=	572
8th " " "	28	×	18	=	504
9th " " "	29	×	20	=	580
10th " " "	27	×	19	=	513
11th " " "	28	×	18	=	504
12th " " "	29	×	20	=	580

It will be seen from the above, that the amount of solids excreted by the kidneys is greatly reduced from the first, and falls by the third day to but little more than half the normal quantity. This reduction is to be ascribed, not to defective action of the excretory apparatus, of which there was no evidence in any of these cases, but to a diminished production of the urinary constituents in the system. Whether this reduction is greater or less than would be found in the case of a healthy adult placed in the same circumstances as to absolute repose and almost total abstinence from food, I can not at present determine. The inquiry, if conducted with sufficient care, would be of interest as showing what influence, if any, the degree of pyrexia has upon the production in the system of the urinary constituents. Some light may be thrown upon this point by a comparison of cases in which there was a marked difference in the degree of pyrexia.

For the purpose of pursuing this inquiry I shall tabulate the complete observations—only—made upon the second, third, and fourth days of the disease, when an abnormal elevation of temperature exists, and shall give from my notes of these cases the average temperature in each case upon the day specified.

CASE.	SECOND DAY.		THIRD DAY.		FOURTH DAY.	
	A.M. x S.G.	Av. Temp.	A.M. x S.G.	Av. Temp.	A.M. x S.G.	Av. Temp.
No. 3....	555	102° 5′	360	102° 0′	.....	.....
No. 4....	1120	101 2	600	100	600	101° 0
No. 5....	.....	.....	.....	.....	420	100
No. 6....	.....	.....	.....	.....	484	101 2
No. 7....	.....	.....	600	100 3	360	100 2
No. 8....	598	101 2	480	99 5	506	99 2
No. 9....	.....	.....	525	100 2	459	100 5
No. 10...	.....	.....	576	101 3	494	102
No. 11...	.....	.....	.....	.....	432	102 5

Taking from this table all the observations in which the temperature exceeded 101° and arranging them in one series, and all in which it was 101° and below, and arranging them in another, we have the following:

505	1 02° 5	600	100° 0
1120	101 2	600	100 3
598	101 2	480	99 5
360	102	525	100 2
516	101 3	600	101
484	101 2	420	100
494	102	360	100 2
432	102 5	506	99 2
		459	100 5
Average 569	101° 7		
Excess, 54	1 6	Average 505	100° 1

The result is a sufficiently marked excess in favor of the higher temperature, an excess which might *a priori* have been expected, and which it seems fair to attribute to increased tissue waste as an accompaniment, and perhaps cause, of the greater pyretic action.

The conditions were exceedingly favorable in all of the cases included in my table for such an investigation as the above. The patients were all adults, previously healthy. They were kept perfectly quiet in bed. During the first four or five days of the disease no food was allowed, and no medicine given which could materially have influenced the results.

But let us look a little more closely at our figures, and we shall find that it is necessary to be extremely cautious in attempt-

ing generalizations from meagre data. The figures at the head of each column show an excess of 95 in favor of the lower temperature, while the difference in temperature is 2°5 in favor of the smaller product. The second product (1120) in the first column is—with a considerably lower temperature—more than twice as great as that immediately above it. As this product is exceptionally great, let us leave it out of the calculation and obtain the average of the remaining seven observations in the first column. The result is—

	Average of A.M. x S.G.	Temp.
First column	484	101° 8
Second column	505	100 1
Excess in favor of lowest temp'e	21	
Difference of temperature		1° 7

It may be objected to the above calculation, that the presence of albumen in the urine in an undetermined quantity will detract from the value of the specific gravity as an index of the total solids excreted. I will therefore make a new estimate, in which only those observations are included where the urine is marked "N. A." (non-albuminous). The result is—

	Average of A.M. x S.G.	Temp.
First series	523	101° 4
Second series	505	100 1
Excess in favor highest temper'e	18	
Difference of temperature		1° 3

This is a difference of about 14 for one degree of temperature; or to express it more clearly, the total solids excreted by the kidneys in twenty-four hours are increased by $\frac{14}{1000}$ of the normal amount for the same period by an elevation of temperature amounting to one degree Fahr.

While I can not claim any great value for this result, I trust that the calculation may not be without its use as an example of a method by which I believe valuable and interesting results may be obtained from more ample data.

The diagnostic and prognostic value of the presence of albu-

men in the urine, as shown by my table of observations and clinical notes, is as follows:

Albumen was present in the urine in nine out of fourteen cases. It first made its appearance on the second day in four, on the third day in three, on the fourth day in one, and on the fifth day in one.

With one exception (case 9), albumen was found in the urine in every case in which a temperature of 104° was reached during the whole course of the disease.

The amount of albumen increased as the product of A. M. × S. G. diminished.

Table No. II. shows the average of A. M. + S. G. in non-fatal cases. It is highest at the outset of the disease, and lowest on the fourth day, although tolerably uniform from the third to the tenth day.

In all the fatal cases A. M. × S. G. became greatly reduced before the fatal issue, falling to zero in case two and to 40 in case three on the day preceding death.

CURARE OR WOORARA—CAN IT BE USED THERAPEUTICALLY?

BY C. L. ROYER, M.D.,*

San Francisco, Cal.

In the year 1869 I first became acquainted with this drug, or poison, as it may be called, and commenced to experiment with it.

A description of this article may be seen in the U. S. Dispensatory of Wood & Bache, and "Vin Alkaloide von Huseman."

A small quantity (gr. ½) was dissolved in water and injected under the skin of a medium-sized dog; it produced death in 40 minutes of time. One sixth of a grain injected under the skin of a larger-sized dog (I have not taken the weight of this animal) brought him very near death within one hour's time, producing

[* The writer of this paper is a graduate of the University of Pennsylvania. We can testify to the strict regularity of his diploma. This statement is made because a California newspaper has published his name in a list of many other medical practitioners who are charged with not having graduated in medicine. While we are pleased to do full justice to Dr. Royer, our readers will remember that the usual disclaimer of editorial responsibility for either the facts or deductions of contributors is to be applied to all papers published in this JOURNAL.—ED.]

such toxic symptoms as have been described in the before mentioned works. Twenty minutes after injecting such a dose, the animal loses the use of his hind legs; a few minutes afterwards the use of the front legs; his mouth commences to give off a large quantity (say eight ounces in the half hour) of clear mucus, similar in looks to the white of an egg, but more viscid, and in raising it up it would descend in long strings, also some foam is produced. The lower jaw, after depressing it, could not be closed by the animal; the tongue would protrude sideways, and the animal could not move it back to its normal position. There seemed to be existing a relaxed condition of all voluntary muscles except those of the eyes, for when I called the animal he could point his eyes at me, and move them in their sockets as I altered my position. The heart's action became gradually slower to 30 pulsations per minute (the normal condition of pulse is about 120 per minute), and its movements were accentuated louder. The urine and fæces passed freely involuntarily; the breathing became extremely slow and difficult. Such a condition had come on in one hour's time after the injection was made. The intellect of the animal seemed not to be impaired. After this time the heart's action grew more rapid, and in another hour the animal was as well as ever, only the second sound of the heart was found to be the stronger one instead of the first. It was the same as we find it in men where insufficiency of the mitral valve exists, and this condition of the heart lasted for some time; in some instances I noticed it for several days.

The blood of the dog when poisoned by curare stagnates in the venous system; it looks very dark, and does not coagulate, except a small clot will be found in the heart. The blood in the larger arteries is not coagulated; it looks very dark, and presents a smeary liquid appearance.

Curare does neutralize strychnia, according to Huseman, but the strychnia does not restore the relaxed condition of the muscles that Curare has produced. I have used at first curare a one gr. dose hypodermically, and after it had showed signs of its activity, the strychnia was also hypodermically injected as an antidote; yet the animal would always perish with a relaxed condition of the muscles. The liquor ammoniæ has proved to be the antidote when used in time—when, or before, the curare has produced an anæsthetic condition, and that anæsthesia seems to set in five or ten minutes before death, and its non-existence

is diagnosed by the noise (howling) on the part of the animal. When the liquor ammoniæ is injected under the skin, the effect that Curare had produced soon ceases, and in a short time (one hour) the animal appears as well as ever. I have used as much as two grains of curare, and yet, after it had produced its action powerfully, the liquor ammoniæ, first diluted with three times as much water, would neutralize it, when also injected under the skin.

The different kinds of curare are of different strengths; my aim was only to find a safe dose to operate upon men.

Case One.

I gave 1-50th of a grain three times a day to an old man in the last stage of chronic phthisis; his pulse had been for several weeks 126 per minute, and the breathing was extremely difficult. I thought that if curare lowers the action of the heart, as it did in the animals, it was likely to do so in this man. In two days his pulse was lowered to 88 pulsations per minute, and remained so for six weeks' time without the continuance of the use of this drug beyond five days. On the fifth day of using it, however, jaundice was produced. This new symptom frightening the patient, the drug was then discontinued, and in a few days the jaundice disappeared. The color of the urine had changed to a deeper yellow color, and became more in quantity. The skin also became more active, the expectoration was easy: the former thin and sharp pulse became broader and softer, and remained thus for a long time. The patient would take a larger quantity of food, and got out of bed even to the garden, in order to sun and air himself. He returned, however, after two months, to the bed, as no new lungs had been reproduced, and died.

Case Two.

A young man, 17 years of age, was taken sick with a chill followed by heat, cough, pain in the chest, bloody expectoration which had lasted several days. He had taken of tartrate of ammonia and potash vi grs., aq. dist. ʒ vi, a tablespoonful every 2 hours. This had produced vomiting, and patient objected to taking any more of it. His pulse then was 160 per minute; the breathing was very short. Curare gr. 1-40 was ordered to be taken every 2 hours (4 doses of it). On the morning visit I

learned that the patient had an unusually bad night, showing great distress in breathing—almost suffocating—though now he had much improved. The pulse was at present 120, and the breathing slower and easier, and less pain, and in general better. By some misunderstanding, the nurse had given a dose every hour instead of two, which very likely accounts for the great difficulty in breathing during the night. The heart's action was probably lowered too rapidly. Ordered 3 doses, each 1-40 of a grain, to be taken during day time. On my evening visit the pulse was 88 per minute; the patient was comfortable, expectoration very easy, and continued to be so: he was well in two weeks. How much curare had to do with lowering the pulse is difficult to say, as tart. emetic had been brought previously in use.

CASE THREE.

Mr. M., 43 years of age, was suffering from a large aneurism of the abdominal aorta protruding between the crest of the ileum and the ribs of the left side. He had been sick for several years, but since seven months an inmate of the hospital. He was very greatly emaciated, and suffering much from sciatica, for which ¼ gr. of morphia had been employed hypodermically every night for the period of several months. His appetite was bad; he had constant constipation, probably produced by morphia; the pulse was very thready, 126 per minute; patient could not walk nor sit up. Here curare was tried with a view of lowering the pulse and diminishing the pressure within the sac. One-fortieth of a grain three times a day brought the pulse down to 88 per minute within four days' time, where it remained a long time. I saw this patient one year later, muscular and strong, and he informed me that he could now work in the field almost as well as ever, and that he enjoyed good health. His constitutional improvement was due to the hypodermic use of baryta muriatica. By its use he gained in 5 weeks' time 26 pounds of flesh, and could walk two miles' distance without much fatigue.

CASE FOUR.

Charles McM., 37 years of age, was affected with chronic pleurisy commencing 1½ years ago; the space where the left lung should be, was filled with degenerated lung and pus; there was but little air entering the upper left lung; the heart appeared to be forced toward the right lung, thus preventing it from normal

expansion. There was much cough and great difficulty in breathing; the pulse was 140, very thready; cold perspiration was covering the face; the lips and finger-nails had been commencing to discolor since a few days. As the common remedies had failed, and paracentesis thoracis was not indicated, curare gr. 1-40th was given every three hours. After 14 hours' time the pulse had fallen to 120 per minute; the respiration was easier; food that was taken now was retained. But soon a new complication set in, namely, œdema of the feet, and in a few days it had extended above the knees. Curare was continued; it produced jaundice after four days of use; the pulse soon came down to 100 and remained so. By the use of a diuretic the swelling of the legs disappeared, and in seven weeks' time after curare was first given the patient walked the streets, but slowly, as the pathological condition of the chest had not changed. The patient removed to live in the country, where, 10 months later, the pleuritic abscess opened of itself in the second intercostal space near the sternum, and kept on discharging profusely for three months, until, from exhaustion, he expired. In this case, curare seems to have been the cause that the unfortunate man lived one year and two months longer than ordinarily he should have lived.

Case Five.

A boy, five years old, had, some weeks ago, scarlatina. After this time ascites made its appearance (probably caused by a croupous exudation in the kidneys). For this difficulty medicines were prescribed; the ascites was not removed, and anasarca came on. The urine was microscopically examined, and showed large quantities of blood-corpuscles, and the chemical test showed much albumen. The child was failing, and this condition had lasted for four weeks from the time when ascites had first made its appearance. The pulse came up to 160 per minute, and was very soft and weak. A general tendency to hæmorrhage was unmistakeably diagnosed by the frequent bleeding from the nose and bowels, when at last, coma and threatening convulsions gave the signs of a closing scene. All that was prescribed for this patient had no lasting effect, and the attending physician gave no hope of his living much longer. I induced this physician to try curare, with a view of bringing down the action of the heart. Curare gr. 1-50, every two hours, was prescribed, to be given four doses of. Three months after this, the doctor

handed me a letter one day, which was written by a lady from the country, informing him that her son had gained full strength and vigor. Upon my inquiring what this letter had to do with me, the doctor answered that this letter was written by the mother of the child for whom curare was prescribed, and that its life was due to the use of curare; that the next day the pulse had been reduced in frequency, and the general condition had been improved; that he afterwards had sent this patient to the country with a tonic prescription.

Thus from a series of observations in these cases of diseases, and every one having a different type or character, though they bear in common the symptoms of great rapidity of the heart, it would appear that curare has a decided action upon the heart, as is shown. It would appear that curare acts only as a damper to the too rapid movement of the heart in a diseased frame. It does not seem to affect any other organs violently, for instance, the stomach or intestine, as high doses of digitalis, antimony, veratrum viride, ipecacuanha and others will. It eventually produces jaundice in doses of 1-40th of a grain three times daily, when given for a period of five days, in one-third of all cases to whom it was administered; this jaundice passed off in four to six days without any further interference or any bad results whatsoever.

It has been supposed that large doses of curare do not produce death when given internally by the mouth. I have never pushed this dose question in men, in order to test whether curare can be absorbed by the mouth and stomach in such quantities as to produce dangerous symptoms. This test would, however, be of the greatest importance—at least the surest measure to decide this question.

PROCEEDINGS OF THE NEW ORLEANS MEDICAL AND SURGICAL ASSOCIATION.

DISEASE OF THE HEART IN PREGNANT WOMEN,

By Dr. John Dell'Orto.

A few months ago, at one of our meetings, I spoke of a case of disease of the heart in a pregnant woman, at that time under my care. As I promised to let you know the final result of that case, I

purpose to-night to offer you a relation of it and indulge in some remarks thereupon. The connection that exists between diseases of the heart and pregnancy, the accidents to which women in such a state are exposed, are quite new questions, and worthy of serious study and discussion. The first who called the attention of the profession to this subject was Dr. Michel Peter, of Paris, in 1872, who, in a very interesting lecture, in which several cases were reported, suggested that serious accidents, such as miscarriage and death of the fœtus, might supervene in pregnant women affected with mitral insufficiency. Not long afterwards several French physicians, as Ollivier, Boudin, Sée, Seuvre, and Pinard, confirmed the opinion expressed by Peter, that in certain cases, cardiac affections exert such an action upon the development of pregnancy as to cause abortion, or premature confinement. Such was the result of my case, of which the following is the history.

About the end of last summer I was consulted by an Italian woman, of about 38 years, for an old and extensive cardiac disease, accompanied by symptoms of angina pectoris and asthma. At the time that she consulted me I was in a drug store, therefore I had no opportunity to apply the stethescope. I only prescribed a few antispasmodic pills and tincture of digitalis, and obtained her assurance to meet me in a few days. But feeling relieved with my prescription, she failed to comply with my request. However, at the end of January of the present year, she sent for me. I found her in the sixth month of pregnancy, and affected with such a violent fit of dyspnea, that I thought she was soon going to die. Her face was pale and sallow; her heart beat extremely quick and strong; pulse 110; inferior extremities œdematous; abdomen very tumid, with effusion on the peritoneum, and threatening a general anasarca. She had had nine previous pregnancies, all of which terminated successfully. Thirteen years ago she noticed, for the first time, a little trouble at her heart, since which time she used to have occasionally (three or four times a year) spells of suffocation, but with the removal to the sea-board and change of air, she felt soon relieved. She had been one year in America; her husband could not find any work for a long time, and they were soon reduced to extreme poverty, and were obliged to live almost upon charity, occupying a very small, damp room, with a family of nine children. These causes probably contributed to make the disease progress very rapidly towards the highly developed organic lesion, which I discovered aided by auscultation and percussion.

Not much dullness on percussion at the precordial region. By applying my hand upon it, I could distinctly feel the contractions of the ventricles, causing a slight thrill. With the stethescope I could hear the beatings of the heart in a very large space, so far as the back of the thorax; both sounds were very frequent and strong, especially the first one, which struck against the instrument, producing a peculiar sensation of thump-

ing to my ear. Between the left nipple and the lower end of the sternum, under the cartilages of the fifth and seventh ribs, I noticed a rough murmur (*bruit de soufflet* of Laënnec); there was no irregularity or intermittence in the palpitations, but they were continuous and very violent. I made diagnosis of an extended disease of the mitral valve and hypertrophy of the left ventricle, complicated very probably with dilatation of all the cavities of the heart. I could not find any special murmur in the lungs indicating any organic disease thereof, with the exception of the exaggeration of the respiratory murmur, and some *sibilant rales*, characteristic of difficulty in the pulmonary circulation and of dilatation of the extreme bronchial cells.

The womb was sound; the fœtus living and moving perfectly well—the beatings of its heart very clear and normal; the murmur of the placenta extremely strong.

Urine very scanty but natural; no albumen.

The presence of such symptoms led me to consider the case a very serious and hopeless one. I prescribed tincture of digitalis in a mixture in which I dissolved acetate of potash, and ordered at the same time pills of assafœtida and quinine, and occasionally chloral. These medicaments were continued during the whole course of treatment, and produced incontestible relief.

Five days after my first visit she miscarried, and lost a great deal of blood. The child was of six months, and looked healthy; he lived 40 hours. Immediately after abortion she felt easier, but three days after the womb commenced to swell and discharged a purulent matter; the dropsical symptoms increased, and so also the pulmonary troubles; congestion of the lungs, dyspnea, and palpitations so intensely progressed, that death occurred on the eighteenth day after miscarriage.

I am sorry that I was not able to make *post-mortem* examination of this case, in order to confirm my diagnosis, but am convinced from the symptoms which I have related, that both the cavities of the heart were affected by disease. The frequency of the beats, their extension to the whole thorax, the exaggeration and prolongation of the first sound, proved the hypertrophy with dilation of the left ventricle. The dropsical symptoms were consequences of obstruction of the circulation of the vena porta, caused by the dilatation of the right ventricle and auricle. The murmur had all the character dependent upon the friction of the blood current made against a mitral valve roughed by disease.

This observation suggested to me the idea to put before the Association the following questions, for discussion:

1st. Which side of the heart is more affected by disease?

2d. How can disease of the left side of the heart produce abortion?

3d. When called to a case of disease of the heart in a pregnant woman, what would be the best treatment that we should adopt in order to prevent abortion?

4th. What is the action of digitalis on the heart and circulation?

1st. Which side of the heart is more affected by disease?

The following lines, which I quote from an original paper published in several numbers of the *London Lancet* of 1872-'73, by Dr. Cornelius Black, of London, will answer properly this question.

"Generally the left side of the heart is the one which most frequently suffers. Before the age of forty, cardiac disease will almost invariably be found to exist on the left side. After that age, the mischief will rather exist on the right side. The diseases of the left side are essentially active and primary in their character, and point to an inflammatory origin. The diseases of the right side are essentially passive and secondary in their character, and point to a non-inflammatory origin. The former tend to contract the valvular apertures, and to increase the size of the left chambers; the latter tend to widen the valvular apertures, and to dilate the right side of the heart. The reason of this is found in the constitution of the blood, which reaches the left side of the heart from the lungs, and that which reaches the right side of the heart from the general system. The blood reaching the left side of the heart from the lungs has been replenished with all the elements necessary for the growth of the tissues; it has been purified, renovated and vivified, by its oxygenation in the lungs, and it is thus rendered in the highest degree stimulating to the left heart. The blood reaching the right side of the heart from the general system has been deprived, by the requirements of growth, of the chief portion of its nutrient materials; it has been fouled by the débris of tissue waste; it has been farther poisoned by its impregnation with carbonic acid gas; it is therefore a depressant rather than a healthy excitant to the right heart. * * * Like begets like in very many instances. This axiom is true in the diseases of the heart. The rich, stimulating blood of the left ventricle urges, feeds, and actively supports any disease which may arise at that point; while the poor, impoverished, fouled, tainted, and attenuated blood which flows through the cavities of the right heart, favors disease of a correspondingly low and degenerate character. So long as the body is rapidly built up, and as rapidly pulled down, disease of the left heart maintains an active character; but when the balance between nutrition and waste is destroyed—when nutrition becomes less active, whilst waste remains the same, or is more active than before—disease of the left heart loses more and more of its active character, and approximates more and more in its nature to diseases of the right heart. In many this change begins at the age of forty; in others, not until five or ten years after that period. Thenceforward the tendency to inflammatory diseases of the left heart declines—the tendency to degeneration increases. With the gradual declination of one tendency, and a

gradual increase of the other, a period is at length reached when active inflammatory disease ceases, as a rule, to affect the left heart. At this juncture the left and right side of the heart, hitherto dissimilar in their tendencies, are, in this respect, almost as one. The active tendency of early life has given place to the passive tendency of advancing years—inflammation to degeneration."

Gentlemen—I purposely copied this passage of the eminent English physician, because it establishes facts of great magnitude, which may perhaps help us in the explanation of the pathological cases that form the subject of this discussion, and lead us to find out the right treatment.

In my case, as well as in the others of the above-named gentlemen, the main disease was in the left side. In all the mitral valve was affected; in the most it was insufficiency, in a few it was constriction of said valve, but in every one the disease probably commenced by a valvulitis. The circumstance that all these women but one were not at their first gestation, leads me to believe that, before it becomes a cause of abortion, a disease of the left heart must have lasted a long time, and undergone a series of pathological alterations, commencing by a simple inflammation of the valve, increasing gradually to fibrinous, and osseous or cartilagenous vegetations, and ending probably in causing thickening and hypertrophy of the left ventricle, and dilatation of the left auricle.

2d. How can a disease of the left side of the heart produce abortion?

In venturing to express an opinion on this question, I am only impelled by the desire of contributing some light upon this obscure point, hoping to elicit superior views from the more enlightened members of this Association. If we admit that diseases of the left side of the heart are of an active character, and point to an inflammatory origin, the consequence that follows is, that the first manifestation of the disease must be an hypersensibility (hyperæsthesia) of the endocardium, which subsequently extends throughout the whole arterial branches of the circulating system. This hyperæsthesia excites gradually the left ventricle and the arteries to active contraction; in the course of time the muscular energy of the heart and vessels is so increased that the contractions are almost continual, and the blood is thrown with great force into the extreme vessels of all the organism; with the progress of the disease the blood itself suffers in its constitution, one or more of its elements becomes altered, and so an artificial plethora is formed (*plethore morbide* of Trousseau), followed by congestions, inflammations, hæmorrhages, etc. At a still later stage, the internal membrane of all the apparatus of circulation becomes thicker, fibrinous vegetations grow on the valves, and finally, after years of alternatives, the disease may extend to the right cavities; then the disorgani-

zation of the constitution of the blood reaches its highest degree, the serous element predominates over the others, until polyuria or serous plethora happens, as in my case (*plethore* cachetique of Trousseau). These are the main facts that we generally observe in diseases of the heart. Happily all cases do not end in a similarly fatal manner. In some instances they do not progress so far; in some individuals, of quiet and temperate habits, the course is very slow; sometimes it seems to stop altogether, allowing to the patients the enjoyment of comparatively good health, and protraction of life to a tolerably old age; but in many cases the progress is very rapid, especially when occasional causes coexist which excite the circulation, such as the abuse of spirituous drinks, rheumatical fevers, and repeated pregnancies. I said that, under the increased muscular energy of the vessels, the constitution of the blood becomes altered, because I firmly believe with Trousseau, that the vessels have not only the property to transmit the blood to the different parts of the organism—the blood is not only a liquid running like a flow of water through its tubes—but they are both also endowed with a special vital force. By virtue of this special life, they are made to contribute actively to the great function of sanguification, or hæmatosis, which, commencing in the lungs, is continued through all the circulatory system. This peculiar property resides in the onward progression of the blood itself, and in its very elements, and in the fibrous tension of the vessels under the control of the nervous system. It is in these two properties, in the *synergy* or perfect accord (the one answering to the right stimulus of the other, and vice versa), that the cause of circulation is to be found, constituting that harmony which the Father of Medicine used to call *consensus unus, consentientia omnia*. But when this common accord is interfered with, and one or both of these properties are altered, great disturbance of the circulation arises, and likewise idiopatic diseases of this system, of which plethora is the most common. The uterus is one of the organs most likely to undergo the influence of this plethora. Now let us suppose that a woman affected with disease of the heart becomes pregnant, what will happen? The first phenomenon that appears in pregnancy is an increased vitality of the whole organism of the woman, which causes a corresponding augmentation in the total mass of the blood. This increased vitality is a work necessary for the nutrition of the fœtus, and is naturally increasing every day in proportion with the progress of gestation, and with the wants of the fœtus itself. At the end of the third, or the commencement of the fourth month, when the uterus and placenta acquire a great development, there are formed between that organ and this (membrane) a multiplicity of small vessels, which, gathered together in several points of the utero-placental surface, cause there *determination of blood*. At that time, upon applying the stethescope to the uterus, a special murmur very distinctly is heard, produced by the movement of the blood into

these vessels. Dr. M. Kergaradec, who first discovered this murmur, called it *souffle simple* or *placentaire*, in order to distinguish it from the double murmur of the beatings of the fœtus' heart, and found to be synchronous with the pulse of the mother. Without entering into a discussion about the character of these vessels, upon which there are still many controversies among obstetricians, I only point to their existence, and state that, if their contraction is synchronous with the pulse of the mother, they must exert some morbid influence on the farther development of pregnancy, whenever there is in the left cavities of the heart of the mother an extensive organic defect, such as I have above stated. In this case, there is no doubt but that the blood will be hurried to an inordinate degree to these vessels, which will become so dilated as to acquire the appearance of small *aneurismus-varicosus*, or *varicoses-aneurismaticous*, and to cause premature contraction and abortion.

3d. When called to a case of disease of the heart in a pregnant woman, what would be the best treatment that we should adopt in order to prevent abortion?

In the case which I have related the disease was so advanced, the constitution of the woman so wasted, the blood crasis so altered and poor, that there was no chance of recovery under any medical treatment. But in another case, supposing the woman in a more favorable condition, I would try a more active plan of treatment, by adopting such means as would at the same time immediately relieve the sufferings of the mother and consequently prevent abortion.

I would therefore suggest to watch the woman very closely from the first days of pregnancy, advising complete rest of body and mind, and even proposing (if necessary) her removal to a healthy place, where she could find a constant supply of a cool, fresh and pure air.

As soon as she enters upon her fourth month, I would make use freely of the lancet, drawing from six to eight ounces of blood from the veins of the arm, to be repeated, according to circumstances, every four or five weeks until the end of pregnancy. I do not know of any better means to relieve an oppressed heart than blood-letting, cautiously used. By diminishing the amount of the circulating fluid, it reëstablishes its more regular flow, and prevents organic congestion and hæmorrhage. The use of the lancet in pregnancy is very commonly applied to strong and plethoric women in several countries of Europe. I recollect to have seen, when a student, many pregnant women who could not reach full term without blood letting, very often, repeated several times. If this is useful in cases of simple physiological plethora, I do not see why it should not be equally so with an organic disease of the heart, of an active, sthenic type, as I have stated.

As the action of the heart is controlled by the nervous system,

I believe that those remedies which have an hypnotic action upon the same may be of great avail in this disease, such as hydrate of chloral. Last year Dr. Martineau, at a meeting of the *Société de Therapeutique* of Paris, related two cases of threatening miscarriage, in which he really prevented and arrested abortion by the simple administration of chloral by the rectum, in the dose of fifteen grains repeated two or three times at intervals of four or five hours.

Next to blood-letting, the most effective agent to allay the hypersensibility, and to diminish the rapid action of the heart and arteries, is digitalis, which I would suggest to give as sedative in small doses, taking good care to watch its effect, in order to suspend it as soon as the action of the heart becomes natural.

4th. What is the action of digitalis on the heart and circulation?

The opinions of physiologists and physicians are still very much at variance on this point. According to some experimenters, such as Cullen and Withering, digitalis has the property to diminish the frequency of the pulse. According to others, such as Sanders, Yaeger, MacClean, it increases the frequency of the pulse. Some remark that the pulse, under the influence of digitalis (independent of acceleration or retardation), not only preserves its force and energy, but its arterial tension is increased, and the continual use of it produces clonic contraction of the heart, that causes the death of the animal by arresting suddenly the flow of the blood to all parts of the body. Such is the opinion of the modern physiologists, among whom is Claude Bernard; and the inference that the believers in this doctrine draw, is that digitalis is a tonic of the heart (Legroux, Lelion, Jyredey and Beau). Bouillaud calls it the *quinia* of the heart; others, like Shiemann, Onimus, Prof. Traube, of Berlin, and the old Italian school of counter-stimulation, assert the opposite—that is, that the arterial tension is diminished by the continual administration of digitalis, and that death is caused by the paralyzation of the muscular fibres of the heart; hence digitalis is a sedative, an hyposthenic, a counter-stimulant. The homœopaths say that digitalis, like all dynamic medicaments, produces two effects, primary and secondary. Among the primary effects, caused by small dilutions, there is diminution in the frequency and tension of the pulse; among the secondary effects, caused by large dilutions, there is increase in the frequency and energy of the arteries and heart—they therefore conclude that the good results obtained by allopaths in many diseases are due to a fortuitous application of the principle of *similia similibus*.

Which of these opinions is the correct one? I believe that there is some truth in every one of them, and that difference in the results of the experimentation may probably come from several causes: 1st, from the quality of digitalis employed, which, as everybody knows, may cause effects more or less

active, more or less irritating, more or less poisonous, according to the several preparations used and to the mode of their application; 2d, from the dissimilar animals on which the experiments were performed, such as fowls, frogs, dogs, cats, and man in a state of health. The anatomy of the heart, its action, the cause of its movement, its sensibility to the physical and moral agents by which animals are surrounded, are so different in the different species, that we must not be astonished to see such variations on the obtained effects of this drug by physiologists.

With regard to the pure experimentation of homœopathy, I will repeat here what I said in my last paper on this subject—that the two symptoms produced by medicaments, and usually in contrast with one another, are very important facts, the decision and explanation of which can only be obtained by farther study, and more deliberate and dispassionate experimentations on both sides.

Whilst we are waiting for the result, let us content ourselves with our clinical observations.

For my part, I declare that the inflammatory character of the diseases for which I administer digitalis, the reduction of the contractions of the heart and frequency of the pulse, which I have observed to follow almost immediately, the consequent decrease in the temperature, the profuse diaphoresis, and diuresis, make me incline to the belief in a direct sedative action. Without partaking of the errors of the Italian school, I am, on this point, of the opinion of Rasori and Giaccomini, that digitalis is a counter-stimulant. I will conclude with the following words of the before named gentleman, Dr. Cornelius Black, who seems to partake of the same opinion: "I will not assert positively which of these explanations is the correct one, but the extreme pallor of the countenance, the small, feeble pulse, the faintness, the giddiness, the nausea, the sense of extreme debility, the muscular tremor, which supervene on the continued use of digitalis, are certainly more indicative of a paralyzing tendency than of a tendency to a clonic contraction, and I must confess that the old view of the action of digitalis finds more favor with me than the recent."

CURRENT MEDICAL LITERATURE.

ANATOMY, PHYSIOLOGY AND PATHOLOGY.

[Compiled by F. Loeber, M.D., Professor of General and Descriptive Anatomy, Charity Hospital Medical College and George K. Pratt, M.D., Professor of Physiology, Charity Hospital Medical College.]

SCHAFER ON THE STRUCTURE OF PACINIAN CORPUSCLES.

Schäfer (*Quarterly Journal of Microscopical Science*, April 7, 1875) has studied the Pacinian corpuscles in the mesentery of

the cat. He describes the central fibre, the core, and the capsular envelope.

The central fibre he finds, as other observers have done, to resemble in most respects the axis-cylinder of a nerve, but to be sometimes accompanied for a short distance within the core by the medullary sheath. No indication of any membranous structure corresponding to the primitive sheath (Schwann's sheath) of the nerves could be found immediately investing the centre fibre. The core is not, as commonly described, alike throughout, but an outer nucleated part may in most corpuscles be distinguished from the central, almost homogenous, non-nucleated substance, which appears, when carefully examined, indistinctly striated, and, in a transverse section, irregularly concentric. With regard to the capsular envelope, composed, as is well known, of concentric layers, Schäfer confirms in the main the observations of Key and Retzius, according to whom the supposed simple 'capsules' each consist of two layers of flattened cells, placed as it were back to back, the intercapsular spaces being not merely filled with an albuminous fluid, but to a greater or less extent pervaded by fibres both white and elastic. What have been hitherto called the capsules of the Pacinian corpuscles are not isolable without rupture of these fibres, and it is better to speak of the coat or tunic as the structural unit, meaning by this the space traversed by fibres, and the two layers of flat cells bounding it. These tunics or layers are easily separated in Pacinian corpuscles treated with chloride of gold, which coagulates the albuminous fluid, so that separation then takes place more readily between the two layers of cells of which each so-called capsule is composed, that is to say, between the tunics.

The continuity of the structures composing the entering nerve, and those of the corpuscle may be thus stated. The entering nerve and its sheath are composed of (1) the axis-cylinder; (2) the medullary sheath; (3) a delicate layer of protoplasm, with oval nuclei embedded in it; (4) the sheath of Schwann; (5) the numerous laminæ composing the neurilemma. Of these, the axis-cylinder (1) becomes the central fibre of the corpuscle; the medullary sheath (2) commonly, but not always, terminates as soon as the nerve enters the core (certainly not expanding to form the core as has been sometimes supposed). To take next the sheath of Schwann (4) this, when the nerve reaches the core, expands and passes to the outer part of the core. The main part, therefore, of the latter structure is continuous with the protoplasmic layer (3) which lies inside the sheath. The extreme outermost portion of the core is formed by a layer of connective tissue lying just inside the neurilemma. Finally, the coats of the Pacinian corpuscle agree and are continuous with the layers of the neurilemma (5), the latter consisting also of an outer and an inner bounding layer of flattened cells enclosing a space, which, however, in the case of the neurilemma contains

little or no fluid. The capsular envelope contains also more layers than the neurilemma, the more internal being, as Schäfer thinks, those that are superadded.—*London Medical Record.*

TAYLOR ON PULSATION IN THE VEINS.

In an article in the *Guy's Hospital Reports*, Dr. Frederick Taylor speaks as follows. Pulsation of the jugular veins has long been recognized as of frequent occurrence in the more advanced stages of cardiac disease, but its importance in diagnosis is differently estimated by authors. While some, as Niemeyer, regard a pulsation synchronous with the heart's beat as a pathognomonic sign of regurgitation through the tricuspid orifice; others, as Walshe and Friedreich, are of opinion that a true venous pulse may arise in cases where the tricuspid valve is functionally perfect. All, however, agree that it is in cases of tricuspid regurgitation that the jugular venous pulse is most distinct and most forcible, being easily perceptible to both sight and touch.

The mechanism of the pulsation in such cases is not difficult of comprehension, when the accompanying conditions are taken into consideration. The beginning of the trouble is frequently disease of the mitral valve, in the form of obstruction or regurgitation, or of both together; the interference in the circulation at this point leading to increased tension in the area of distribution of the pulmonary artery, and hence to over-distension, dilatation, and hypertrophy of the right ventricle. The tricuspid valve, then, may become incompetent in two ways; on the one hand, endocarditis affecting it may cause rounding or thickening of its free edges, shrinking of its substance, or adhesion of the cusps to one another, so that the valve is not extensive enough to cover the area of the auriculo-ventricular orifice; on the other hand, dilatation of the right ventricle may involve the valvular orifice to such an extent as to render it impossible for a valve of normal size to close it effectually. Niemeyer believes this is a rare case of incompetence, because, as he says, when the ostium dilates, the valves grow in breadth and length; but at any rate such a dilatation must add very much to the functional derangement produced by endocarditis.

As the valvular apparatus of the heart becomes more and more imperfect, the portions of the circulatory system next behind the tricuspid orifice become in their turn over-distended, and permanently dilated; these are, first, the right auricle, and secondly, the great veins of the thorax and neck. With increasing distension of the jugular veins the valves at the root of the neck, if at first acting efficiently, will in course of time be rendered useless, and then all the conditions necessary for pulsation of the cervical veins are present. With each contraction

of the over-filled right ventricle, blood is driven through the tricuspid orifice, and a movement communicated to that in the right auricle and vena cava; did the large veins contain only a moderate amount of blood, the force of the ventricular contraction might be lost in further distending them, but in their over filled condition the movement is communicated through the valves at the root of the neck to the column of the blood in the jugular vein, and a pulsation synchronous with the cardiac impulse is the result.

But the jugulars are not the only veins in which pulsation has been observed: Seidel and Geigel have described cases of tricuspid incompetency in which the inferior vena cava was seen to pulsate, and A. Burns, Senac, and Kreysig long ago showed that epigastric pulsation might be due to regurgitation of blood through the right auricle into the inferior vena cava and hepatic vein.—*London Medical Record.*

WICKHAM LEGG ON A SINGULAR EFFECT OF LIGATURE OF THE BILE-DUCT IN ANIMALS.

In the *St. Bartholomew Hospital Reports* for 1873, vol. ix., p. 175, and in a reprint from the *Archir für experiment, Pathologie and Pharmakologie*, Dr. J. W. Legg draws attention to a curious effect of ligature of the bile-duct, first observed by him during a series of experiments on animals intended to elucidate the pathological histology of the liver. It has been noted for some time, that after previous puncture of the fourth ventricle, poisoning by phosphorus prevents sugar from being found in the urine. Dr. Legg obtained a similar result on puncturing the fourth ventricle of an animal whose bile-duct had been ligatured six days before. This induced him to make fresh experiments. He began with six rabbits, but they succumbed to the operation too soon to allow further experiment. Cats were next selected; the procedure adopted being to first tie the bile-duct, and then, after five or six days, to feed the animal with milk, or milk with cane-sugar. It was then placed on Czermak's rabbit-holder, chloroformed, and an incision made over the occipital protuberance. Bernard's chisel was introduced immediately behind the protuberance; after boring through the bone, the chisel was pushed forwards and downwards, till it cut the line joining the two auditory meatus; it was then cautiously withdrawn. Then the cat was removed to a warm place, and an hour afterwards the urine was squeezed out of the bladder, and Trommer's test applied. In four successive trials no sugar could be detected; although in four other healthy cats, in whom the bile-duct was not tied, glycosuria was induced by a similar puncture of the fourth ventricle.—[W. Bathurst Woodman, M.D. in *London Medical Record.*

DEJERINE ON THE CONDITION OF THE SPINAL CORD IN A CASE OF TALIPES EQUINUS.

In the *Archives de Physiologie* for March and April, M. Déjérine describes the microscopical appearances found in the spinal cord of a well marked case of talipes equinus. After staining and clearing the sections in the ordinary manner, the following lesions of the grey matter of the vessels and of the neuroglia were noticed. About the lumbar enlargement, the right side, the same as that on which the deformity existed, the exterior portion of the anterior horn of grey matter was found to take the color of the carmine more deeply than the rest. The nerve-cells, with the exception of one or two that had lost their processes, and were much atrophied, had disappeared from this portion of the horn. The vessels here, in comparison with those on the left side, were much increased in number, and their walls thickened. In the rest of the horn the structure was normal. These alterations were most marked at the middle of the lumbar enlargement; from that point, both upwards and downwards, they gradually disappeared, the dorsal region not being affected. The posterior horn of the grey matter was normal.

In the same portion of the cord, the white substance had undergone sclerosis of the right antero-lateral column. The lateral column also presented a band of cortical sclerosis about 0.6 millimetre (0.24 inch) in thickness. This condition of the white matter occupied the whole of the lumbar region, disappearing, like the lesion of the grey matter, above and below. The nerve roots springing from this part were found to contain many tubes wanting in myeline; others had their myeline, but were much reduced in volume.

An examination was also made of those muscles which were affected in this case, the anterior muscles of the leg and the peronei. These were found to have undergone simple atrophy of the primitive bundles, the striation being preserved. There was also an increased production of connective tissue.

The points which the observer of this case thinks most important are the existence of the band of cortical sclerosis, and the marked limitation of the lesion in both the grey and the white matter.—[W. Kestevan, Jr., in *The London Medical Record.*]

VON BUHL ON A CASE OF TWIN MONSTROSITY.

A female twin monstrosity was exhibited by Prof. von Buhl, of Munich, at his pathological-anatomical demonstration on Feb. 6th, 1875 (*Ärztliches Intelligenzblatt*, No. 9, 1875). It had two heads and two bodies. There was union of the parts from the sternum to the umbilicus; the two breast-bones were fused into

one, to which the ribs on both sides were attached. There was an umbilical hernia about 2.35 inches in circumference; hence proceeded one umbilical cord, to one placenta, which contained two arteries and two veins, which divided immediately on entry into the fœtus. Each had an œsophagus and a stomach, which were fused into one duodenum, from which proceeded one jejunum, which in the region of the ileum formed itself into a wide sac, probably corresponding to the entry to the ductus omphalo-entericus; from this sac proceeded two ilea and colons, one for each individual. Meconium was only found in one. The two livers were fused together posteriorly. The most important abnormality was the heart. It was evidently two moulded into one. It contained two ventricles, each of which had taken on the functions of a left and a right ventricle; with one auricle, corresponding originally to four auricles. By means of small valvular arrangements it was divided into two, which directed the blood into corresponding ventricles. There was no septum ventriculorum; from each ventricle there arose one aorta and pulmonary artery. A small ductus Botalli was present on only one side. All the other organs were double.—[W. C. Grigg, M.D., in *The London Medical Record.*]

OBSTETRIC EXCERPTA.

BY JOSEPH HOLT, M.D.

PERINEAL TUMOR OF FŒTUS AN IMPEDIMENT TO DELIVERY.*

By C. Ellery Stedman, M.D., of Dorchester.

Mrs. A. B., aged twenty-two, of good constitution and excellent health, who was delivered of her first child a year and a half ago with forceps, by Dr. C. D. Homans, after a hard labor, expected to be confined about the 1st of February, 1875. She had not menstruated since the birth of her first child, a well-developed and healthy infant. On January 28th I was called to see her, and found her with a pulse of 130; the temperature was 103°; the respiration was rapid; cough, rachitic pains, considerable prostration, pain of throat and neck, and slight redness of the fauces. The next day there was a pultaceous patch the size of a little finger-nail on the left side of the uvula. This disappeared in twelve hours under the use of a lotion of chlorate of potassa. Wine and quinine, with frequent and nourishing food, were prescribed, and on February 1st she was nearly well.

During pregnancy she declared that the child was not carried like the first: she had had no fright, nor had she seen anything to annoy her. There were no twins nor monsters known in her family or in that of her husband. About February 18th she

* Read before the Obstetrical Society of Boston.

ceased to feel the motion of the child; a cold weight took its place, and she affirmed it was not living.

At 8 p. m. of February 24th labor began; the face presented, left mento-anterior; the cranial bones crepitated on pressure. The membranes having been ruptured, the pains became efficient; a little ether was given as they increased; the head was born easily, the shoulders with much effort. When the thorax had been delivered, no further progress was made; the abdomen felt as though another child was present. On introducing a hand along the child's back, an obstruction was discovered above the brim, where the breech of the fœtus was separated by a sulcus from another body swelling beyond it. Dr. Miller now saw the patient. The perforator, being carried up between the fœtal body and the operator's hand, was thrust into the tumor and gave vent to a prodigious burst of blood and water. Vigorous traction now brought away the child. The uterus, followed down by the hand, contracted firmly, and no hæmorrhage of moment ensued; the placenta came away directly. It was now seen that labor had been impeded by the growth upon the child's breech of a half-solid tumor, larger than the fœtal head. The incisions made by the perforator having been sewed up, the tumor resumed its size after stuffing, and a cast was taken by Dr. Bolles, who has placed it in the pathological cabinet of the City Hospital. He describes it as follows: "The tumor was situated behind the anus, and distended it somewhat. It evidently arose behind the rectum in the lower part of the pelvis: it was not attached to any of the pelvic organs, but could be easily and cleanly dissected away from them all. It was chiefly a large cyst which had been ruptured in delivery, and apparently contained degenerated blood. Into this cavity there projected from above several smaller tumors, in all a mass about three and one-half inches in diameter, the largest of which contained grumous fluid. The others were semi-solid, dark and pulpy." There was no evidence of fœtal inclusion. The tumor appeared to be glandular. Its largest circumference (antero posterior) was sixteen and one-half inches. The gland of Luschka is referred to as the origin of such growths.– *Boston Medical and Surgical Journal.*

MERCURY IN THE MILK OF WOMEN DURING THE "INUNCTION CURE."

Kahler (*Deutsches Zeitscher. f. Prakt. Med.*, from *Rundschau*, 1875, s. 260) made examinations of the milk of three nursing women by electrolytic chemical analysis, any mercury contained in the milk being deposited upon a little gold electrode. The amalgam thus obtained was heated in a glass tube, thus volatizing any mercury present. The latter was then converted into the iodide, giving a very striking reaction. Inunction of mercury

in nursing women practised so thoroughly as to cure any syphilitic manifestation which was present, yet failed to give a mercurial reaction to the milk. That some influence was at work was shown in certain cases in which syphilitic manifestations in the infant were cured even while no mercury could be found in the mother's milk.—*Philadelphia Medical Times.*

PLACENTA PRÆVIA.

By S. J. Radcliffe, M.D.,

Member of the American Medical Association, etc.

Placenta Prævia is one of those accidents incident to puerperal women, that may rightly be dreaded by both practitioner and patient, since its very rarity prevents the ordinary practitioner from becoming familiar with it. The only obstetric horror that can compare with it is convulsions; and these, anæsthetics have, in some measure, robbed of their terror.

In regard to the relative frequency and mortality of mother and child in puerperal convulsions and placenta prævia, Hodge says in regard to the first that authors vary exceedingly. "Thus, while Velpeau reports their frequency as one in a thousand, Madame Lachapelle fixes it at one in two hundred. Dr. Churchill, in his elaborate tables, gives the average French and English practice as one in six hundred and nineteen nearly." He says, "Merriman states that out of fifty-one births, thirty-four were still-born—about sixty-six per cent."

The second occurs about once in about five hundred cases. Dr. Hodge quotes Dr. Frank's Prize Essay and valuable tables, published in 1855 in the *Trans. Am. Med. Assoc.*, that deaths from unavoidable hemorrhage prior to the full period were twenty-four per cent., while the deaths among the children were one hundred and sixty-six in two hundred and sixty-two; being a mortality of sixty-three and one-half per cent. Barnes says, "I had occasion to review my experience of the terminations of sixty-nine cases of placenta prævia. The deaths were 6—*i. e.*, one in 11½, a proportion much smaller than that usually given in statistical tables."

With this view of the matter, then, this class of cases cannot be put off to a more convenient season. What must be done must be done quickly; promptness in action and in relief must be the uppermost thought, and, with this, a comprehensive view of the entire situation before you.

The main object to be kept constantly in mind is to staunch the hemorrhage, as the case may be, and thus to save life—to save the life of the mother at least first, and secondly of the child, if viable, if possible.

Whatever treatment may be decided upon ought to be the right

one for the emergency, for when once done it is done forever; it cannot be undone. But in the greatest emergency, and when hope of saving life may have almost fled, an attempt ought still to be made to do something towards it. I remember seeing a case at term with an intelligent physician of this city, several years since, where forced delivery was practised by turning under the use of ether, after means had been used to dilate the os and to bring on labor, without success. Though the case seemed to be a desperate one, the means seemed to be happily well adapted to the condition of things, and though there was considerable shock and great loss of blood, the woman rallied for the time, but died of pyæmia, or septicæmia, probably, on the twenty-first day after delivery. The child I resuscitated after considerable effort, and it is now living, a hearty, healthy child of about five years.

It appears to be the prevalent opinion at the present day that when there is imminent and immediate danger of loss of life, excessive hemorrhage, shock, and exhaustion of the vital powers, delivery should be attempted at once, without any regard to the general condition of the patient; and this, too, even at the expense of the child, unless it is clearly proven that it may be saved; though some, as Simpson, consider it ought hardly to influence the treatment.

If, then, we have a case of placenta prævia clearly made out by examination, no matter at what period of gestation it may be presented to us after the fifth month, with profuse hemorrhage, perhaps coming in gushes, or in a continuous stream, with much shock of the nervous system and failing of the vital powers, our duty is clearly to attempt to deliver without any delay, and banish the thought to protract gestation with a view of having a more favorable result; and in this event one of two procedures will occupy the attention: either to attempt to force the hand through the undilated cervix, seize the feet, turn, and forcibly deliver—*accouchement forcé* of the older writers—and then remove the secundines as rapidly as possible; or to introduce one or two fingers through the os and into the uterus as far as possible, sweep them rapidly around the cervical zone of Barnes, separating the placenta, as far as the fingers reach, from the uterus, as first recommended by Simpson, then rupture the membranes, if in no other way, directly through the placenta, bring on labor by ergot, the binder, or the tampon, and leave the case, under surveillance, to nature.

Those who believe, with Churchill, that "the flooding is the necessary consequence of the dilatation of the os uteri, by which the connection between the placenta and the uterus is separated, and the more labor advances the greater the disruption and the more excessive the hemorrhage," will adhere, perhaps, to the former plan: while those who admit that the detachment of the placenta arises from an excessive rate of growth of placenta over that of the cervix will more readily rely upon the latter.

The former operative procedure is considered a very harsh and cruel one, greatly endangering the life of the mother, not only immediately by forcible dilatation, by rupture or laceration of the soft parts and consequent hemorrhage, but more remotely by septic or pyæmic poisoning, and not necessarily adding to the chances of the safety of the child; while the separation of the placenta within a given circle is considered more practicable, more easily accomplished, and gives better results for the mother and some chance for the child, as the hemorrhage is almost certainly arrested. Barnes says, "There are two conditions present in flooding from placenta prævia. The *first, an immature uterus.* Flooding frequently occurs before the term of gestation is complete. The uterus is therefore taken by surprise before its tissue is developed, before it has acquired its normal contractile power. Besides this, the uterine neck is ill adapted to expand. The *second is the loss of blood* itself, impairing the vital power, causing shock and prostration. The several or the joint production of these conditions is a powerless labor, the absence of contraction. Hence the continuance of hemorrhage. We feel we cannot depend upon contractile force when all force is ebbing away with the blood; we are compelled to act, to assist nature in her extremity."

Considering the force of these two propositions as factors in the case—viz., first, immature uterus, and, secondly, loss of blood, as present in placenta prævia—we cannot be slow in appreciating also the force of the possible effects of treatment.—*Philadelphia Medical Times.*

ERYSIPELAS AND CHILD-BED FEVER.

By Thomas C. Minor, M D.

The design of the author will be seen in the following quotation:

"An inquiry into the connections said to exist between child-bed fever and erysipelas; also a short account of both diseases as they prevailed sporadically in the United States during the census year 1870, and an appendix containing the history of a puerperal fever epidemic observed in southwestern Ohio, in the winter of 1872," (p. 5.)

His special attention was directed to this subject, by the difference of opinion manifested in the Cincinnati Academy of Medicine, during a discussion on the question: Should a physician attend a case of labor, who has recently been in attendance upon patients suffering from erysipelas?

Contagion.—After some remarks upon the history of puerperal fever and its epidemics, and upon the epidemics of erysipelas which were more or less coincidental with the former, the author takes up the old battle subject of *contagion*, a question which

ought to have been set at rest long ago, but which we presume must, from the character of the human mind, always have its advocates and opponents, although it has to be admitted that those who believe in its potent influence can present an array of historical facts not at all easy to overbalance or controvert.

The question of the instrumentality of physicians and nurses in conveying a mysterious miasm, capable of inducing peritoneal inflammation in parturient women, was at one time a very active one in this city, and gave rise to the publication in this Journal, and several medical works, of numerous valuable papers, which collectively afford an exceedingly important, if not almost exhaustive record. The moving spirit in this discussion originated with the late Dr. David Rutter, who was so unfortunate as to meet with 95 cases of puerperal fever in his own private practice, with 18 deaths, in a period of four years and nine months (1841–1846), and at a time when there were very few cases in the hands of other physicians. The visitations of the disease at the Pennsylvania Hospital on several occasions, and at the Philadelphia Hospital, added to the general interest in the subject. As Dr. Minor makes no reference to any of the testimony published in this Journal in proof of contagion in this disease, and its intimate connection with erysipelas, we shall be excusable for enumerating some of the more important, viz.:

1. Discussion at the College of Physicians, of Philadelphia, reported in the October number, for 1842, pages 410–418.

2. Puerperal fever cases reported by Dr. Robert Storrs, of Doncaster, England, showing the propagation of the disease at his hands, from a case of gangrenous erysipelas, followed by repeated abscesses requiring the lancet (Jan. 1843, page 224).

3. Notice of a malignant epidemic which prevailed in the lying-in department of the Philadelphia Hospital, in March and April, 1842, (*Ibid.*, page 244, op. cit.) Out of nine children whose mothers had puerperal fever, five died of peritonitis in about a week after birth.

4. Contagiousness of puerperal fever, by Dr. Oliver W. Holmes (July, 1843, page 260 . * * * This paper contains quite an array of cases bearing upon the connection between the contagion of erysipelas and puerperal fever, and their power of interchange.

5. Drs. Hall and Dexter's account of the erysipelatous fever of Vermont and New Hampshire (Jan. 1844, page 13). * * * This is an interesting and valuable paper, showing the remarkable pathological connections which exist between some of the types of epidemic erysipelas, and puerperal fever.

"The most fatal results, for the most part, were to be anticipated in the affection of the internal organs, particularly the bowels and uterus, and during the season when the epidemic might be said to be at its height, not one in seven escaped, who had disease of the last-mentioned organ," (p. 191.)

Those who are only familiar with erysipelas as a cutaneous

malady, can form but a very imperfect estimate of that terrible type which is so allied to peritonitis as we find it after parturition, that some pathologists have been inclined to term the latter, "malignant internal erysipelas." (p. 19.) Erysipelas in fact will attack skin, connective tissue, inter-muscular laminæ, the mucous membranes, serous cavities, and many important viscera, such as the uterus, liver, intestines, etc.

"In the county of Caledonia, Vermont, thirty cases of puerperal peritonitis occurred, only one of which recovered. And in Bath, N. H., containing a population of 1500 to 1600, twenty mothers died from puerperal peritonitis, and about forty with erysipelas." (p. 21.)

In 1843, the cases in Dr. Rutter's practice amounted to 45: whilst at the same time Dr. William Klapp, who lived and practiced in the same section of Philadelphia, several times having labor cases in the same row, did not meet with one instance of the disease in two hundred parturient women, as he himself informed the reviewer. As there were no evidences of the disease being properly an epidemic, either from its relative fatality or general distribution among obstetricians, the misfortunes of Dr. Rutter excited a great deal of interest, and contagionists and their opponents warmly discussed the questions involved. Those interested in the matter are referred to the number of this Journal for October, 1842, page 412; Charles D. Meigs, on *Diseases of Women*, page 590; and Churchill, on *Diseases of Women*, edited by Condie, page 618.

Dr. Rutter, to rid himself of the mysterious influence which appeared to attend upon his practice, left the city for ten days, and before waiting upon the next parturient case, had his hair shaved off, and put on a wig; took a hot-bath, changed every article of his apparel, taking nothing with him that he had worn or carried, to his knowledge, on any former occasion; and mark the result. The lady notwithstanding that she had an easy parturition, was seized the next day with child-bed fever, and died on the eleventh day after the birth of her child. Two years later, he made another attempt at self-purification, and the next case attended fell a victim to the same disease.

Dr. Condie says (op. cit.):

"But he was charged with being a carrier of contagion. How could he carry the cause? What was the cause? Was it some ozone that stuck to his hands or coat?

Dr. C. D. Meigs remarks (op. cit.):

"*Does the Doctor generate and distil the poison, or merely transfer it?* If he transfers, why don't I also diffuse it? We are equally men, equally clothed. No, gentlemen, you do not carry the poison; you are merely unhappy in meeting with such accidents through God's providence."

Now suppose we should state, as we do upon the authority of an obstetrical contemporary of Dr. Rutter, that, at the period referred to, he was the subject of an obstinate muco-purulent

coryza, would not that give a reasonable solution of the mystery? Was his pocket-handkerchief not capable of conveying septic poison through his hands to the patient? Some would say no. But what says M. Chaufford, of Paris, as quoted in the last number of this Journal, page 287. *Every suppuration, every disease which produces morbid discharges, if in the vicinity of women in child-bed, will give rise in the latter to puerperal fever;* and he says he has particularly noted the effects of abscess, purulent opthalmia of infants, and erysipelas. The very successful and distinguished ovariotomist Mr. Spencer Wells, is in the habit of exacting a written and signed statement from each visitor to his operations, to the effect, that he has not been in attendance upon any case of zymotic disease. Ask Dr. Goodell, why he has not had a visitation of the fever among his cases at the Preston Retreat. He recognizes the danger that lies in infection and contagion, and acts accordingly, using every precaution to prevent the possibility of septic or other poisoning, manual or local.

Dr. C. D. Meigs states, page 591:

"Seeing that I could never convict myself of being the means of spreading the contagion, I remain incredulous as to the contagiousness of the malady."

It may be entirely coincidental, but we well remember a case which a brother physician put an entirely different construction upon. An eminent obstetrician stated to the writer, that Dr. M. was called in an emergency to deliver a patient of his, after he had left her a short time, the labor having been unexpectedly hastened in his absence. When he found what had been done, he remarked to his wife on reaching home, that he feared for the lady, and anticipated trouble for himself, because Dr. M. had been called from an opposite dwelling, where he was in attendance upon a case of puerperal fever. We do not say that Dr. M. took the disease to her; but she was shortly seized with it, and made a narrow escape for her life. A celebrated obstetrician who placed no credence in contagion in any disease, once said to the reviewer, upon discovering that one of his patients (and he had had a number of cases) had puerperal fever, "Well, Doctor, this is always my unfortunate luck." We accounted for this case, from the fact that his assistant in the labor had been dressing patients under surgical treatment; no doubt a fruitful source of the disease in the lying-in wards of many a general hospital.

Dr. James Blundell, in his *Principles and Practice of Obstetric Medicine*, page 551, remarks:

"Remember that the facts affirmative of contagion are so strong, that on this affirmation it becomes our duty to act."

In the records of puerperal fever we shall find many instances, where the disease has appeared in cases of sudden emergency, when the attendant has not had time to, or has failed to make the proper precautionary ablutions and changes necessary to prevent risk to his patient.

Seventy pages of the work of Dr. Minor are taken up with a critical examination of the census reports of our States and Territories for the year 1870, touching the mortality from puerperal fever and erysipelas; the geographical position, altitude, temperature, and rain-fall being given in each case. From this investigation it will appear that there was no epidemic of either malady at any point that year; that the two generally kept pace more or less with each other; that they were much less frequent among the white race than the black; and that they were most often met with in the spring months. The whole mortality amounted to 3162 from erysipelas, and 1828 from puerperal fever, in a population of nearly 39,000,000; and the largest proportion of deaths from each malady was in the month of March, which is memorable for its damp, cold winds.

In 1872 and 1873, puerperal fever and erysipelas prevailed as an epidemic in Cincinnati, Ohio, the deaths being 122 of the former, and 68 of the latter, against an annual average for the previous five years, of 13⅝ and 13¼ respectively. The history of this epidemic give some curious evidence of the interchangeable character of the two diseases.

"Dr. A. loses a patient from puerperal fever on the —— of July; duration of illness, 8 days. Six days afterward another 'death certificate,' puerperal fever, duration of illness, 8 days. On August, 'death certificate,' from erysipelas. Four days afterwards, 'death certificate,' from puerperal fever; duration of illness, 6 days. Several other instances of the same character are quoted, with regard to other physicians," (p. 116).

"It is a sad commentary on this last epidemic, that a few men, who attended cases of erysipelas and puerperal fever promiscuously, should have been most unfortunate in their practice. On the contrary, we notice some physicians, having a large practice, who lost not more than one or two cases of puerperal fever, and no erysipelas cases at all. I think the majority of our physicians refuse to attend confinement cases when they have erysipelas or puerperal fever cases on their hands." (p. 117).

Dr. Minor sums up the results of his investigations as follows:

1. "Erysipelas and puerperal fever seem to prevail together throughout all the States.

2. "Any marked increase in any locality of one disease, seems to be accompanied by a corresponding increase of the other.

3. "Where histories of past epidemics of either disease are obtainable from any of the States, the seeming connection of the two diseases was noticed by physicians at the time of such epidemics, and remarked on.

4. "For these reasons we are, I think, justified in concluding that there is an intimate connection existing between puerperal fever and erysipelas." (p. 119).

From a study of the Cincinnati epidemic, he makes the following deductions:

"Where an isolated death from puerperal fever was noted,

outside of the infected districts, a corresponding death from erysipelas was noted in the same locality. This was almost invariably the case.

"Infants die of erysipelas shortly after or before their mothers die of puerperal fever.

"A few physicians, attending puerperal fever cases and erysipelas cases at the same time, as exhibited by the death register, were most unfortunate in their practice.

"Physicians having large obstetrical practices, who are known to believe in the doctrine enunciated regarding the connection of puerperal fever and erysipelas, make an exhibit of but few death-certificates from either cause." (p. 120).

The following statement of Dr. Minor is of considerable interest and importance:

"An epidemic of scarlet fever is, at this date, (June, 1874) prevailing in this city, although now happily on the decline. This epidemic commenced in May, 1873, after the subsidence of the puerperal fever epidemic. No month was exempt from scarlet fever, although there were only 15 deaths from the disease during the first four months of the year. Only one of these occurred in April. After that, the deaths from scarlet fever increased each month, until there were from it 113 deaths in November, and 108 in December. The total deaths from this cause were 410." (p. 126).

Dr. Braxton Hicks remarks before the London Obstetrical Society. (*Trans.* vol. xii., 1870):

"There is no doubt that scarlet fever and erysipelas have much affinity; indeed some have suspected them to be but a slight modification of the same poison, apparently interchangeable."

But what says the Health Report of Cincinnati * * In 1874 (up to June 1st) puerperal fever did not prevail; less than the usual number of cases being reported; and the same is said of erysipelas. From May, 1873, to June, 1874, there were about 800 deaths from scarlet fever; and the number of cases was computed at from 6000 to 8000.

If epidemic puerperal peritonitis is due to the same peculiar poison which produces erysipelas, the peritoneal variety of which closely resembles it; then it must result from a combination of certain conditions and circumstances in and around the patient. Traumatic disturbance, acting upon a system peculiarly susceptible of erysipelas, will readily produce it, if the state of the atmosphere, the physical health of the subject, and his hygienic relations are favorable to its approach. We had one female patient who had several attacks of erysipelas in her left arm, but never in any other region; and by far the most severe one was excited by the prick of a needle in the index finger. Another subject, a boy of 17, with a penetrating wound of the thigh, had seven attacks of erysipelas at short intervals, due apparently to attempts made by stimulating dressings to cause the wound through the skin to granulate and heal over;

for under a very simple application there was no renewal of the inflammation, and the parts cicatrized.

There are seasons when, in a hospital, not only the slightest wounds become erysipelatous, but the disease will attack, as we have seen, cases under simple mechanical treatment, in the most severe and fatal form; such, for example, as a leg undergoing straightening of the knee by a screw-splint, for partial anchylosis, etc. * * Let a parturient woman have induced in her the same susceptibility, and her utero-placental laceration, like an amputated limb, will offer all the traumatism requisite as a starting-point for a fatal puerperal peritonitis. Increase this danger by an exposure to the infection of this disease, or erysipelas, and she may have the former without any special susceptibility other than the parturient state often produces. Expose her again to atmospheric or manual contamination from septic poison in the form of purulent discharges, or the taint of the autopsy, and you have puerperal septicæmia or phlebitis. It matters little, except for scientific interest, whether epidemic child-bed fever is a disease of multiform character, or whether its varieties are determined by the manner of its production, for all have more or less a fatal tendency under the most approved treatment; but it concerns us to determine how to protect the patient by precautionary and prophylactic measures.—R. P. H., *American Journal of the Medical Sciences.*

ON THE USE OF SALICYLIC ACID.

Professor Crede gives a short note (*Archiv für Gynäk.* Bd. vii. Heft 3) on the use of salicylic acid in gynæcological practice. He has employed it for the last six months, on the recommendation of Prof. Kolbe, instead of carbolic acid, as a disinfectant for the hands, as a vaginal injection in puerperal women, and for sprinkling over puerperal ulcers, etc. The strength of the solution is from 1 in 300 to 1 in 900, or as a powder mixed with starch, 1 in 5, or it may be used as salicylic-acid wool. Most favorable results have followed its employment, and Professor Crede desires strongly to recommend its use in midwifery practice.—*Obstetrical Journal.*

VAGINISMUS; ITS CAUSE, NATURE, AND TREATMENT.

Dr. Lutaud, in *Thèse de Paris*, No. 405, concludes that vaginismus is always symptomatic. It is a common affection which manifests itself chiefly after the first sexual congress. Vaginismus is often allied to dysmenorrhea, and to the troubles of general innervation. It is always curable, the cure being easier if the malady is recent. By the obstacle which it offers to the

accomplishment of sexual functions, vaginismus is a frequent cause of sterility. The treatment of vaginismus is simple; cauterization and dilatation are the principle means to overcome it.—*Obstetrical Journal.*

RUPTURE OF THE PERINEUM.

At a recent meeting of the New York Academy of Medicine, Dr. E. Noeggerath read a paper upon the above subject, and had been led to do so from the fact that, notwithstanding the thorough discussion it has received at the hands of authors, and comes so frequently under the observation of the physician, he had become convinced, from late discussions in the New York Obstetrical Society, that it is worth while to go over the ground again. As the matter now stands, it is a difficult question for the young practitioner to decide what he is to do when he meets with a lacerated perineum.

The remarks of the writer were confined exclusively to practical points in connection with means of preventing the occurrence of the accident, and of curing the injury done when it has taken place. The only reliable method of determining whether rupture of the perineum has taken place or not is by inspecting the parts. The term should include only those lacerations which reach near to or even involve the sphincter ani muscle.

To guard against the occurrence of the accident it is necessary to be acquainted with the circumstances which may favor it. These circumstances were considered under the head of presentation first, and the fourth position was regarded as the one in which rupture is most apt to occur. Smaller heads are more commonly accompanied by rupture than larger ones, and this is not strange.

The two principal conditions for guarding against the accident are—

1. Slow and gradual dilatation.
2. Equable distribution of pressure upon the periphery of the vaginal aperture.

There is a condition of the tissues characterized by a peculiar bluish color, indicating that they are unhealthy, which renders it impossible with the greatest care to prevent rupture from taking place. With regard to forceps being a prolific cause of rupture of the perineum, he had become convinced by his own experience that if rupture does occur while using the instrument, its location does *not* coincide with the position of the lower edge of the blade. Exceptions to this rule do occur, but they are only exceptions. There is no doubt about the fact that the proportion of rupture is larger when forceps are used, but the reason consists in the additional fact, first, that the blades of most instruments are too wide, and second, for obvious reasons, in-

strumental deliveries are terminated too rapidly, and the advice to extract the head in the interval of two pains is not generally observed. In faulty positions of the head the forceps may be an efficient means for saving the perineum from rupture. To prevent too rapid expulsion of the head chloroform is an efficient agent.

Among the means mentioned for the prevention of rupture were incisions upon each side from the vulva towards the ischii, and made with a bistouri or scissors.

A large number of ruptures of the perineum heal up without any interference in the way of operature procedure, but the parts are not thus reinstated to their natural condition.

The only rational method of treatment is to apply sutures as soon as possible after delivery, and the reason why the early operation has been abandoned for some time is because of want of knowledge of those conditions which are requisite to insure success. From various statistics it was claimed that success is obtained in about 75 in 100 cases, and some physicians cure every case upon which they perform the operation. The adoption of the operation does not exclude contra-indications, but a low condition of vitality is the only one to be taken into consideration in this connection.

The extent of the rupture itself should not be accounted as an indication for delaying the operation. Another contra-indication which has been urged is the danger of puerperal fever induced by the spread of poisonous elements from the canal of the sutures, especially at the time of their removal. If this was the case, it should be especially noted in New York, where this disease is so prevalent; but it has been determined that those patients whose perineal ruptures have been united immediately after the accident, stand the best chance in an epidemic of child-bed fever, and it is reasonable to expect that the closing up of a torn surface should diminish the chances of absorption from such surfaces. The method is in every case, where rupture is anticipated, to give chloroform when the head is impinging upon the perineum, in order to have the operation performed before the patient has returned to consciousness, or to spare the patient pain when the incisions are decided to be made. Except the paring of the edges, the method of operation is the same as when the operation is performed upon an old rupture.—*Obstetrical Journal.*

SURGERY.

[Compiled by SAMUEL LOGAN, M.D., Professor of Anatomy and Clinical Surgery, Medical Department, University of Louisiana.]

DAMIANA—THE NEW APHRODISIAC.

By Charles M'Questin, M.D.

I observed in the *Journal* of June last a notice of a new remedy, described by Dr. J. J. Caldwell, of Baltimore, M.D., in

the *Virginia Medical Monthly*. This remedy, damiana, I have used extensively in Mexico, where the Mexicans employ it as a domestic medicine. I can bear testimony to the efficacy of this plant in cases of sexual debility, or lethargy of the sexual organs. In these cases the results are all that could be desired. The leaves only of the plant are used. An infusion is made of one ounce of the dried leaves to a pint of water, and this amount is given daily. In a few days the effects are manifest. The infusion has an agreeable aromatic and slightly bitter taste. I am not prepared to state if its properties are those of an aromatic or stimulating tonic, but as to its aphrodisiac properties there can be no question.

There are but few bodily ailments that impose such discomfort upon the individual of either sex, as the inability to exercise the reproductive functions, and to beget and give birth to offspring. It is truly painful to witness the degree of misery, which in many instances the subjects of such defects are, by some unerring law of nature, destined to endure. Young men of robust and apparently healthy physique, often apply to physicians for some means of restoring the lost sexual desire. Standard authors recommend in those cases phosphorus, ergot of rye, cantharides, strychnia, etc.; but physicians well know that these remedies do not always give satisfaction. Damiana appears to be the most desirable remedy in such cases.

If my professional brethren desire to test the efficacy of this plant, I should be pleased to give them a suitable quantity, as I have a package at present in my office.

In conclusion, I can fully endorse the statement of Dr. Caldwell as to the aphrodisiac powers of damiana.

San Francisco, 230 Kearny Street

—*Pacific Med. and Surg. Journal.*

CASE OF HYPERIDROSIS; CURE.*

By John M. Bigelow, A.M., M.D., Albany, N. Y.

On January 20th, 1875, Mr. C. H. D., a clerk, aged twenty-six years, stout and healthy looking, consulted me with reference to the above mentioned infirmity. On questioning him I discovered no hereditary or acquired taint of scrofula, phthisis, or syphilis. He had been troubled with this complaint for about six years; and during this time had suffered, in addition to physical pain, so much mortification that he had shunned all society and social enjoyment. "So terrible was the *stench* from my sweating feet," he strongly stated, "that I would not even attend places of amusement or social gatherings." On inspection, his feet were found bathed in an extremely abundant, acrid, fetid secretion,

* Read before the Medical Society of the County of Albany, March 31, 1875.

the soles were fissured, and the spaces between the toes were chapped; the skin presented a parboiled appearance, and was very tender.

He had tried, with only temporary relief, brine, sugar-of-lead, carbolic acid, sulphuric acid, and other lotions. Owing to the condition of his feet, he wore cotton hose, and had powdered them with tannin.

I prescribed for him the following: bromo-chloralum, ℥j, water, ℥ij. Apply three times daily with a soft sponge, having previously dried the feet thoroughly with hot flannel.

For a few days his hopes of cure were raised, only to be followed by a relapse more severe than ever. I then prescribed the application of equal parts of borax and lycopodium, to be worn in the socks. On February 20th he returned to my office much discouraged, and said that all treatment thus far relieved for a few days, and then became inert. I then directed him to take to his bed, and began Hardy's treatment, as introduced by Hebra. I gave no internal remedies. I applied dyachylon-plaster, as follows: cutting it into strips, I twisted them around each toe separately, and also applied them to the interdigital spaces, completely enveloping the whole foot, so that every portion of the sole, dorsum, and toes of the feet was in close and immediate contact with the plaster. These strips were removed each morning, the feet carefully and thoroughly wiped with dry, heated flannel, and new plaster strips applied. This treatment was persevered in for thirteen days, and at the expiration of that time the plasters were removed, and the feet presented a healthy normal appearance, free from the troublesome hyperidrosis. Since that time (March 2d) I have seen the patient twice each week, but so far the cure is complete, and he assures me that he now enjoys comfort and ease in walking, and can avail himself of the pleasures of society without any disagreeable odor to announce his presence.—*New York Medical Journal.*

SUBSTITUTE FOR THE ELASTIC STOCKING.

By Walter H. O'Neal,

Physician to Adams County Almshouse, Gettysburg, Pa.

The following device was originated by my father, Dr. J. W. C. O'Neal, and has been used in the wards of the hospital under my care. It is cheap, efficient, and easily prepared.

To a limb requiring support, a well-fitting bandage is applied, over which and on either side a coat of well-made and strained starch is added. Then pasteboard softened in liquid starch is applied, leaving a line of unstiffened material, front and back. Over this is added a bandage, which, in turn, is secured by

paste. The limb is now suffered to lie quiet until the apparatus hardens.—*New York Medical Journal.*

TREATMENT OF ABSCESS OF BREAST BY COMPRESSED SPONGE.

A patient had been suffering from mammary abscess for three weeks, but without any special benefit from treatment in checking the discharge of pus. It was decided to try the effect of compressed sponge, and for this purpose a sponge about ten inches in diameter was subjected to pressure and then applied by means of a bandage over the breast. After it had been in use forty-eight hours the abscess was completely cured. No pain was experienced by the patient, and in this case the opening in the breast was three inches above the dependent part of the abscess. In applying a sponge to the breast in this class of cases, it is found of advantage to compress it when dry. After it is applied to the breast and firmly secured in position, a little water is poured upon it to cause expansion and the necessary pressure.—*New York Medical Journal.*

MOUNT SINAI HOSPITAL: HYPODERMIC INJECTIONS; CORROSIVE SUBLIMATE IN SYPHILIS.

In this hospital hypodermic injections of corrosive sublimate in the treatment of syphilis have been made continuously, and so far without the formation of an abscess. They are specially found of advantage where the stomach is in an irritable state. The solution is made as follows:

Hydrarg. bichlorid., gr. iij,
Morphia mur., gr. ij,
Aquæ, ℥j. M.

Of this one-half drachm is used as an injection once a day for fourteen days.—*New York Medical Journal.*

MODIFICATION OF THE OPERATION FOR CLEFT PALATE.

In a clinical lecture by Mr. Francis Mason, of St. Thomas's Hospital, published in the London *Lancet* for January, that gentleman mentions a little device by which Sir William Ferguson's manner of performing Dieffenbach's operation for closing a fissure of the hard palate is made easier of execution. He first makes, with a gimlet, at a suitable distance from the border of the

fissure, the necessary number of holes for the passage of the sutures. He then, with the same instrument, bores a number of holes quite near to each other, in the lines where the chisel is to divide the hard palate, and so facilitates the action of the last-named instrument. This last manœuvre constitutes the improvement, and insures separation taking place in precisely the desired line, just as the perforation of a sheet of postage-stamps does.—*New York Medical Journal.*

OVARIOTOMY.

The following point in the differential diagnosis of ovarian tumor is found in the report of a case of ovariotomy in the *Boston Medical and Surgical Journal* of July 22d, 1875.

Examination showed pretty conclusively that the liver was not the seat of the growth, and a fibroid of the uterus was at length excluded by means of a procedure which I have reason to think is new. The uterus was found to be retroverted, the cervix movable, but the fundus held firmly. The tumor could not be reached per vaginam, and no direct impulse or wave of fluctuation could be transmitted from the epigastric region to the uterus owing to the amount of ascitic fluid intervening between the abdominal walls and the uppermost part of the tumor. The uterine sound was of no avail. In this dilemma I placed the patient in the knee-elbow posture, with the idea that if the tumor were a fibroid its weight would cause it to sink in the ascitic fluid until it rested on the abdominal walls; in this position I should be able to obtain by palpitation some information as to the character of its surface, and at the same time send a direct forcible impulse to the uterus, but, more especially, could derive some indications from the change in the shape of the vagina and its relations to the cervix uteri. I argued that if the tumor were a fibroid, continuous with or closely attached to the uterus, its weight, dragging upon the vagina by means of the cervix, would cause the vagina to be drawn out into a long funnel, at the end of which would be the cervix, not projecting as before, but so retracted as to be almost level with the surface of the vagina. A thin-walled ovarian cyst, on the other hand, would be scarcely heavier than the ascitic fluid; it would consequently not change its position materially on change of the patient's posture, its slight amount of traction would not bear upon the uterus alone, but would be distributed throughout the broad ligament, from which its pedicle would chiefly spring: as a consequence of these conditions, the vagina would be less distorted and the prominence of the cervix be less modified: in addition, the impulse from above would not be forcibly transmitted to the uterus, and the surface of the tumor would not

become accessible to palpitation. Two contingencies might nullify the inferences to be drawn from these indications—the presence of pelvic adhesions, and a partially solid character of an ovarian tumor. But adhesions are known to be rare with fibroid tumors, and as far as my experience goes, the more solid portion of multilocular ovarian cysts is generally situated in the pelvis and easily accessible. This method is of course only applicable to small and medium sized tumors surrounded by considerable ascitic fluid. Governed by the above considerations I diagnosticated an ovarian cyst, probably unilocular, free from adhesions, and with no solid part, but surrounded by a varying amount of ascitic fluid.

SALICYLIC vs. CARBOLIC ACID.

Professor Lister returned to Edinburgh on the 22d ult., having spent about two months in travelling through Germany and visiting the large German hospitals. At Munich and at Leipzig the learned professor was entertained at banquets in honor of his visit. Speaking on one of these occasions as to the relative value of salicylic and carbolic acids, he said that as far as he was able to judge at present, carbolic acid gave far better results in antiseptic surgery than its new rival. The opinion of such an authority as Professor Lister on this point will, doubtless, have great weight with those surgeons who have adopted the antiseptic system; but we suppose it must be regarded as a kind of interim judgment till the professor has had larger opportunities of comparing the two acids.—*Medical Times and Gazette.*

TRANSPLANTATION OF BONE.

A novel description of transplantation is mentioned as having been described by Nussbaum, at a surgical conference held at Munich, in which he discussed certain forms of malunion after fractures, with special reference to what is known as pseudarthrosis, and the treatment applicable under such conditions. If, after the loss of a considerable quantity of bone, fragments are widely separated, and possess only a ligamentous union, he suggests that a piece of bone should be transplanted from one of the fragments to supply the deficiency, and he has accomplished this in one case with a successful result. This was in an officer who had sustained an extensively comminuted fracture of the ulna from a gunshot injury, which, after necrosis, and separation of the small pieces, had healed, leaving a false joint with the ends of the fragments two inches apart, and united only by a slender ligamentous band. Although

the radius was unbroken, there was considerable unnatural mobility, and great impairment of the usefulness of the arm. In performing the operation the seat of fracture was first exposed, and then, after removing the intervening fibrous band, a piece of bone two inches long, and involving half the thickness of the ulna, was separated from the upper fragment by means of a saw and chisel, so that it was left adhering only to the tip by means of a narrow bridge of periosteum; it was then brought down so as to occupy the interval between the fragments, sutures were placed in the wound, and the limb was supported in a plaster-of Paris splint with a window. All went on well after the operation, the wound closed in the course of a few weeks after the separation of a minute sequestrum, which only amounted to about one-tenth of the transplanted portion. "The piece of bone which had been transplanted had united, and could be distinctly felt," and after a while, "the firmness of the now uninterrupted ulna was clearly established." After six months the use of the arm had so far returned that the patient was pronounced fit for service.—*Medical and Surgical Reporter.*

SALICYLIC ACID IN CATARRH OF THE URINARY ORGANS.

Dr. Paul Fürbringer gives an account, in the *Berliner Klin. Wochens.*, 1875, No. 19, of four cases in which salicylic acid was used internally to combat alkaline fermentation of the urine.

The first case was that of a phthisical and paralyzed young man, whose urine was alkaline, fetid, threw down a voluminous precipitate of triple phosphate, urate of ammonium, and pus corpuscles, and contained an innumerable number of bacteria. He was ordered fifteen grains of the acid in a mucilaginous potion daily, and after three days the urine showed an acid reaction with much less odor. The use of the acid for a longer period removed all the sediment, but the death of the patient put an end to the observations. The second and fourth observations were in general much the same; but the third case, that of a man who had suffered for years from chronic cystitis, was treated by local injections, or rather by washing out the bladder with a one-fifth per cent. aqueous solution of salicylic acid by means of a double catheter, the internal use of the acid being simultaneously continued. The improvement in all these cases, as indicated in the change from alkaline to acid reaction, in clearing up of the sediment, and in diminution and death of the bacteria previously found in the urine, points to this remedy as efficient in such affections as bring about alkalescence of this fluid. Dr. F.'s conclusions are as follows:

1. Salicylic acid administered internally in relatively small doses prevents alkaline fermentation in the urine.

2. It does not, however, prevent the secretion of pus in the urinary passages.—*Philadelphia Medical Times.*

LEAD PELLETS SUBSTITUTED FOR PHARYNGEAL FORCEPS IN SEARCH OF IMPACTED BONE IN THE ŒSOPHAGUS, WITH SUCCESSFUL RESULT.

By Robert Torrance, L.R.C.S.E., Matfen.

The following history illustrates one of those cases where the surgeon is at times placed in a dilemma, while he also must exercise the most peremptory means in his power for the recovery if possible of his patient. On Tuesday, the 11th ult., I was requested by a farmer to go hurriedly and visit his wife, Mrs. M—, of this parish, who, to use his own provincialism, was afraid she would "soon be fettin away" unless relief was very soon procured. On hastening to the house, I certainly found the patient in a very distressing condition. The countenance had a very characteristic expression of anxiety, and great weakness had resulted from the deficient supply of nourishment for four days previously. While she was eating a piece of rabbit pie for dinner, by some unaccountable means part of the shoulder-blade became lodged in the œsophagus. With great difficulty she swallowed large doses of castor oil for the first two or three days, for the purpose of acting as an emetic in her endeavor to induce its expulsion before seeking aid; but all were of no avail. On the third day there was considerable abatement of the symptoms, but only to be followed the next morning by sudden spasm of the glottis, alternating with what appeared to me to be inordinate contraction of the muscular fibres, from the hissing noises produced in the throat. All this, however, resolved itself a short time afterwards by the use of hot baths and antispasmodic medicines, though some time elapsed before a succession of different-sized bougies even could be passed.

As the patient was very weak, the fauces were first irritated by a feather, thinking this might be sufficient to induce violent expulsive efforts, and carry out the foreign body; but this had no effect whatever, but to increase the patient's agony. A stimulant emetic of mustard and water was next administered with some effort, as she was still unable to perform the act of deglutition, the attempt causing her great pain; and it was only by throwing the head well back and allowing it to be poured in gradually, that we succeeded at all, but only to meet with a similar result. The pharyngeal forceps were then introduced, finding their way a little lower down than the commencement of the œsophagus. Seizing the bone, I made sundry efforts to dislodge it by varied traction power, but was obliged to desist, becoming alarmed by a pretty profuse discharge of hæmorrhage from the mouth. Two courses only were left to me now, either

to trust to removal by the ulcerative process, which would soon have (if it had not already, from the foregoing symptom) been excited by pressure on the tissues concerned, or to perform œsophagotomy. While debating with myself as to which of these should be adopted, I devised a contrivance for the purpose which, I am happy to say, proved effective. A few lead pellets were procured, and I had them firmly secured at the distal end by the ordinary suture wire. As the patient was unable to swallow, the pellets enabled each wire to find its way down the canal, the meshes of the whole becoming entangled with the bone, probably in different parts; and, by pulling two or three of the wires at the proximal end, varying them now and again, the bone was released from its position, much to the delight of the patient, and not less so to my own satisfaction. There can be little doubt, I think, that during the four days of delay, from the pressure and irritation of the bone, unorganizable matter had been effused into the coats of the gullet, and had more or less caused their contraction and thickening, thus rendering its extraction somewhat more tedious than it might otherwise have been.—*British Medical Journal.*

CASE OF PARACENTESIS PERICARDII: IODINE INJECTIONS.

By G. E. Moore, M.R.C.S.,

House Physician to King's College Hospital.

The following case of suppurative pericarditis occurred in the practice of Mr. E. Pearl, of Windsor, who kindly permitted me to watch and share the treatment with him.

I need not detail the pericarditic symptoms; suffice it to say, that the patient, a strong lad, aged 13 years, living in Windsor, was taken ill on the 15th of last October; that ten days after a loud "to and fro" friction-sound was heard, which was soon followed by extension of the area of pericardial dulness; that, from October 27th until November 7th, he gradually got worse, in spite of the application of all the ordinary methods of treatment; and that the heart-sounds became fainter and more distant, with gradual diminution, ending in complete subsidence of the pericardial rub. An abscess formed on the dorsum of each foot in the second week of the disease.

On November 8th, Dr. George Johnson was called in consultation. He diagnosed suppurative pericarditis, and agreed in the proposal to perform paracentesis, as, under ordinary treatment, the case was sure to prove fatal.

On November 9th, before the first operation, the boy was very exhausted, and desirous of some relief. There was great dyspnœa. Respirations 50 in a minute; pulse 160, very irregular.

The præcordium was prominent. The heart-sounds were a confused murmur, heard only at the base. There was extensive pericardial dulness. Paracentesis was performed by Mr. J. W. Gooch, of Eton, with the aspirator, the previously formed vacuum being put in communication with the needle as soon as the distal aperture had passed through the skin. The puncture was made in the fifth left intercostal space, just internal to the normal situation of the heart's apex, and the needle was directed inwards, upwards, and a little backwards. By this means twenty-one ounces of purulent fluid were drawn off. During the withdrawal of the fluid, the patient complained only of the needle pricking in the skin; there was not the least symptom of syncope, and he expressed himself as much relieved. Immediately afterwards, the respirations came down to 30 a minute. The pulse was 120, much stronger and regular. For about twenty minutes, there lasted an incessant cough, with a little viscid frothy sputum. Normal heart-sounds could be heard both at the base and apex. The pericardial dulness was diminished to almost the normal limits.

On the 10th and 11th, he seemed much better.

On the 13th, the pulse was again irregular, intermitting every third beat.

On the 14th, the physical signs indicated great increase in the fluid, and the operation was done a second time, thirty-five ounces being drawn off. The patient again expressed himself as being greatly relieved.

On the 15th the boy seemed much better. He had passed a good night; and symptoms of œdema of the left lung, which had previously appeared, were less marked.

From the 16th to the 20th, he gradually relapsed, and an offensive and exhausting diarrhœa came on, which was checked by a little chalk mixture.

On the 21st, the dulness then extending up to the clavicle and quite round from the right mamma to the spine behind, paracentesis was again done for the third time, and sixty ounces of purulent fluid was again drawn off. We then injected slowly, by reversing the action of the aspirator, two ounces of a mixture of one part of tincture of iodine to two parts of water, previously warmed to the temperature of the body. We intended to remove half this; but on setting the vacuum in communication with the pericardial cavity, air entered by the side of the needle, which, from the longer retention than usual, had become loose. The needle was then withdrawn, and the injection left in the pericardial sac. The patient complained of no pain at the time, and was not aware until afterwards that anything had been injected. During the next half-hour, he expressed himself as much relieved, and in no pain. Pulse 118; respiration 28. The cough came on for a short time as before.

On the 22d and 23, the patient seemed much better; his appe-

tite improved, and his pulse became stronger and more regular. The air which had entered the pericardium gave rise to a tympanic note on percussion, and the "mill-wheel" sound was heard all over the front of the chest, quite obliterating the normal heart-sounds. This continued until the 27th, when sudden symptoms of increase in the effusion were observed.

On the 30th, his parents described him as having had fits of syncope, in which he became quite livid. His breathing was very labored. A friction-sound, synchronous with the respiration, was then heard at the front of the base of the left lung.

The next day, December 1st, we tapped for the fourth time, making the puncture as nearly as possible at the same spot, but avoiding the old ones, and drawing off fifty ounces of pus and the little air that had entered at the last operation. There was no offensive odor. This was followed up by an injection of two ounces of a solution of equal parts of tincture of iodine and water. The operation was again attended by temporary relief. Pain, with slight swelling, was then noticed over the right hip-joint. The abscesses on the feet had healed up.

The boy seemed better for a day or two, sitting up and eating well, but on December 4th, without waiting for the symptoms of pericardial distension, we tapped for the fifth time, drawing off thirty ounces of greenish pus and injecting the iodine. This was repeated on the 7th, when only nine ounces were drawn off, the solution injected consisting this time of two parts of tincture of iodine to one part of water. There was no pain at the time, but a transient sensation of warmth was felt soon afterwards. But the patient did not get better; he had profuse sweats at night, and there was slight fluctuation over the right trochanter. He remainded in much the same condition until the 10th, supported by a generous diet, port wine, iron, and quinine; the heart-sounds being audible at the base and apex, and the area of pericardial dulness almost normal. There was complete absence of breath-sounds, with dulness on percussion over a space behind corresponding to the upper part of the lower lobe of the left lung.

After this the patient rapidly became worse. Symptoms of peritonitis appeared, with vomiting and diarhœa, proving fatal on December 17th.

At a *post mortem* examination made the day afterwards, on removing the sternum, the anterior part of the lower lobe of the left lung was found bound down by adhesions over the front of the pericardium, and was crepitant to the finger. The pericardium itself, distended by about a pint of thick pus, extended backwards to the posterior wall of the thorax; it was much thickened, and covered by soft purulent lymph. The posterior part of the lower lobe was completely collapsed and pushed away from the spinal column by the distended pericardium. The heart itself was pale and softened, the microscope showing fatty

degeneration of the muscular fibre. In the abdomen, the peritoneum was very injected, covered in places by purulent lymph, and contained a small quantity of fluid. The liver was congested and fatty, the kidneys congested.

Remarks.—The operation of paracentesis pericardii has been done many times; but I believe this to be the only case in which iodine injections have been used. The other case, mentioned by Trousseau, was done by Aran, of Paris, twenty years ago. Many objections naturally obtruded themselves on what may seem to some a rash line of treatment, but I was led to propose the injection of iodine for the following reasons: the case was analagous to that of empyema; there was already one instance on record in which that mode of treatment had been successful; and, lastly, by the kindness and assistance of Dr. Rutherford, I was enabled experimentally to demonstrate, in the King's College Laboratory, the immediate effect upon the pulse of stimulation of the pericardium. We found, in two experiments—one on a cat, the other on a dog—that, on pinching the pericardium, there was a distinct inhibition of the heart's action (a fact before noticed by Dr. Rutherford), being most marked when the visceral layer was excited, but also observed when the parietal layer was stimulated; and that on injecting thirty minims of the pharmacopœial tincture of iodine, there was transient retardation of the pulse with slight increase in the arterial blood-pressure (4-10 *millimetres* of the mercurial column). These effects of pericardial stimulation did not, however, appear of sufficient gravity to contraindicate the operation.—*British Medical Journal.*

ENLARGED PROSTATE MISTAKEN FOR CALCULUS.

M. Ripault, of Dijon, was called to assist at an operation for stone. The patient was an adult, in whom all the usual symptoms of calculus were present: the characteristic sound occasioned by striking the sound against a hard body was distinctly heard by several persons, and the existence of a stone undoubted. The lateral operation was performed; the bladder was opened, but the forceps, several times introduced, brought away nothing but clots of blood. An encysted stone was suspected, but the operation was discontinued. Nevertheless, the pains which the patient previously experienced ceased for some months, after which they recurred with greater violence; difficulty of micturition increased; the urine became ammoniacal; fever set in; and the patient died six months after the operation. On post-mortem examination the prostate was found enlarged, composed of tough fibrous tissue, very horny on section, and when struck with a sound gave the same sensation as was experienced during life.—*Medical Times and Gazette.*

DISEASES OF WOMEN AND CHILDREN.

BY THOMAS LAYTON, M.D.P.

CHLORAL AND BROMIDE OF POTASSIUM IN ENEMA, FOR DISEASES OF WOMEN.

Dr. G. de G. Griffith recommends (*Brit. Med. Journ.*, May 8, 1875) the administration of chloral and bromide of potassium by enema in diseases of women as the best, since it does not nauseate, or give that unpleasant taste in the mouth which remains long with some patients, nor does it occasion the burning in the mouth, throat and stomach, of which many patients complain, a sensation which may be prevented in the rectum by beating up the drug with a raw egg, or even two raw eggs, a little warm milk being added to further the solution. One great advantage is that the gastric nerves are not affected, as they are when the medicine is taken by the mouth, in which latter case they seem completely deadened, or, as it were, narcotized, a result that tends to impair the appetite.

He relates a case of violent puerperal mania in which, after quieting the patient with chloroform, he gave nutrient injections, to which he added bromide potassium one drachm, and half a drachm of chloral, with the best effects.

Dr. G. says that he has since used the chloral in half drachm doses, with a lady suffering the agonies of gall stones, and in whom the stomach was so constantly irritable that no medicine could be retained; chloroform inhalation to narcotism, morphia by subcutaneous injection, and every conceivable remedy, had been tried to allay pain, and procure rest and sleep, but had all failed. In ten to fifteen minutes after the rectal injection of chloral, pain was assuaged, and in half an hour sleep was procured. I have in this manner also used it when menstrual pain and sickness could perhaps have been relieved in no other way; also in cases of uterine and ovarian irritation, where pain, such as we have in those affections, varied from the mildest to the severest states. In irritable rectum, also, I have found it most efficacious, and have just commenced to use it as a vaginal suppository. In uterine, ovarian, and rectal cases, it is an especially valuable agent, inasmuch as it is brought into immediate contact with the affected nerves, and acts upon them directly, deadening any hyperæsthetic conditions, and relieving pain.—*American Journal of the Medical Sciences.*

EFFICACY OF BLOOD-LETTING IN THE OBSTINATE VOMITING OF PREGNANCY.

In a letter addressed to Professor Courty (*Archives Générales*

de Medecine, January, 1875, Dr. Dax calls attention to a mode of treatment suggested in a periodical called *Agenda-Formulaire*, for 1874, under the head of vomiting; cauterization of the cervix (?), induction of abortion (?).

Because pregnancy is the cause of the sickness, its arrest, it is said, cures the disease. In other words, to save the mother kill the child. As this manual is chiefly consulted by young practitioners, Dr. Dax warns against the adoption of the precept by inexperienced beginners, both on the score of its criminality and its danger, and advises in its stead bleeding, and in doing so, reviews the various opinions of this mode of treatment, held by several leading authorities.

M. Dax gives a brief account of the results of five personal observations.

1. In 1844, a lady, pregnant for the first time, at the third month suffered from continued vomiting and nausea, which nothing relieved. She was bled to about three and a quarter ounces, and kept in a horizontal position for a couple of days and on a spare fluid diet. By the third day she was up and about, could eat well, and the sickness entirely disappeared. She was delivered at full term.

2. Madame P. (1855) who believed herself six weeks pregnant, vomited up to midday, less in the evening, and sometimes not at all. Treatment for fifteen days with anodynes, enemata, etc., made her worse rather than better. She was of an exceedingly nervous temperament, and was with difficulty persuaded to be bled. She was treated as in the previous case. On the fourth day she got up, and did not vomit again.

3. In October, 1863, M. Dax was consulted in the case of a primipara pregnant four months, who had not ceased from vomiting since the commencement. She was attenuated, pale, thin, feeble, and very nervous. M. Dax advised repose, pastiles de Vichy, etc., with no amelioration at the end of eight days. Opium was ordered to be given, and the same treatment continued. She was no better, but vomited everything, and was anæmic to the highest degree. She was bled to between three and four ounces. The same after-treatment was followed as in No. 1. By the third day there was slight retching; no food was returned. From this day she could get up, and all vomiting ceased. She went her full term.

4. Madame S. (1872), a multipara, pregnant three months, had miscarried previously at seven months. When seen she was very pale and very thin, suffered in the kidneys, was continually sick, and had no sleep. She was ordered to bed without benefit. She was bled to the extent of about three ounces and a half, vomited no more, and was able to sleep two hours. At the end of fifteen days she could get up, walk, sleep, and eat. She had no return of the sickness, and was confined at full term.

5. On September 18, 1874, M. Dax saw Madame Ch., who suffered from the kidneys. She had borne once, and was pregnant

between three and four months. She was continually sick. He took away about three ounces and a half of blood, and advised rest in bed and a spare diet. No sickness returned. What was most remarkable was, that the ascitic fluid, which was considerable in the peritoneal cavity, entirely disappeared, and the patient, he was led to believe, continued well, and gestation proceeded normally.

In case 3, the peril to mother and child was extreme. The danger to mother and child by this treatment is imaginary—it saves both.

In conclusion, the author remarks that, although he believes he has conclusively proved the efficacy of bleeding, still he advises the trial of the ordinary remedies—ice, opium, effervescing drinks, baths, change of air, exercise or rest, choice of diet, and all other known hygienic and therapeutic agents; these in many cases suffice, but in extreme instances no remedy is so powerful as bleeding.—*London Medical Record*, March 24, 1875.

METRO-PERITONITIS FOLLOWING THE USE OF THE ORDINARY FEMALE SYRINGE.

Dr. Thomas More Madden communicated (Feb. 13, 1875) to Dublin Obstetrical Society a case of this. In the discussion to which it gave rise, Dr. Lombe Athill said he did not think the occurrence of uterine colic following the injection of fluids by the syringe was a very rare occurrence, inasmuch as he had seen three cases of it in his own practice. In one case only a few drops of glycerin were injected into the cavity of the uterus, as recommended by Dr. Marion Sims, and it produced most intense colic, but no peritonitis or endo-metritis followed. Some two years ago he was called, late at night, to see a patient whom he had directed to use a weak solution of borax injected into the vagina with an ordinary syringe. He found her in a state of collapse, suffering from pain referred to the uterus and sickness of stomach. Her symptoms were speedily relieved, and no inflammation followed; while a less severe attack occurred in a patient who used tepid water only. He thought these cases, in which the injection of a fluid into the uterus was followed by colic, were far from being of very rare occurrence, and he advised that the central hole in the nozzle of the syringe be stopped, as a means of preventing this accident.* He did not think, however, that the data given by Dr. Madden carried out his theory that the fluid passed into the Fallopian tubes, and thence into

* [Dr. J. S. Price, of Frankfort, Kentucky, wrote us some months since, that, having met with two cases of severe uterine colic following vaginal injections he was induced to have the central hole in the nozzle of the syringe closed, since which time he has never had another case of this accident. It is just to Dr. Price to state that that he could hardly have known that the same expedient was resorted to by Dr. Madden.—Ed. *Am. Journ. Med. Sci.*]

the peritoneum. The phenomena in Dr. Madden's case might be explained by the occurrence of a severe attack of endo-metritis in the first instance, followed by peritonitis. The exact same train of symptoms which Dr. Madden had described—the prostration, collapse, and vomiting—occurred in a patient where he (the President) had swabbed out the uterus with perchloride of iron. The patient was suffering from profuse hemorrhage, occurring some weeks after abortion; the os was patulous, and he had no difficulty in passing a pledget of cotton, saturated with the styptic, into the uterus; this was followed by a train of symptoms exactly similar to those Dr. Madden had described, but it was impossible that the fluid was passed through the Fallopian tubes. Certainly Dr. Madden was quite right in saying that vaginal injections were not perfectly free from danger. He (the President) greatly preferred a douche, similar to that spoken of by Dr. Madden, to the use of a vaginal syringe, and he had recently (acting on a suggestion of Dr. Emmett, of New York) carried out that plan extensively. Dr. Emmett advocated strongly this vaginal irrigation with water, varying from 95° to 105° of temperature.

Dr. McClintock observed that every one who dabbled in gynæcology thought he was perfectly safe in practising vaginal injection. Dr. Madden, however, had given them another instance of what they were all familiar with, that the simplest remedies and operations, apparently the safest, will in rare and exceptional cases prove highly injurious or even dangerous to life; and instances might be given where even a small incision had been followed by death. But the occurrence of such rare instances ought not to deter us from the use of any remedy, whether surgical or therapeutical. They could not speak positively as to the cause of the alarming symptoms described by Dr. Madden. They never could know whether any of the fluid went into the cavity of the uterus or not. All they could say was that such was possible, and, in Dr. Madden's case, the circumstances were highly favorable for the entrance of the fluid into the uterine cavity, as the lady had only been three weeks confined, the os was patulous, and the uterus was prolapsed. Hitherto he (Dr. McClintock) had been in the habit of telling his patients that they might use the syringe freely, and that it could not do any possible harm; but now he saw such a direction would not be always a safe one. He had seen sharp pain follow an injection, but no serious consequences. He could quite understand that when the injection was introduced cold it might be injurious, and he had generally told his patients to use it tepid and gradually reduce the temperature. He had an opportunity of seeing the case which Dr. Madden had brought under their notice, and he agreed in Dr. Madden's diagnosis. There was no doubt whatever but that she had a dangerous attack of metro-peritonitis following the use of the injection, and evidently produced by it. The case was, therefore, very striking and re-

markable, and should be kept before their recollection.—*Dublin Journal of Medical Science*, March, 1875.

THE VIENNA TREATMENT OF UTERINE HEMORRHAGE.

Dr. Carl v. Rokitansky, jr., may fairly be regarded as a representative of the German, or at least of the Vienna, school of gynæcology. If we examine, therefore, his most recent utterances on the subject,* we may expect to get a most reasonable idea of what advances our German brethren are making in the treatment of this class of affections, and wherein their methods differ from our own.

Two indications for treatment in general are pointed out by Dr. Rokitansky: first, to stop the excessive hemorrhage of the moment; second, to prevent its return. The general treatment to fulfil these indications must consist in the exhibition of repressive medicaments, and in the administration of a proper regimen, while the local therapeutics should be directed towards a pharmaceutic effect upon the vaginal or uterine mucous membrane on the one hand, and against the exciting causes of bleeding in the uterus on the other.

One of the important points in the treatment of uterine hemorrhage is rest—rest in the horizontal position, with raised hips, the coverings not too warm, no movement, not even in emptying the bladder or rectum. All excitement is to be avoided; the food and drink are to be of the simplest character; roast meat and ice-cold soda water are the best nourishment. The chamber should be kept at an even temperature and supplied with plenty of fresh air. Everything which can cause congestion of the pelvic organs is to be avoided.

In what is called active uterine hemorrhage, particularly metritis hæmorrhagica, cold in all forms is to be avoided, because, while its transitory application tends to cause congestion, its continuous employment is not to be thought of. The application of frequently-changed cold compresses to the abdomen is, however, to be recommended. In these cases the plentiful application of leeches to the lower portion of the abdomen, or even to the vagina itself just before the menstrual period, is often extremely effective. In light cases these means, combined with mild laxatives and tonics, will place the patient in an improved position; and these precautions should be taken by all women liable to hemorrhage at the menstrual period.

In menorrhagia, which is simply the expression of general debility, marked improvement follows the use of tonics, and particularly preparations of iron. When the loss of blood is not due to uterine disease, improvement of the skin's action, strength-

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* "Ueber Gebarmutterblutungen und deren Behandlung," *Wiener Klinik*, 1 Jahr., 4 Heft, April, 1875.

ening of the general health, and regulation of the bowels, aid greatly in the cure. A systematic course of hydro-therapeutics is often of great benefit in these cases. In all severe cases of profuse hemorrhage, which tend rapidly to anæmia, it is indispensable, during the intervals, to stimulate the strength of the patient to the utmost degree possible.

In what is called passive hemorrhage, which is by far the most usual form of profuse menstruation, and which, by lasting weeks, or even months, brings the patient almost to dissolution, cold may be used with propriety. This means, however, frequently fails, and the physician is constrained to employ pharmaceutical or occasionally mechanical applications to the uterine mucous membrane. The medicaments used for this purpose are astringents, or more usually caustics. These are used in the solid or the fluid state. The use of powders has been of late almost entirely given up. Of the various medicaments, none can replace nitrate of silver. The others are usually tardy in their action, and often produce untoward symptoms (as the uterine colic brought on by the mixture of alum and sulphate of copper).

Whether or not the speculum is used in making these applications, their use should always be preceded by examinations with the uterine sound, in order to ascertain as exactly as possible the situation, the condition, and the irritability of the uterus.

Dr. Rokitansky recommends the use of the lunar caustic in considerable quantity: if a small piece is used it is wasted in coagulating the blood, and does not reach the mucous membrane itself. He never uses the caustic until the cervix has been dilated. Slight pain is caused by its use, which usually lasts only a few minutes, occasionally an hour or so. Nausea, and even vomiting, may occur. Very exceptionally the pain may last a day or so, or give rise to feverishness. Dr. R. has only in a single case observed the supervention of dangerous symptoms. One precaution should be observed, particularly in walking cases—that is, not to cauterize too energetically the first time. The irritability of the uterus should first be tried, and if there is a tendency to uterine colic it should gradually be accustomed to the application.

As to the method of applying the caustic: after the cervix is dilated sufficiently, and the uterine axis brought as nearly into a normal position as possible, a stick of caustic, perhaps an inch long, is introduced by a sidewise motion, either by means of forceps or on the end of a quill from which, after the caustic is placed in position, the latter is broken off. The introduction must be rapid, or the inner cervix may close before the caustic is completely introduced.

A cylindrical speculum of hard rubber is preferred by Dr. Rokitansky, who advises also that no effort be made at forcing it into position. If, for any reason, this cannot be employed, a "porte-caustique" or "uterus pistole" may be used. In most

cases cauterization one, two, three, or four times every second, third, or fourth day will control the hemorrhage. Relapse may be prevented by the use of extract of ergot. Digitalis, tincture of cannabis Indica, rue, savin, etc., are nearly useless.

Two methods of cauterization with fluids may be used: either cotton-wool soaked in the medicament and introduced by any of the ordinary instruments through a rubber speculum, or intra-uterine injection. The latter method is highly praised by many authors, who, at the same time warn against the evil effects which may easily follow. The best guarantee against such effects is the continuous patency of the entire cervical canal, and this can best be obtained by previous dilation with sponge tents or laminaria. This of course allows free exit to the injected fluids, and prevents the danger of their being forced into the Fallopian tubes. In addition to this precaution, it is necessary to inject no more than three, four, or at most six drops at any one time, and to inject only very slowly, and drop by drop. By this means the danger is reduced to a minimum.

These injections, as well as any kind of cauterization of the uterus, are to be avoided only when there are inflammatory processes in the uterus or its adnexa, or in its immediate neighborhood. Version or flexions of the uterus are not to be regarded as contra-indications, but call for the greatest care. Among medicaments, neutral liquor ferri sesquichlor. and tincture of iodine are the best.

When the porte-caustique is used, the patient should lie on her back, with the hips elevated. In making the application by other means, the position may be any of those usually taken. The vagina should be protected by a tampon of cotton-wool slightly impregnated with glycerin.

Recently injections of hot water have been recommended in post-partum hemorrhage by Dr. Windelband; but these have not yet been fairly tried.

Among the mechanical means of arresting hemorrhage, the sponge tent is the most prominent. For instance, if the usual means of controlling uterine hemorrhage fail and a polypus is suspected, the first thing to do is to dilate the cervix and make an examination. Occasionally the use of the tent a single time will in itself put an end to the bleeding; and if the pressure is directly upon some excrescence, this may disappear, removing at once the hemorrhage and its exciting cause.

Dr. Rokitansky only uses the sponge tent in cases of extreme necessity, and never leaves it longer than six, or at most eight, hours in position.

As to tamponing the vagina with cotton, charpie, etc., impregnated with liq. ferri sesquichlor., this procedure rarely has any lasting effect; and if these tampons are left too long in position, infection, or at least local irritation, may result. Colpeurynters filled with ice-water are better; but where the physician is sud-

dently confronted with immediately threatening hemorrhage, tamponing as above may be an absolute necessity.

In cases of uterine fibroid when removal cannot be performed, dilatation of the cervix with injection of the tinct. iodinii may prove servicable.

Finally, the hypodermic injection of ergotin is very useful when the hemorrhage proceeds from uterine fibroid.

When the cause of hemorrhage is to be traced to polypoid growths, these must be removed, if they can be reached by instruments. When they are not attainable, injections of ergotin and the cold douche may be used. Dilatation of the cervix by sponge tent is not to be resorted to unless the strongest necessity exists. Cancerous growths are to be removed by the galvanocautery, the sharp spoon, or the actual cautery, followed, when the eschar falls, by Wynn Williams' solution (one part bromine to five parts alcohol) When cancerous nodules still remain after this last operation, the bromide solution may be injected directly into the parenchyma of these tumors.—*Philadelphia Medical Times.*

TREATMENT OF FIBROUS TUMORS OF THE UTERUS BY ERGOT.

Abstract of a paper read at the Meeting of the American Medical Association at Louisville, May, 1875, by W. H. Byford, M.D.

The publication of Hildebrandt's articles on the use of ergot in the treatment of fibrous tumors of the uterus, had for its object the solution of the question, viz.: will ergot effect a cure of these tumors?

The analysis of one hundred and three cases, the histories of which I have obtained from journals and correspondents, answers the question conclusively, as I think, in the affirmative. Twenty-three cases out of the whole number are reported cured; in thirty eight more the tumors were diminished in size, and the hemorrhage and other disagreeable symptoms removed; nineteen of the remainder were benefitted by the relief of the hemorrhages and leucorrhœal discharges, while the size and other conditions of the tumors were unchanged. Of the total number, only twenty-one entirely resisted treatment This shows results decidedly favorable in eighty two of the hundred and three cases. We may still further appreciate the favorable effects of the treatment, by the consideration that in twenty-one cases it was suspended, which is as great a number as resisted treatment. It is a noticeable fact that some of the cases in which the treatment was suspended were very much benefited by it. The great obstacle to arriving at accurate results, has been the difficulty in carrying out the treatment. Not much uniformity has been observed in the manner of using the ergot. Some recommend and use it hypodermically only, while others administer it hypodermically, internally by the stomach, and in the form of suppo-

sitories in the vagina and rectum. The principal objections to the use of the hypodermic method are, the pain inflicted by the needle, and the inflammation and suppuration which ensue in a large proportion of cases. On this account many patients who began treatment refused to continue it, and their cases were abandoned. Where there has not been too much exhaustion, or too great gastric irritability, ergot has been given internally with beneficial results in a majority of instances, while in a few it seemed to have no influence whatever, where marked benefit had been observed when it was given hypodermically.

There has been as little uniformity in selecting the place at which to make the injection as there has been in the method of administering the remedy. The deltoid region, just posterior to the great trochanter, and the lower part of the abdomen have been the principal places selected, but it undoubtedly makes but little difference where the insertion is made. Several cases have been reported where the injections have been made into the cervix uteri and the substance of the tumor, when accessible, with very beneficial results.

As the preparation of the medicine employed seems to have had much to do in causing the irritation, especially when given hypodermically, efforts have been made to find some form that would not produce the inflammation so often resulting in abscesses. Hildebrandt is now in the habit of using Dr. Wernich's formula for the watery extract of ergot, which according to Dr. Mundi is very similar to the solid extract of ergot made by Dr. Squibb. Most American practitioners now use Dr. Squibb's solid extract; some of them by dissolving in pure water, while others add to the water a small amount of pure glycerine. Dr. Squibb recommends a solution of this extract to be made as follows: Dissolve 200 grains of the extract in 250 minims of water, by stirring; filter the solution through paper, and make up to 360 minims by washing the residue on the filter with a little water. Each minim of this solution represents four grains of the ergot in powder. Of this solution, from ten to twenty minims are injected once a day or one in two days. This is the only preparation I have used in hypodermic injections, and I believe it is the best we can at present procure.

There is undoubtedly great necessity in having the solution freshly prepared, as in a very short time it deteriorates and becomes more irritating to the tissues. When ergot is administered freshly prepared, it generally produces prompt effects. In most instances in half an hour the patient experiences painful contractions of the uterus. The hand applied over the organ at once recognizes the increased hardness in the mass. These contractions increase in severity for the first two hours and then continue with vigor from six to ten hours, gradually becoming less until they cease entirely. Some patients suffer so much from these pains as to refuse to proceed in the treatment, while others bear them without much inconvenience. We do not

always observe these painful effects, even when the drug operates very beneficially. Sometimes the hemorrhages are controlled as it were insensibly, and the tumor slowly decreases in size without the patient experiencing any considerable discomfort. It seems highly probable from the statements made by my correspondents, as well as from my own observations, that the benefits of the remedy are produced with more rapidity in the early part of the treatment.

The preparation used internally more frequently than any other, is the fluid extract, either alone or in combination with belladonna. Each minim of Squibb's fluid extract is equal to one grain of ergot. Some recommend it to be given in doses of thirty drops, three or four times a day. Others believe it should be given in larger doses, less frequently repeated, as per example: one drachm once or twice in twenty-four hours. It is efficacious given in either way, but probably more so in the larger and less frequent doses. This preparation is so offensive, and causes so much nausea in exceptional instances, that it cannot be borne. Dr. Squibb claims that his solid extract does not offend the stomach so frequently as the fluid extract. The solid extract may be used in pills coated with gelatine. A pill of five grains is equal to thirty grains of crude ergot, and may be administered twice or three times daily.

From observation of the effects of the different preparations, I am satisfied that this is altogether the most efficient and agreeable for internal administration. A suppository for the rectum may be composed of fifteen grains of the solid extract and enough gelatine to give it size and form. I have no doubt of the great usefulness of this method of administering ergot. I think it is also quite certain that the addition of belladonna in some cases increases the curative effects of ergot, but to what extent it is difficult to ascertain. Ergot produces many good effects besides reducing the size of the tumor and affording relief of the hemorrhages. I have seen, and some of my correspondents mention, great functional improvement in the more important organs. Some patients are relieved by it of obstinate constipation; the appetite is improved and the general health restored. This remarkable effect is obviously due to its action on the ganglionic nervous system. In exceptional instances ergot produces very disagreeable effects, such as great heat and tenderness in the uterine region, metritis, phlebitis, vertigo, nervous perturbation, etc.

The beneficial effects of ergot may be increased by the means of auxiliary treatment. The well known alterative and sorbefacient medicines have in rare instances been credited with the cure of tumors without the aid of ergot, and it is not difficult to understand that absorption may be promoted with more certainty by the alkaline bromides and iodides, where the vitality of the tumor is first impaired by the action of ergot on its vessels and the muscular fibres surrounding it. A few, who have reported

cases cured, have prescribed as auxiliary treatment the iodide of potassium and the bichloride of mercury, and quite a number have combined belladonna with the ergot. How much may be effected by judicious alterative and auxiliary treatment will doubtless be determined by future observation.

Much can be done to prevent or ameliorate the disagreeable effects of ergot in certain exceptional instances. The distressing pain caused by it may sometimes be made more tolerable by the administration of hydrate of chloral, without very materially influencing its other effects. Indigestion, constipation, and nervous debility may be corrected by tonics, alteratives, laxatives, and stimulants given at the same time with ergot. In short, the general condition of the patient should be cared for in the same rational manner as if ergot was not being administered.

Observation seems to show that a fibrous tumor of the uterus may be affected by ergot in three ways:

1st. It is gradually disintegrated and absorbed. In this way it disappears without any violent or disagreeable symptoms.

2d. Its nutrition is so interrupted as to produce a rapid destruction of its vitality; and hence decomposition within the capsule and a semi-putrid mass expelled. This process is accompanied with evidences of inflammation of the uterus and toxæmia, more or less grave, according to the size of the tumor, the length of time between the commencement of decomposition and the expulsion of the tumor, and the vital resistance of the patient.

3d. The tumor in nearly its original condition is totally or partially expelled from the cavity of the uterus, attended with varying degrees of inversion of the organ. In this condition it becomes amenable to surgical processes for completing its removal.—*The Medical Examiner.*

THE ANTISEPTIC TREATMENT OF MASTITIS BY LISTER'S METHOD.

E. Heyder (*Centralblatt für Med. Wissen.*, No. 19, 1875) describes the method usually employed in Bardeleben's clinic. When, in spite of ice-bladders and support, an abscess has developed in the mammæ, he washes the surface with a one-and-a-half per cent. solution of carbolic acid, and then under the carbolic spray he makes an extensive incision and opens a way out for the pus by the finger. Subsequently, counter-openings are made, and drainage-tubes placed in each opening. Compresses of lint and gauze are placed over the wounds, and the whole is kept in place by a gauze bandage. All dressings are soaked for three hours in a five per cent. carbolic acid solution, and then preserved in a one-and-a-half per cent. solution. After twelve hours the second dressing is applied over the other, consisting of several gauze compresses, the outer one covered with a piece of rubber cloth. The dressing is not again changed until the secretion soaks

through. The author's preference for this method is based upon the fact that the fever quickly abates after the incision has been made, the secretion of pus can be restrained, and the cure is accomplished in from eleven to fifteen days. New abscesses seldom make their appearance. The author recommends the procedure for private practice, being quicker and more convenient than that ordinarily used.—*Philadelphia Medical Times.*

VOMITING OF PREGNANCY.

In the *Journal de Médécine et Chirurgie Pratiques*, Dr. Pitois, of Rennes, publishes two observations, in which the obstinate vomitings of pregnancy, rebellious to ordinary agencies, yielded readily to the administration of hyoscyamine. The formula used was composed as follows: hyoscyamine, five milligrammes (grs. 7-10), in a four ounce mixture; dose, one tablespoonful every hour.

PRACTICAL MEDICINE.

BY S. M. BEMISS, M.D.,

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The paper read at the late meeting of the American Medical Association by Prof. Gross, on blood-letting, under the title of "A Lost Art in Medicine," has no doubt called the attention of the profession to this subject. On account, therefore of the present interest in this subject, we make room for the following temperate and excellent address.

ON THE HISTORY OF BLEEDING, AND ITS DISUSE IN MODERN PRACTICE.

Extracts from an Address delivered at the Annual Meeting of the Bath and Bristol Branch, by W. Mitchell Clarke, M.D., M.R.C.S., England, Consulting Surgeon to the Bristol General Hospital; President of the Branch.

After describing his experience of the mode of practice followed when he commenced the study of the medical profession as an apprentice, Mr. Clarke said: Since that time, the management of disease by the antiphlogistic treatment has been gradually and completely given up; and this, I think, is the greatest change that has been made. There have been many others; but this abandonment of the old heroic plans, and the substitution

of a more careful following of natural processes, stands preëminent, and is so great that, as I said before, the whole condition of things is altogether so altered that it appears to be entirely new.

We are not likely to see so great a transformation again, and more particularly as to the complete way in which the principal item of the antiphlogistic class, viz., bleeding, has been given up. It would be difficult to overestimate the influence that bleeding has had upon medical practice, from a period almost beyond the beginning of the history of medicine, or how in a vast number of cases the chief point considered was whether the patient should be bled or not. No doubt there have been great variations in the amount of bleeding done, and there have been opponents of the practice asserting that it was never necessary from the earliest times; but, on the whole, it has been the most important part of medical treatment from very early times.

It is not easy to trace the exact beginning, but it was in free use in the time of Hippocrates, from which it may be fairly inferred that it was introduced long before by the schools of the Asclepiadæ. The discovery of the probe and the employment of bandages for wounds is attributed to one of the three individuals who were distinguished by the name of Æsculapius; but there is no mention of the lancet at so early a period.

The practice of purging, too, is recorded of a time long before we have any mention of bleeding. Thus Melampius is said, long before the times of any of the Æsculapii, to have cured the daughters of Prætus, King of Argos, by the free use of hellebore; and we have retained until modern times the name Melampodium. But no mention of bleeding is made so early, nor, indeed, until we find it used as an ordinary remedy by Hippocrates and his school. Homer makes no note of bleeding in either the *Iliad* or the *Odyssey*, although it has always been a matter of wonder how ingenious he was in inventing various kinds of wounds and injuries. We know from this author that two surgeons, at least, accompanied the Trojan army to the siege of Troy, Podalirius and Machaon, reputed sons of the Æsculapius who is said to have first used the probe and bandages. They do not appear to have practised bleeding. Perhaps, if Homer had known what we do, they would have been esteemed still more for that omission.

Podalirius, it is said, was cast, on his return, by a tempest on the shore of Caria. A shepherd rescued him, and, learning that he was a physician, says Renouard (a surgeon would have been more correct, as Celsus says they only treated wounds, "sed vulneribus tantummodo, ferro et medicamentis, mederi solitos esse"), he conducted him to Dametus, the king of the country, whose daughter had lately accidentally fallen from the top of the house. She was insensible and motionless, and the attendants already supposed her dead; but this skillful surgeon bled her from both arms, and had the happiness of restoring her life.

Here is the first example of bleeding practised for the purpose of a cure; unhappily, it is not very authentic.

There is, in truth, no certain notice of phlebotomy until it stands out clearly as a common practice in the time of Hippocrates; and a search after the precise time, or the particular operator who first was bold enough to plunge in the lancet and abstract blood, will only lead to disappointment.

The Greeks derived their earliest medical knowledge from the Egyptians, but there is no evidence that they learned from them the art of bleeding, or that it was ever employed by them.

The Chinese claim even a greater antiquity than the Egyptians; but there is no evidence of the practice having been employed by them, nor by any other of the ancient Eastern nations. (Bancroft.)

Although, however, we cannot ascertain the exact period during which bleeding has been in vogue, we know that it was in use for nearly 2500 years; and I have often thought that the remarkable and abrupt cessation from its use in our own times has not surprised us so much as, when we consider the subject, it ought to have done. Whether we consider the antiquity and duration of the practice, and the universality of its employment, or the completeness of its abandonment now, it is equally astounding—nothing less than a complete revolution in the practice of medicine.

Experience must, indeed, as Hippocrates says in his first aphorism, be fallacious, if we decide that a means of treatment, sanctioned by the use of between two and three thousand years, and upheld by the authority of the ablest men of past times, is finally and forever given up. This seems to me to be the most interesting and important question in connection with this subject. Is the relinquishment of bleeding final? or shall we see by and by, or will our successors see, a resumption of the practice? This, I take it is a very difficult question to answer; and he would be a very bold man who, after looking carefully through the history of the past, would venture to assert that bleeding will not be profitably employed any more.

There have been opponents of the practice from the earliest times; and this is one of the strongest arguments against those who have held, or hold now, that bleeding has gone out because of a change in the type of disease, or because of a deterioration in the strength of the present race of patients. There have been, also, periods when it has been scantily, and others when it has been profusely, employed; and some of the facts connected with this point seem to show that, although the change of type theory cannot afford the whole explanation, yet there have been times when bleeding has been better borne, or more beneficial than at others.

Nearly as early as the time of Hippocrates, who "sometimes carried bleeding to a great extent, even in chronic diseases" (Hamilton), we find that Chrysippus, a pupil of Eudoxus of

Cnidos, had an insuperable objection both to purgatives and venesection. (Hamilton, p. 71.)

Again, Erasistratus, who is supposed to have been a contemporary with Herophilus, and to have flourished in the reign of Seleucus, about three hundred years before our era, and is admitted by all but Galen, whose inordinate veneration for Hippocrates too often leads him to be unjust to the merits of others, to have been an anatomist of the first skill, and a practitioner of the first reputation, according to Galen, wholly banished the use of the lancet; but we are informed by others that, without absolutely interdicting it, he was much more sparing of bleeding than other practitioners. (Hamilton, pp. 85 and 89.)

There is no difficulty in finding evidence of the free use of bleeding in most periods of medical history; and, although not so distinct, there may yet be traced with sufficient clearness marks of the varying frequency with which it was employed. I have alluded to two instances of abstinence from bleeding at very early periods; my next illustration belongs to another time and another school.

Galen, in his work addressed to the Roman followers of Erasistratus, details how, when he first came to Rome, he saw patient after patient die suffocated with pneumonia and angina, because the physicians refused to bleed; by way of contrast, he triumphantly records how he had been called to see the steward of a rich man in the suburbs of Rome, who had been suffering under ophthalmia for twenty days, and had been treated without benefit by the family physician, who was of the Erasistratean sect. "I found the patient," says Galen, "a plethoric young man, with intense inflammation, swelling, and pain and discharge. Knowing what the treatment had been, I said that it was impossible I could take charge of such a patient in the suburbs, and that I ought to see him very frequently for at least three days. Let me take him home, I said, for three days. They assented gladly. I at once drew three pounds of blood, and, at three o'clock, one more." He was wonderfully relieved next day; and, with other treatment, much as we should employ it now, the patient recovered. We learn, also, that the master of the steward, on hearing what had made so admirable a cure, nicknamed his Erasistratean physician Αἱμαῤῥάξος, Anglicè Blood-funker. (Cooper's *Surgical Dict.*, p. 54.)

For the practice of bleeding largely in pleurisy and pneumonia, which Hippocrates and Galen had enjoined, the Arabs substituted one entirely opposite; they prescribed pricking slightly the vein of the foot, to let the blood flow drop by drop. Their method prevailed throughout Europe until the commencement of the sixteenth century; then, a pleuritic epidemic having appeared several times in the capital of France, a physician of Paris, named Pierre Brisset, distressed to see the most of his patients perish, and encouraged, also, by reading the Greek authors, dared to revive their practice. The success he ob-

tamed filled him with enthusiasm; he hastened to publish it, and proclaimed boldly the superiority of the method of Hippocrates to that of Avicenna. (Renouard, Trans., p. 323.)

It has generally been, I believe, during the occurrence of some epidemic in which the treatment at the time in fashion has been found to be unsuccessful, that bleeding has been resorted to at one time, and abandoned at another; and this, I think, speaks plainly in favor of the landmarks by which both modern and ancient physicians profess to have been guided.

I cannot find time to cite the numerous instances in which bleeding was avoided. Abernethy appears to have had a wholesome dread of it, whilst yet he bled freely. He says: I have seen a patient bled and bled; and, two or three days after, the medical man has been glad to throw in the bark, and try every means when it was too late." Again: "I have lived in London all my life, and am very chary of taking blood; but still, if some were to see how I would bleed a patient in inflammation of a vital organ, they would wonder." (Cooper's *Dict.*, p. 56.)

But it is not only with regard to very long periods of history that this change with regard to the practice of bleeding has occurred. Dr. Adams the learned translator of Hippocrates for the old Sydenham Society, says: "Then there is given a general rule for bleeding in diseases which certainly is well deserving of attention at the present time, when professional opinions on this point are very much unsettled. Now-a-days we have abandoned all general rules of practice, and profess to be guided solely by experience; but how variable and uncertain are its results in the present case. I myself—albeit but verging towards the decline of life—can well remember the time when a physician would have run the risk of being indicted for culpable homicide if he had ventured to bleed a patient in common fever; about twenty-five years ago, venesection in fever, and in almost every disease, was the established order of the day; and now what shall I state as the general practice that has been sanctioned by the experience of the present generation? I can scarcely say, so variable has the practice become in fever and in many other diseases of later years." (Sydenham Society's Translation of Hippocrates, vol. i, p. 307.)

We certainly cannot say now that the practice is variable, for we are most decidedly living in one of the periods when the lancet is carried idly in its silver case; no one bleeds; and yet from the way in which I find that my friends retain their lancets, and keep them from rusting, I cannot help thinking that they look forward to a time when they will employ them again. And there certainly may come a period when a recurrence of similar conditions may lead to a revival of the practice; we can only hope that this will not be, except upon the most substantial evidence, not upon the apparent success of some popular practitioner.

There can be no doubt that, at some periods, bleeding was

used in frightful excess, and such seems to have been the case at the time just preceding that of which I am writing. We cannot read the accounts that have been given by Stokes and others without seeing how the practice was abused; and most of the older of us will have met with instances in which permanent injury had been done to the individual by it. It appears in this place to have been carried to as great, if not to a greater, excess than anywhere; and I have heard many stories of the way in which the patients at the infirmary and other places used to be bled all round by the students, and that in the most lavish manner. When we come to inquire as to what immediately led to the giving up of bleeding, I think we shall be inclined to say that it was the excess of the last generation that caused the utter collapse of the practice.

Dr. Bennett alleges that it has paled before the brighter light of modern pathology; and, no doubt the more correct discrimination of disease that we make now, the better diagnosis that we attain, has had much to do with confirming and endorsing the relinquishment of the practice; but the proof of the advantage, so far as it has been derived from statistics and advanced pathological science, seems to me rather to have followed than to have preceded it.

The statistics which prove pneumonia, apoplexy, etc., to have a better rate of recovery without than with bleeding, certainly were produced after the use of it was given up, and when it was being sought to account for this change; but no doubt they settled and established the issue.

The consideration of the subject of apoplexy will show how much our advanced and increased knowledge of its causes must influence us when we deliberate upon the advantage or disadvantage of employing bleeding as a means of treatment of it. Thirty years ago, every one falling into a fit, or even threatening to do so, would inevitably have been bled, and that profusely; but, from what we know now, we may, I think, say that many were fatally bled. At that time, most of the cases of sudden hemiplegia, with or without coma, were attributed to apoplexy, which was divided in the works on medicine into sanguineous and serous; and to the latter class were assigned all the cases in which very slight morbid appearances, or none at all, were found after death; if the serum were but visible, why then it had undergone *post mortem* absorption or transudation, or, at all events, it had been there, but had disappeared.

At this time, we know that many of these cases must have depended upon defective circulation, some upon embolism, some upon minute vegetations detached from one of the valves of the heart, and washed along in the blood until arrested by a cerebral artery, and other conditions in which bleeding is, and must have been, absolutely injurious.

Of these cases, large numbers must have been of the pseudo-apoplectic character, which Stokes has so well described, and

which, he says, "differ from ordinary sanguineous apoplexy in three particulars, namely, the frequent repetition of the seizures, the rarity of consequent paralysis, and the fact that there is not only danger from an antiphlogistic treatment, but benefit, both remedial and preventive, from the use of stimulants. (Stokes on *Diseases of Heart and Aorta*, p. 322.)

I do not think that this condition is even yet sufficiently apprehended; but it is fortunate, because it is not always easy to say with which condition we are dealing, that statistics are forthcoming to show that bleeding must have been injurious even in sanguineous apoplexy.

Again, our whole knowledge of the conditions that we now class under the names of septicæmia, pyæmia, embolism, etc., has been acquired in the last twenty or thirty years; and what a difference our recognition of these, imperfect and crude as it is, has made in our estimate of the propriety of bleeding. In a pleurisy, or a pneumonia, a pericarditis, or arachnitis that proceeds from septic conditions, no one would dream of bleeding; and yet these acute affections—most acute and intense, indeed, when produced by blood contamination—are the ones for which bleeding would have been most severely practised.

No one can imagine that the cases we are writing of have resulted from any change in type or character of constitution, although there can be no doubt that they are much more rife at some times than others, nor can we doubt that they must have occurred through all time. At present, they are the most common conditions, especially in connection with surgery and midwifery; but they occur much more frequently than is yet generally recognized without obvious cause, and in connection with diseases that we are accustomed to call medical.

That they occurred in early times as well as now may, I think, be easily shewn. No one can question that the following case, taken from Hippocrates, *On Epidemic Diseases*, was one of pyæmia. "He, whose tibia was cut, had a blackness come upon the part. The ulcer was large on the outside, and the discharge from the hinder part. When it was cleansed, he was seized with a pain of the side and left breast, opposite to it, grew feverish, and died of his fever." (Clifton's Hippocrates, p. 127.)

The hurt bone, in connection with which pyæmia so constantly occurs, the sharp pleuritic pain, the fever, and the fatality, bear the closest resemblance to the disease as we have it now, and we cannot but admire the clear and graphic way in which the case is recorded.

Nothing is said about bleeding in the record; but it shows that septicæmic conditions played their part at the very beginning of the history of medicine as they do now at the latest period of the same; and that it is almost certain that all through the intermediate time they have done the same; and equally certain that the insight that we now have into the nature and character of these has had an immense influence over medical

treatment. That bleeding was formerly and in most times resorted to in such cases might, I think, be abundantly proved.

Sydenham says: "I think pleurisy is a fever originating in a proper and peculiar inflammation of the blood—an inflammation by means of which nature deposits the peccant matters in the pleuræ." (We might think he was writing of septicæmic pleurisy only.) "Sometimes she lays it in the lung itself, and then there comes a peripneumony. This differs from pleurisy only in degree. In my treatment, I have the following aim in view: to repress the inflammation of the blood, and to divert those inflamed particles, which have made an onset on the lining membrane of the ribs (and have there lit up so much mischief) into their proper outlets. For this reason, my sheet-anchor is venesection." "Such," says Bennett, "was the pathology and practice of Sydenham, the latter following consistently enough on the former; and the essential idea of diminishing the morbid matters in the blood has not only descended from Hippocrates to the days of Sydenham, but has come down from his to our own times." (*Principles of Medicine*, p. 267.)

What a far-reaching influence Bright's researches must have had on the treatment of inflammation! We should hesitate to bleed for the serous inflammations, the pneumonias, the apoplexies that occur in the course of diseases of the kidneys, although there is one condition—that of puerperal convulsions—in which our colleague, Dr. Swayne, still advocates venesection.

It is difficult to conceive a time when disease was not the same in most respects as it is now. There may be, and there undoubtedly is, as the result of civilization and the artificial and enervating modes of living begotten of it, a great deterioration of vital power and degradation, and gradual degeneration of the race; and, amongst other causes, this is, no doubt, promoted by the medical skill which saves weakly and unhealthy children, to live to procreate an unhealthy offspring. But, after all allowance has been made for this, we cannot imagine but that the conditions that I have referred to must have existed through all time. Injuries must have been fatal by blood-poisoning, and the parturient woman must have encountered the same dangers that she does now; and the various other causes which our advancing knowlege has made clear to us must in old time, as now, have existed, and influenced and modified disease. The amount of influence that the advancing progress of pathological knowledge has had in the last thirty years it is difficult to calculate, and certainly it is not even yet adequately acknowledged or appreciated in many of the books which profess to teach medicine and surgery. In the text-books that I used as a student, there is no mention of pyæmia, or septicæmia, or any hint of their influence; and directions were given to bleed for almost everything. In all inflammations of lung or pleura, free bleeding, repeated again and again, was directed; and in those of the peritoneum, the abdomen, after bleeding, was to be covered with leeches. But even

then, as I have said, I was startled to find that the writers who laid down those rules had ceased to practise them. It is strange that even now the best text-books give the same directions as to bleeding, although it has become so utterly a thing of the past; and it certainly is time that the teaching should be brought into accord with the practice.

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—*The British Medical Journal.*

THE SANITARY CONDITION OF THE NEGRO.

Dr. E. T. Easley, of Dallas, Texas, has published in the *American Medical Weekly*, of July 31st, a very ably written paper upon the "Sanitary Condition of the Negro." From every part of the country which is largely populated by this race, reports are sent abroad of a mortality out of all proportion to that of their white neighbors. A large percentage of this high death-rate is unquestionably due to their entire ignorance of sanitary laws. Even when admonished upon these points, in a manner so simple and positive that they cannot fail to comprehend their sanitarian adviser, such are their indolence and apathy, that they appear to take no thought or care whether the morrow is to bring them health and life, or disease and death. What then are the means proper to employ for the rescue of this people from an amount of sickness and death which, in comparison with days of slavery, proves to be largely preventable? It is altogether useless to discuss the establishment of compulsory regulations to compel a better observance of sanitary laws. If such enactments could be so framed as to accomplish their object and yet not abridge the negro's rights as a citizen, their enforcement would prove absolutely impracticable while he is so important as a voter that his popularity is courted by politicians. Nothing remains for us to do, but to pursue patient and long persistent efforts to educate and train the negro to more methodical and wholesome habits of life. Nor should it be supposed that these efforts are to be speedily crowned with success. It may be that the supernal wisdom which led the "peculiar people" through a forty years' sojourn in the wilderness immediately subsequent to their release from bondage, was exercised in this manner that they might be protected from those vicious indulgencies which are almost sure to follow the sudden removal of galling restraints. The surroundings of a life in the desert, to be continued until

the generation of freedmen had passed away, was regarded as a better policy to insure future greatness and power to this people, than their promotion to full citizenship and political equality among their former masters.

Whether "immediate emancipation" was, or was not, a "deplorable evil to the negro," few will deny that his sudden transformation from the abject slave to the full fledged citizen—the social peer—the voter—the politician—the ruler—brought much of evil to him, and certainly nothing of real good to others.

But after bestowing all due consideration upon the unsanitary habits of this unfortunate race, and our failures to educate them to a wiser standard of self protection, we are yet forced to admit that under all circumstances and conditions of life, they succumb to disease more readily than the white race. They appear to be more feeble in vital dynamism, and arrest of vital function is with them a more easy going event than with the white race. Efforts to civilize this race by sudden change of habits, in order that they shall conform with those of civilized life, appear to increase their mortality in sickness.

One of the most intelligent and observing of the British surgeons who accompanied the Ashantee expedition, writes as follows: "Pneumonia and consumption run a rapid and fatal course among the black soldiers and natives of Africa, especially when civilized and domiciled according to European customs. When attacked with any acute disease, they do not seem to have any rallying power whatever."

It is unquestionably true that up to the present time, efforts to civilize and christianize any of the inferior races of earth have generally carried in their train changes and influences which have deteriorated the healthfulness and physical well-being of the objects of designed charity. The political humanitarian and the missionary should at least be accompanied by, if not replaced by, the physician and sanitarian, in future efforts to "civilize," "elevate," or "evangelize," all those people, who are so unfortunately circumstanced as to be pronounced necessary to be subjected to the various processes of treatment exercised under the above most comprehensive verbs.

That the immediate emancipation of the Southern negro was a most deplorable event in the history of that unhappy race has become quite manifest. His suddenly altered status in the body politic has brought upon him many evils, and he has shown himself notoriously incompetent to meet the issues of his new

social relations. That he would, under the boasted stimulus of freedom, deteriorate morally and physically was foretold with unerring certainty by those who knew him best and were most familiar with his habits of life and constitution. That he has become intemperate, improvident and licentious is but a repetition of the sad history of Liberia and of his emancipation in the West Indies.

There are certain peculiarities of the black and mixed races that under the best conditions render them but poor patients. That the negro holds up badly under surgical procedures, and succumbs readily to typhoid or malignant disease, are facts in his character as palpable as his black skin, woolly head, anatomical structure, small brain, and inferior intellect. The great physiologist, Dr. Carpenter, although entertaining extreme views on the question of the instincts of races, found himself forced to allow that the negro, in a normal condition, was "stupid, sensual, and indolent." Aside from his depraved habits, there is an inability in the race to resist the inroads of disease, most pitiable. This proposition sufficiently observed of the negro is also true of the mongrel or mulatto. Within the last fifteen years the death-rate among this class of our population has been undoubtedly vastly increased. The most accurate statistics exhibit the fact that the colored mortality exceeds that of the whites at the rate of 50 to 100 per thousand every year. Unwholesome and inadequate food, and lack of protection from cold, are credited with a large number of the deaths, whilst the well known, almost unlimited, sexual license among them renders venereal disease excessively prevalent. The number of still-births and the infant mortality are appalling. In Charleston, last year, there were 147 colored children still-born to 26 whites. "Besides," says Dr. Lebby, Registrar of the city, "the large number put away in vaults, gardens, and rivers."

Prior to the war consumption was of comparatively rare occurrence among these people, the mulatto being more subject to the malady than the unmixed black. The fact now is that tuberculosis is taking more of them off than any other disease. Through exposure, defective nutrition, and all sorts of dissipation, they contract catarrhs, pneumonias, and bronchial troubles which speedily end their lives by terminating in consumption. We learn that "the number of deaths from consumption in the city of Charleston for the year 1874 was 98; of these, 69 were colored, 29 white"—more than twice as many, in fact, and just about double in proportion to population.

While it is well known that the weak point in the negro system is his lungs, it is also true that the debility and blood degeneration following his unclean and vicious habits, predispose to a large range of fatal maladies. I have said elsewhere that the surgeon who underestimates the importance of shock as an element of disease in operating, commits a grave mistake. Not only does it predispose to a vitiation of the secretions and repa-

rative products, but is itself the direct cause of sudden death. The conviction has been acquired that the negro is more profoundly depressed by shock than any race of people on the face of the earth. He reacts more slowly and imperfectly, and is more apt to sink without rallying. When subjected to the knife with all the chances apparently in his favor, he disappoints the most reasonable expectations, and the surgeon has the mortification to find his best-directed efforts unavailing. In elasticity of temperament, in rebound from exhausting influences, it can not be denied that he is much inferior to the stolid Indian, or even to the lower orders of the white race. When wounded, the tissues of the negro do not heal kindly, and are much disposed to slough or take on erysipelatous action, while septicæmia claims an undue number of victims. His injuries soon become phagædenic, putrid, or ichorous, and his system overloaded with morbid products, he goes down seemingly without a struggle. I have seen uncomplicated wounds end so. Plastic operations on these people seldom do well. It is urged, then, that in discussing the prognosis of an operation, a large allowance should be made for the simple fact that the subject is a negro. My experience (an unfortunate one) with these people has led me to see that the knife should be used sparingly; that we should look out for septic trouble and for æsthenic visceral complications, and hence, at an early period, resort to narcotics, tonics, and stimulants. The reactionary power of the negro does not bear that relation to the age of the patient that is observed in the white man. There can be but little selection of cases, as the best of them too often give the most unfortunate results.

This want of nervous power of recuperative vigor to which I have alluded, as shown by the black and mixed races, can not have escaped the notice of those who have had them for patients. A lack of nervous endurance, as well as of moral courage, is plainly exemplified when they encounter acute pulmonary attacks, typhus or typhoid fevers. The same remark is true even in a greater degree of the negress in the throes of parturition. Denied the consolations of religion, and uncheered by the hopes of maternity, her prostration is so great as to tax severely the patience of the attendant. Under these vexatious circumstances, I have seen the woman abandon herself to the most cowardly despair. I have appealed to her by all that there was in her nature to address, and have been answered by profanity and imprecations on the expected "brat."

I was requested by my friend, Dr. Carrington, to assist in removing a mutilated limb from a negro last winter. The man was twenty years old, of vigorous appearance, fine physique, and without an ounce of superfluous flesh. We naturally supposed that we had a good case, and that the patient would do well. He died on the table. Yet, according to any reasonable calculation of probabilities, he ought not to have died. I know the anæsthetic was carefully given (by Dr. Tucker), and the

amputation properly done, with small loss of blood. If our patient had been a white man, I feel sure that he would have been alive today. The negro died on account of the inability of his nervous system to meet the depression, and because he had given up any hope of recovery and come to regard his death as a foregone conclusion.

It is unnecessary to multiply cases, that mentioned is far from an isolated one. It is but a little while since I have had a hare-lip fail to unite in a negro child. I have never known a want of union in this little procedure among any other class or race of people.

I may say now that what I have written has been in no spirit of unkindness to the negro, but through a sincere regard for his best interests, and I have perhaps done him as many real good turns as many who make much larger pretensions of friendship.

I have but stated the simple, inflexible truth, depending as it does on his conformation, peculiarities, and habits. The fearful ravages of disease among this portion of our population is patent to all. It is but a begging of the issue to say that time will check this fatality; that education and moral culture will effect a change in the morality of the colored race. The facts in their history do not sustain the assumption. Let those who are fond of analogies and deductions study that history and compare it with their present condition and modes of life. It will be found that the melancholy story of the destitution, indolence and disease of the freed negro in Jamaica, Hayti and Barbadoes, is but repeating itself with precise fidelity in the Southern cities; he is found in the most unwholesome and overcrowded districts in "poverty, hunger and dirt;" his efforts to win a comfortable subsistence and habitation are at best paroxysmal and uncertain; he will sing hymns, quote texts, march in parades, attend mass-meetings and pass resolutions, but labor in a steady and reliable way he will not. Notwithstanding the most confident predictions of his advancement under enlightening influences, he has not only failed to go forward, or even to stand still, but he has moved backward day by day. Of course we are regarding the subject from a medical stand-point alone. That his moral retrogression should largely compromise his sanitary condition is as true as that his physical degeneration should modify the treatment of his wounds and disease.

It may be said, then, in conclusion, that the surgeon or physician who best apprehends these facts, in the present status of the race, will be, all things considered, his most successful medical adviser.—*The American Medical Weekly.*

ON SUMMER PNEUMONIA.

The *Irish Hospital Gazette* contains an abstract of a noteworthy

paper by Drs. Grimshaw and Moore, on the pneumonia of warm weather.

In the introductory portion of the paper, the authors stated that, contrary to what might *a priori* be expected, pneumonia exhibited a tendency to prevail in the warm season of each year. This was shown by a reference to the returns of the Registrar-General for Ireland, the deaths from pneumonia and bronchitis in each quarter of the year being contrasted. An analysis of the returns of deaths from the two diseases in Paris for seven years, showed also a noticeable close correspondence. The object of the present communication was to endeavor to prove that the remarkable differences which were shown to exist between the percentages of cases of bronchitis and pneumonia at different seasons, do not depend exclusively on meteorological conditions; and further, that the type of summer pneumonia is essentially different from that of winter, or what may be termed true or idiopathic pneumonia. Having given many bibliographical references to instances of pneumonia occurring in connection with bad hygienic conditions, enteric fever, escape of sewer-gas, and during the prevalence of diarrhœa, the authors proceeded to give a clinical description of the affection, illustrated by the full histories of five selected cases, which had occurred under their care. The points of difference in the clinical history of this disease from true pneumonia, appeared to be its extreme sudden invasion, the frequency with which the disease is arrested in its early stage, and its being less liable *constantly* to attack the lower lobe of the right lung. In only one instance was there an opportunity of making a *post mortem* examination, and the appearances presented were not different from those of ordinary pneumonia in the second stage. The treatment which was found of most value was quinine in five-grain doses every third hour. Alcoholic stimulants and turpentine were employed with benefit in cases where there was much prostration. In the author's experience, the disease was much more amenable to treatment than the other forms of pneumonia. The paper concluded with an investigation of the meteorological and epidemic conditions of 1874, when pneumonia prevailed so largely in this city. It was shown that a low temperature, a low humidity, and a scanty raintall, influenced the prevalence of pneumonia. But in answer to the question "Why does a warm, dry air increase pneumonia?" the authors would answer, "Because the *pythogenic* type of the disease depends on that pollution of the air by miasmata, which is greatest in warm, dry weather." In conclusion, the main points adduced were recapitulated as follows:—1. That the bibliography of pneumonia indicates the existence of a form of the disease which arises under miasmatic influences, and is contagious. 2. That this view is supported by the relations which exist between this form of pneumonia and certain zymotic affections—notably enteric fever and cholera—and by the resemblance between it and epizootic pleuro-pneumonia. 3. That its etiology

justifies us in regarding it as a zymotic affection, and in naming it "*pythogenic* pneumonia." 4. That pythogenic pneumonia presents peculiar clinical features, which enable us to distinguish it from ordinary pneumonia. 5. That much of the pneumonia which prevailed in Dublin during 1874 was of this pythogenic character. 6. That, whereas ordinary pneumonia is specially prevalent during a continuance of cold, dry weather, with high winds and extreme variations in temperature, pythogenic pneumonia reaches its maximum during tolerably *warm* weather, accompanied with a dry air, deficient rainfall, hot sun, and rapid evaporation.—*Medical and Surgical Reporter.*

The heading of the above paper will not fail to attract the attention of practitioners of medicine located in our parallels of latitude. Pneumonia is a disease whose importance cannot be magnified in whatever region it may occur. If it be true, however, that the heat of summer, or other morbific causes peculiar to summer, give rise to a kind of pneumonia differing so greatly from ordinary idiopathic pneumonia, as to justify such a nosological innovation as "Summer Pneumonia," it is certainly important that physicians who practice where a summer temperature rules through nine months of the year, should endeavor to acquaint themselves with all facts bearing upon such a disease. While we are very far from expressing a complete acquiescence in the conclusions as stated by the authors, there are several indisputable truths set forth in them. It is probable that the whole truth of the case might be more satisfactorily summed together in two propositions: 1. That numerous blood vitiations, whether acute or chronic, increase the liability to pneumonia; some of them even tending to its actual production. 2. That many diseases whose lesions are principally confined to the blood, prevail to a greater extent in summer than in winter. Every practitioner who has had experience in prison practice, crowded hospital practice, or practice upon persons or families whose hygienic conditions have been equally as bad as those, can recall the frequency and unexpected manner of occurrence of his cases of pneumonia. It is not impossible that this class of cases is somewhat more common in summer than in winter, but the contrast is not so great as to justify the adoption of the term summer pneumonia. In truth, if the doctrines we have just advanced are correct, it would be more precise to term this a "secondary" pneumonia, or a "cachectic" pneumonia, or, to class the cases as "intercurrent." In connection with this subject, it is not out of place to allude to the possible effects of continuous high temper-

ature, in weakening nerve-force, and in disturbing vital functions to such a degree that blood-alterations ensue sufficient to increase liability to pneumonia. There seems to be very little reason to doubt that all those states of altered blood to which the term "aglobulia" is now applied, render attacks of pneumonia more frequent. It seems to be a curious experience of the authors in finding this summer pneumonia more amenable to treatment than other forms. Everywhere, the great prayer of the physician is that he may find his cases of pneumonia uncomplicated—unmixed with any condition of disease, or systemic depravation, whatsoever. This is so strictly true, that the mortality statistics of this disease are considered to offer quite as satisfactory evidences of the state of constitutional integrity of its subjects, as of the practitioner's skill.

In order that the readers of the JOURNAL may see for themselves the comparative degree of prevalence of pneumonia in summer and winter in this city, I have collated the deaths from this disease for the three years 1871–2–3 in this city. The total number of deaths was 955. The distribution by months was as follows:

	January.	February.	March.	April.	May.	June.	July.	August.	September	October.	November.	December.
1871...	40	36	55	21	20	7	7	7	15	6	20	39
1872...	38	85	44	26	24	23	13	10	3	16	18	36
1874...	60	52	41	31	37	16	23	8	18	23	19	18
Totals..	138	173	140	78	81	46	43	25	36	45	57	93

If we classify the deaths according to the seasonal divisions of the year, we find the following to be the result:

Winter.	Spring.	Summer.	Fall.
404	299	114	138

THE TREATMENT OF PRIMARY DISEASE OF THE HEART.

Dr. Fothergill, after describing various forms of primary dis-

case of the heart, as aortic and mitral regurgitation, gives the following as the best preventive or palliative measures to be adopted. 1. That it is of the utmost importance in the treatment of primary disease of the heart to reduce to a minimum the calls upon that organ. Consequently light labor alone must be attempted; and rest in bed is often very desirable at the commencement of a course of treatment as well as at intervals afterwards. 2. Much relief can frequently be afforded when dropsy is present by unloading the distended venous system. Brisk catharsis gives great relief, and does not depress the patient, as might be apprehended. 3. In all cases the heart must be acted upon directly by agents which increase the vigor of the ventricular contractions, of which digitalis is the chief. This agent may be given uninterruptedly for years without any so-called cumulative action, if the cases are properly selected. If given in improper cases unpleasant consequences may follow its administration. 4. It is also very desirable that the nutrition of the heart be maintained by good food and iron, in addition to the means mentioned above. Improvement in the general condition facilitates the action of the special remedies.—*Lancet*, May 29.

MATERIA MEDICA AND THERAPEUTICS.

BY E. S. LEWIS, M.D.,

Professor of Materia Medica, Medical Therapeutics, and Clinical Medicine, University of Louisiana.

HYPODERMIC INJECTIONS OF MORPHINE.

Delirium Tremens.—In this affection, Prof. Gubler recognizes two opposite conditions, characterized in the one by a white sclerotica, dilated pupils, and an asthenic delirium, which yields best to stimulants, such as alcohol, opium, etc., and in the other, by a hyposthenic delirium, injected eyes, and contracted pupils, in which blood-letting, quinine, digitalis, or bromide of potassium are the most effective remedies.

In the first form mentioned, Mr. M. E. Vibert, after an experience of six years, regards the hypodermic use of morphia as the most satisfactory mode of administering opiates, remarking, however, that in order to obtain permanent benefit, the morphia should be injected at short intervals in progressive doses; and he cites instances in which he has given in this way as much as from one to two grains of the salt in a few hours, being governed by the state of the pupils.

Cholerine.—The twofold action of injections of morphine, as a diffusible stimulant, as well as a sedative, renders it the most potent remedy that can be used in these cases of sporadic cholera.

Dysentery.—Its good effects in cholerine led Mr. Vibert to its use in this complaint, not with a view to cure, but solely to relieve the patient and give rest to the system, whilst such remedial agents as are most generally used can at the same time be administered.

Miscarriages.—This mode of administering opium in order to arrest incipient labor, in those threatened with premature labor before the full term, presents superior advantages to its introduction by the mouth, or rectum, as in either instance it is liable to be ejected, whilst by hypodermic injection its action is certain, and the dose can be better regulated.

Hepatic and Nephritic Colic.—These painful affections are more speedily relieved by the hypodermic use of morphia than by its administration in any other way; frequently relief is only obtained when it is thus given, probably because the vomiting which is usually present interferes with the action of the opiate administered by the stomach.

Pleurisy and Pneumonia.—The acute pleurodynia, sometimes present in these two affections, depriving the patient of rest and occasioning the most intense sufferings, is greatly alleviated by the hypodermic use of morphia, thereby economizing the strength of the patient.—*Journal de Therapeutique*, 25th June, 1875.

CEREBRAL RHEUMATISM TREATED BY THE HYDRATE OF CHLORAL.

Mr. Bouchut has reported to the French Academy of Sciences three cases of this affection cured by means of the hydrate of chloral, given in doses of from fifty-four to ninety grains, in one or two doses at short intervals, in order to obtain an immediate abatement of the excitement which exists in these cases.—*Journal de Therapeutique*, 25th June, 1875.

SOME OF THE THERAPEUTIC PROPERTIES OF JABORANDI.

Mr. Gubler, in presenting the Therapeutic Society of Paris with a sample of Jaborandi, pilocarpus pinnatus, also gives an account of the medical applications of the plant.

He says in anasarca, with effusion in the serous-cavities, the infusion of the leaves gives satisfactory results, the œdema diminishing and the effusion being re-absorbed.

In severe influenza with violent headache, the sialogogue and sudorific effects of the Jaborandi greatly relieves the symptoms of this affection, and shortens its duration.

In asthma he has succeeded in five cases in aborting the attack by giving an infusion of the leaves; relief being obtained as soon as its sialogogue and sudorific effects appeared.

In sub-acute rheumatism, he has found the Jaborandi to diminish the pain.

He has also found it of service in ophthalmia because of its sialagogue properties and in polyuria on account of its sudoritic properties.—*Journal de Therapeutique*, M. Gubler, 10th April, 1875.

TREATMENT OF VARICOSE VEINS.

M. Rigaud, professor in the Faculty of Nancy, reports 140 cases treated successfully in the following manner. The vein is exposed to the atmosphere, and isolated from the neighboring parts by means of a ribbon or piece of adhesive plaster, and in about seven days is completely dessicated and obliterated - the wound through the integument healing without difficulty.

INJECTIONS OF CHLOROFORM FOR THE RELIEF OF TIC DOULOREUX OF THE FACE.

Roberts Bartholow recommends the injection of from twenty to thirty minims of chloroform subcutaneously in the vicinity of the painful nerve. This, he says, after citing several cases in which he succeeded in effecting a cure, when other means had failed, is at first followed by a painful sensation which is, however, soon succeeded by a feeling of numbness and subsequent insensibility of the part injected. He adds that he has never seen abscesses result, although some swelling and induration are always present for several days.—*Journal de Therapeutique*, June 25th, 1875.

PHYSIOLOGICAL ACTION OF CANTHARIDES.

The active principle of cantharides introduced directly in the blood gives rise to the following effects, according to Cautieri:

The globules become crenated; the heart and arteries weaken, arterial pressure diminishes; the pulse is accelerated; the temperature rises, in other words, there is fever.

Various organs are congested, or inflamed; the brain and spinal cord are softened, which explains the paralysis observed in dogs, rabbits and frogs, and in the latter there is even loss of reflex action in the cord.

The hyperemia is well marked in the meninges, particularly at the base of the brain, near the medulla, which might account for the acceleration of the pulse and the respiration.

Cantharides always produces congestion or inflammation of

the genito urinary organs; and when it leads to parenchymatous nephritis, albuminuria is present.

Cantharides are endowed with aphrodisiac and abortive properties.

The author attributes the diuretic effects of cantharides to its power of lessening arterial pressure and of opposing stases of the blood in the kidneys.—*Lo Sperimentale t. XXXIV and Practitioner*, December, 1874.

TREATMENT OF INTESTINAL OCCLUSION BY THE ASPIRATION OF THE GASES.

Mr. Demarquay cites three cases which he cured by relieving the tympanitis with the aspirator in order to restore the peristaltic action of the bowels, which often suffices to remove the obstruction. He regards the gaseous distension above the point occluded and the tympanitis which results as the principal obstacle to its movements.—*Session of 15th March, Academy of Science, Paris.*

COCCULUS INDICUS, OR ITS ACTIVE PRINCIPLE, PICROTOXINE, IN THE TREATMENT OF EPILEPSY.

In the preceding number of the *New Orleans Medical and Surgical Journal*, a summary of the action of this agent was given, deduced from the physiological experiments of Dr. Planat de Ville, reported in the *Journal de Therapeutique*, May 10th, 1875.

Continuing his investigations, he says, "Having shown that one of the most remarkable properties of picrotoxine is to increase the power of the checks and regulators of the cardio-vascular system, it is easy at once to appreciate the bearing of this fact in vaso-motor medication. Starting with the idea that this property is exclusively due to the action of the vagi nerves, and that under the influence of the agent in question, there is developed a series of hyperphysiological symptoms, originating in the bulb; there is reason to conclude that picrotoxin is a potent modificator of this region, designated by Brown Sequard as the nodus epilepticus. This capital discovery of the seat of epilepsy, with the striking correlation established between it and the elective affinity of this agent, the curative properties of which we will try to establish, has induced us to continue our researches. The partial or total suspension of the functions of the bulb, in an attack of epilepsy, must then require for its production a direct modification of the capillary circulation of that part, and it demands no less a cause to overcome its physiological resistance. This, it is, which is observed at the commencement of an epileptic seizure when the immobility is complete; the tonic

period on the contrary, coincides with the restoration of the circulation: for, as Mr. Vulpian remarks, confirming the results obtained by Brown Sequard, it is by the complete and sudden arrest of the circulation in the nervous centres that the excito-motor power of the cord is abolished, whilst the convulsion coincides with the ischemia only, as is seen when after a loss of blood syncope is on the point of occurring.

The rapid diminution of oxygen in the blood produces the same effects (asphyxia).

From what we have stated above, we feel authorized to regard the bulb as the seat of epilepsy, whether it be direct or sympathetic, or rather indirect, or by reflex action, to use the more scientific denomination of Marshal Hall. In the latter case it may seem strange at first that we should assign the seat of the affection at a point often considerably distant from the local irritation which excites the attacks.

Nothing is more true, however, and this objection is removed by an incontestable fact that reflex epilepsy is capable by its duration of becoming direct. How is this transmutation effected? It can only be conceived by admitting that the concentric irritation of the part affected produces in the bulb transitory modifications only, if the cause is suppressed, but which are liable to become permanent if the action persists longer.

The author, after some remarks on the definition of a remedy for epilepsy, and of the influences which might militate against the success of any remedy, gives a clinical report of fifteen cases, some recent, some of several years standing, positively cured under the use of the tincture of the cocculus indicus, giving a formula for its preparation:

Cockles of a good quality, pulverized, 200 grammes,
Rectified alcohol..... 1000 "

the maceration to continue three weeks, the mixture to be occasionally shaken and then filtered.

The initial dose is one drop twice a day in a tablespoonful of water, a drop being added to each dose daily until as many as thirty are given in a day. The doses are then diminished in the same ratio, until the initial dose is reached, when the remedy is suspended for fifteen days and commenced anew; this treatment is to be continued for several months until the disease is eradicated. In very obstinate cases he administers gradually increasing doses until forty-six drops are given a day. His observations are certainly remarkable in their results.—*Journal de Therapeutique*, 10th June, 1875.

CAFEONE.

Cafeone is the principle which imparts the characteristic aroma to coffee. It is produced by the action of heat on the soluble

parts contained in the green coffee, and results from the decomposition of the chloroginate or cafeate of potash and cafeine. It is an oily substance when isolated from the coffee, more dense than water and slightly soluble in boiling water. It is that principle of the coffee which produces wakefulness, and not the alkaloid cafeine, so that in opium poisoning an infusion of the roasted bean should be given, and not the alkaloid, which does not prevent sleep.—*Rabitan Elements de Therapeutique.*

USE OF PICROTOXINE IN OTHER AFFECTIONS.

By Prof. Gubler, in the Journal de Therapeutique, 25th June, 1875.

The same author, after citing fourteen other observations of its use in other nervous affections occurring as well among adults as among children, arrives at the following conclusions from the results obtained by him:

1st. That picrotoxine positively possesses anti-convulsive properties.

2d. That these properties, in a curative point of view, are manifested in the most part of convulsive affections.

3d. That amongst these, must be mentioned, sympathetic and probably idiopathic epilepsy, when recent, puerperal and infantile eclampsia, the transitory epilepsy of Trousseau, contractions of the extremities, chorea and one of its forms, spasm of the diaphragm.

THERAPEUTIC USE OF THE BROMHYDRATE OF QUINIA.

By W. A. Gubler.

The bromhydrate of quinia has only become known to chemists within the last few years, and is as yet but little known to the medical profession. It is best prepared according to the formula of Mr. Boille, by the double decomposition of the bromide of baryum, with the sulphate of quina; the bromide being first dissolved in alchohol to rid it of the chloride of the same base, which it always contains, but which is insoluble. He obtains it also by dissolving hydrated quinia in weak bromhydric acid. The bromhydrate of quinia crystalizes in long white crystals with a slight yellowish cast. It has no odor, produces a sense of coolness in the mouth with a salty and bitter taste.

It is much more soluble in water than the sulphate, one part of the bromhydrate being soluble in five parts boiling water and sixty parts cold water. Its greater solubility renders it better than the sulphate for hypodermic use, besides it combines the properties of the quinia with those of the bromide with which it

is associated. Mr. Gubler states that he administers it in doses of four grains three times a day, sometimes twelve or fifteen grains in the day, rarely more being required to produce its physiological effects.

He cites a case of hysteria with incoercible vomiting which had lasted for four months that he cured by the hypodermic use of the bromhydrate injected twice a day in two grain doses, alternating at times by its administration by the mouth in doses of five grains three times a day before each meal.

The treatment was continued for some time after the cessation of the vomiting, in order to prevent its return. In conclusion, he states that in this case that the efficacy of the bromhydrate is incontestable, as the vomiting had lasted for months under very varied and energetic treatment and ceased almost immediately upon resorting to the br mhydrate.—*Journal de Therapeutique*, July 10th, 1875.

NOTICES OF NEW BOOKS

Rest in Nervous Disease; its Use and Abuse. By S Weir Mitchell, M.D., Member National Academy of Sciences; Physician to Infirmary for Diseases of Nervous System, Philadelphia. Pp. 20.

This essay is number four of the Series of American Clinical Lectures, published by G. P. Putnam's Sons, several of which have already been favorably noticed in this JOURNAL.

The author disclaims at the outset that rest is anything more than auxiliary to the general system of treatment. He also mentions the difficulty of enforcing strictly this important means of cure, and the danger at last, especially with women, that the habit of inactivity may become to them a fixed and ineradicable idea. Another disadvantage is interference with nutrition, by lowering the heart's action, by diminishing the appetite, impairing the digestive powers and constipating the bowels. In return for these disadvantages great positive advantages are gained—the conservation of nervous energy, and, intimately connected with it, the obviation of irritation and pain. Indeed pain may be regarded as a warning and demand for rest of some kind or degree, and the sufferer sooner or later learns and heeds its significance. An illustration is given of a case of extreme gastric neuralgia, attended with total intolerance of food. Relief was obtained by giving up feeding by the stomach and nourishing entirely by the rectum. The relief afforded to neuralgia by section of the affected

nerves is accountable to the rest thus granted to the supersensitive nerves. Several instances are given of recovery from the neuralgia accompanying the early stage of locomotor ataxia, through accidental injuries which enforced rest in the recumbent posture, and the value of the means has been tested by confining other cases to bed.

Other cases are cited, of complete nervous and muscular prostration in soldiers, caused by excessive exertion in marching. With these subjects the immediate indication for rest was not pain, but simple exhaustion. The indication was heeded, and perfect repose, added to suitable tonic treatment, was followed in all cases by speedy recovery.

The value of rest in nervous maladies, as well as that of promoting nutrition, is not a novel idea, but Dr. Mitchell deserves credit for presenting the subject here in a forcible manner, with such illustrations as to make it clearer than it is usually brought to mind either in the course of medical instruction or in systematic treatises. S. S. H.

An Address on the Climatology of Florida. Delivered before the Medical Association of the State of Florida, at their Annual Meeting, held in the city of Jacksonville, on the 17th and 18th of February, 1875. By A. S. Baldwin, M.D., President. Pp. 39.

The first pages are occupied with a brief discussion on climatology in general. Then follows an outline of the physical geography of the State, and afterwards a description of the special meteorology. The following summary has been derived from observations made at nineteen different stations, during periods of time varying from one to twenty-seven years:

In regard to *Temperature*, that has been found excessive in neither extreme throughout the entire year, but quite equable. Atmospheric disturbances of a serious character are not as frequent here as either north or south of us, for our equable temperature has been shown to have an astronomical cause, which gives us less heat in summer, and less cold in winter than in northern latitudes. And the regularity of barometrical pressure in its relation to temperature, shows that there is a remarkable and equable relation existing between the two. The humidity of the atmosphere has been shown to exist to such an extent as to prevent those extreme diurnal variations of temperature which are inimical to both comfort and health, and on the other hand,

the absolute amount of water in the atmosphere is too small to render it objectionable to even delicate lungs. The fall of rain occurs principally in showers during the summer and autumn, when the agricultural interests most require it. The winter is the dryest season and the spring next, in the latter part of which it is sometimes quite dry.

The showers which occur in summer are of short duration, and come on with considerable regularity, making the summer more pleasant and the air pure and cool. The atmosphere, as has been before remarked, is comparatively calm, and what winds we do have are seldom of a violent or destructive character.

The whole gives a very favorable showing of the climate of Florida, especially with reference to a winter residence for consumptive invalids. S. S. H.

Transactions of the Ninth Annual Meeting of the Medical Association of the State of Missouri, held at Jefferson City, April 20th and 21st, 1875. Pp. 81.

The first twenty-four pages are occupied with the minutes of the meeting, following which are four essays. The first is on Anæsthetics in general, by J. W. Trader, M.D. The chief points considered in this paper are the dangers in the use of these agents, and particularly the comparative danger between chloroform and ether. Considerable testimony is adduced, but no decided conclusion is arrived at.

The second paper is "On the Use of Anæsthetics in Labor," by S. S. Todd, M.D. In order to avail himself of the experience of others on this subject, the author addressed a circular letter to more than 600 medical men, both in Europe and America, asking replies on the following points:

1. Estimate the percentage of all cases of Normal Labor in which you administer Anæsthetics. 2. Estimate the frequency with which you employ anæsthetics in turning, forceps delivery, and other painful obstetric operations. 3. At what period in normal labors do you begin with the use of anæsthetics? 4. To what extent is the induction of anæsthesia carried in normal labors? 5. What anæsthetic is used and by what kind of appliance? 6. What bad results to the woman have you known to follow anæsthesia? 7. What bad results to the child? 8. Have you ever known flooding, retention of the placenta, or rupture of the perineum to result from the use of anæsthetics? 9. Can you cite any case of death to the woman directly traceable to the use of anæsthetics during labor? 10. From your own

experience would you counsel a more extended use of anæsthetics in Normal Labor?

The following gives a summary of the information gained by these inquiries:

From the letters of one hundred and thirty-three correspondents, resident of the United States, the kingdom of Great Britain and Ireland, and continental Europe, who give precise data from their own practice, I find that:

86, or 64 per cent. use anæsthesia in all operative cases of midwifery except when forbidden by some peculiarity of the case.

12, or 9 per cent. use it in all operative procedures except forceps cases.

5, or 3.7 per cent. use it in all operative cases except in turning.

7, or 5 per cent. use it in all operative cases except in turning and forceps cases.

11, or 8 per cent. use it in 50 per cent. or less, of all operative cases.

121, or 90.9 per cent. use it in a greater or lesser number of operative cases.

12, or 9 01 per cent. do not use it in any of these cases.

Numerous quotations are introduced from various authorities and from the replies to the circular, mostly favorable to the use of anæsthetics, chloroform being the agent almost universally used.

In regard to the use of chloroform in natural labor, the following gives the result of his inquiries:

Five out of my two hundred and sixty-two correspondents believe that anæsthesia is liable to result in death to the child from asphyxia, and two of them declare that they have witnessed this result, once each, in their own practice.

On the other hand the testimony is overwhelming that the moderate anæsthesia required in ordinary labors, and even anæsthesia to the second degree, as required in obstetric operations, is without danger to the child, immediate or remote. It has not been shown that the infantile mortality has increased since the introduction of anæsthesia, but, to the contrary, the few, meagre statistics we have on the subject, as those of Prof. Simpson, and of Prof. Channing, of Boston, go to show that the death rate is reduced under the use of anæsthetics. Prof. Simpson declares that the pulsations of the fetal heart are little, if at all, increased in rapidity when the mother is anæsthetized. He quotes Prof. Siebold also as saying, that "The action of the child's heart was found to continue quite unaltered, not the slightest change in its frequency and regularity being detected."

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"Of my correspondents, twenty-five believe that anæsthesia re-

tards labor; twenty-two believe that it promotes flooding; nineteen believe that it both retards labor and favors flooding; three are of opinion that it favors retention of the placenta, while two hundred and thirty-four are either silent on this point, or in positive terms disclaim any participation of anæsthesia in the production of the casualties named."

It will be observed from the foregoing quotations, that the report is strongly in favor of the use of agents which go far in liberating maternity from the penalties pronounced for the first disobedience.

A paper follows on "Chronic Suppuration of the Middle Ear in its Relation to the Brain," by H. N. Spencer, M.D., of St. Louis.

The author states, from his own experience and from the testimony of other practitioners, that acute and chronic suppurations of the middle ear constitute more than one-fourth of all the diseases of the ear requiring treatment. The liability of this malady to result in meningitis and cerebral abscess renders it always one of gravity, and, in the opinion of the author, if the mortality traceable to this suppurative inflammation could be correctly estimated, it would present an alarming picture. Some cases are related, illustrative of his position.

The importance of early treatment is insisted on, the chief points of which are stated as particular attention to cleanliness and the application of solution of nitrate of silver on a mop of cotton.

The attentive reader of this JOURNAL will remember a contribution to the May number of 1874, on the use of Villate's Mixture in chronic otorrhœa. A single case, in which we had an opportunity to try this remedy, rapidly recovered after trial a few months since. The remedy is composed of chemical incompatibles, and it would be hard to explain its precise mode of action; but, in a complaint hitherto so intractable and unsatisfactory to treat, it is certainly worth a trial.

The last paper is on "Laryngeal Disease considered in its relation to Pulmonary Phthisis," by W. C. Glasgow, M. D., of St. Louis.

The frequency with which these two maladies are associated is estimated by Dr. Glasgow at a very high rate. Including inflammatory affections of the throat without loss of substance, he supposes that fully six-tenths of the cases of pulmonary consumption are attended with throat affections.

A question which has long exercised the minds of medical men

is whether the two affections stand in the relation of cause and effect. The fact that either may, and often does, exist without the other, is strong evidence against the validity of this proposition.

The views of the author on the pathology of pulmonary consumption are at variance with those held by both the French and German schools, and are best expressed in his own language:

They are founded on the old doctrine of the identity of scrofula or king's evil and pulmonary phthisis. I am inclined to believe that the yellow and gray tubercle of Laennec, the cheesy pneumonia and miliary tubercle of Niemeyer, are a cheesy degeneration of the adenoid or lymphatic glandular system of the lung, combined in a certain number of cases with the cheesy degenerated products of the inflamed alveolar walls or cheesy pneumonia. This is, essentially, the view of Dr. C. B. Williams, of the Brompton Hospital, and the English pathologists, Sanderson and Fox. Van Recklinghausen and Vernon as well as Fox and Sanderson, have proven the great development of the lymphatic glandular system in the lungs. Sikovsky has proved the existence in the alveolar walls of a plexus of lymph canals and stellate knots, and it is here, also, that Rindfleisch locates the primary seat of lung tubercle, spreading from this point in the course of the lymphatics.

The microscopic appearance of the cheesy matter of the lung and the contents of a cheesy degenerated cervical gland are identical. The hyperplasia of the pre-existing cells, the small round cell and the giant corpuscle are seen in each, and I think there is every reason to believe that it is the same pathological condition of a similar tissue in the different organs.

Holding these views as to the nature of pulmonary phthisis, I believe that the throat disease holds no connection with it as cause and effect; that the disease of the throat, the ulceration in the intestines, enlarged cervical glands and the cheesy masses in the lungs are all simply manifestations of struma in the different organs, or tubercle, which ever it may be called. All being simply the results or manifestations of a common constitutional disease, bear the same relation to each other as the primary to the tertiary lesions of syphilis. I can see no reason for using a "post hoc, propter hoc" argument, but all being the evidences and results of a common constitutional cause naturally follow each other. The popular notion that the extirpation of the tonsils is followed by consumption would have the same significance.

With regard to treatment he has not much to say, and nothing of special interest.

The most notable feature of these *Transactions* is the paucity

of papers on special subjects. Nothing appears in the minutes to indicate the rejection of any paper, and all that were read are therein published, with a single exception. We are consequently left to the conclusion that the offerings were not numerous. The *cacoëthes scribendi* evidently is not epidemic among Missouri doctors this year. S. S. H.

Medical Addresses. By Benjamin Eddy Cotting, A.M., M.D., Harv., President Massachusetts Medical Society, etc. Pamphlet, pp. 123.

This selection consists of the following papers:

I.

Nature in Disease.—*An Address before the Norfolk District of the Massachusetts Medical Society*, at the Annual Meeting, May 12, 1852.

II.

Disease—a Part of the Plan of Creation.—"*The Annual Discourse*" *before the Massachusetts Medical Society*, May 31, 1865.

III.

My First Question—as a medical student—its Solution a Sure Basis for Rational Therapeutics.—*An Address before the Norfolk District of the Massachusetts Medical Society*, at the Annual Meeting, May 8, 1872.

The burden of the first essay is an argument to prove the importance of studying the natural history of diseases by keeping cases under observation without any medical interference by drugs whatever. The author offers no advice in regard to the selection of cases for such experimentation—whether in private practice, hospital practice, or on convicted malefactors. From the fact that opposition to the study of practical anatomy has not yet quite died out, it may be doubtful if the public are already prepared to sanction this kind of study: indeed it is notorious that most people strenuously object to the experimentation of drugs upon themselves, though this is often practiced without their knowledge.

But it can not be urged that we are ignorant of the natural history and tendencies of most diseases, inasmuch as numerous opportunities occur to trace them to an advanced stage from neglect or disinclination to medical interference; and instances are by no means infrequent of acute cases terminating in reco-

very or death without medication. It is true that such cases cannot be studied with the same precision as would be possible under constant medical supervision; but, even in the latter case, difference of constitution, of previous health and habits, and other modifying influences, produce variations in symptoms, both in kind and degree, and greatly complicate the problem. Indeed we think the time far distant when the natural course of diseases can be reduced to anything like the precision of a mathematical formula.

The purpose of the second paper may be stated in the author's words:

To show that disease is not a mere accident in the history of our race, or due only to unwarrantable experiments upon our powers of endurance, but, rather, that DISEASE IS A PART OF THE PLAN OF CREATION—one of the myriad expressions of Divine thought.

The first argument in favor of this view is the fact that pathological conditions are found in fossil remains, giving evidence that animals in remote ages were subject to various diseases—such as fracture, exostosis, caries and necrosis, and even abscess. It is hardly necessary to add, that animal life in general is at the present time subject to various forms of disease; and vegetable forms might be included in the same category.

He goes on to speak of the incomprehensibility, and intractability to human interference, of this feature of the divine plan, and culminates in the following burst of eloquence:

As we cannot bind the sweet influences of Pleiades, or loose the bands of Orion, neither can we arrest the midnight pestilence or the noonday destruction; much less can we control in any degree the approach of those terrific scourges which, in their appointed times and preördained courses, sweep over the nations, obeying Him only who rides in the whirlwind and directs the storm.

This savors more of religious fervor than of scientific accuracy, and certainly ignores the discovery of Jenner, who was rash enough to interfere very materially with what the author must consider to be a part of the plan of creation. Indeed we think it would require no greater ingenuity to prove that crime and oppression and flood and drought are parts of the plan of creation.

Disease, he thinks, exhibits proof of design, as much as any other fact in nature, and he therefore argues from the effect to

an intelligent Cause, after the method of Paley, in his "Natural Theology."

Thus it appears that the idea of Diseases must have originated in the Creator's mind, and that its development formed a part of the Plan of Creation from the beginning. The ultimate purpose of such a Plan is not for man to determine. Deliberately devised, diseases do not necessarily imply "gratuitous malevolence;" for, despite of some philosophers, it is quite possible to conceive of the earth, and all that is therein, simply as an expression of Divine thought, without reference to the question of good or evil.

In short, the whole essay is projected from a theological standpoint, on the view that diseases are special creations by a Divine Being, rather than the natural consequence of infraction in some way of the laws of our well-being.

The gist of the third paper is about the same as that of the first—a plea for the study of the natural history of disease, which alone, in his opinion, affords "A Sure Basis for Rational Therapeutics." S. S. H.

The Influence of the Climate of Colorado on the Nervous System. By Charles Denison, M.D., Denver, Colorado. Reprinted from the "Archives of Electrology and Neurology" for November, 1874.

After some description of the peculiar geographical aspects of Colorado, the author mentions four remarkable features of the climate. "These are its altitude, with the increased amount of atmospheric electricity and ozone due to the same, a large proportion of clear days, a small relative humidity of atmosphere, and a small annual rainfall."

The average temperature is about the same as that of New York city, Southern Pennsylvania, Central Ohio, Indiana, and Illinois, with a greater daily range, which increases with the altitude.

In some respects such a climate is, in the author's opinion, favorable to consumptives in the earlier stages of their decline. The density of the atmosphere being diminished about one-fifth, respiration is necessarily quickened and deepened, and nature is required to provide an additional amount of lung space. The prevalence of sunshine and diminished humidity of the atmosphere are also considered favorable. In this opinion he is undoubtedly right. On the other hand, the wide daily range of

temperature must be unfavorable to consumptives. Asthmatics particularly find this climate of the greatest benefit. This is mainly due, in the author's opinion, to decrease of atmospheric pressure on the lung tissue, and in part also to the extraordinary dryness of the air.

The effects of the climate on the nervous system are classified (1) as the immediate, and (2) as the permanent. In the first category is reckoned relief for asthma. Congestive headache is occasionally observed among new-comers, on account of increase of cardiac action; but other kinds of headache are less common. The opinion is stated "that nervous symptoms alone, due to an abnormal irritability, or over-excitation of any set of nerves, generally might be expected to be aggravated in the electric air;" but "a marked change in elevation, as from the East to this country, has generally a salutary influence on that class of overworked brains which, in the intensity of political, professional and business life, is quite numerous now-a-days."

As to the permanent effects, he speaks as follows:

Diseases generally are more prone to assume an acute character. The action of remedial agents is also more marked, and the physician has really much less to do with his patients, among the same number of people, than in a denser atmosphere. (Not an extra lucrative field for doctors.)

In this connection, it is to be mentioned that the injurious effects on the brain and nervous system of alcoholic stimulation are sooner felt, and with more intensity, than on the sea-coast. Quite a marked effect, too, is on the sexual passions.

Premature falling of the hair is ascribed to the dryness of the atmosphere.

But for continued muscular exertion, I can not think the capacity here is as great as it would be in a denser atmosphere. It is said that horses can not be made to trot quite as fast here as in the East.

Comparative capacity for mental effort he considers an open question—in fact rather too delicate a question for successful investigation.

This article was written in compliance with the request of the editor of the journal in which it was published. It will be observed that the writer does not confine himself to the subject, but brings into prominence the advantages of the climate of Colorado to persons with consumptive proclivities. Suitable climates for this class of invalids are greatly in request at the present time, and there is a corresponding tendency to supply

the want by bringing into public notice the claims of various localities upon the patronage of those who have less health than money. S. S. H.

The Management of Eczema. By L. Duncan Bulkley, A.M., M.D., 8vo., pp. 22. New York: G. P. Putnam's Sons; 1875.

This essay is reprinted from the Transactions of the American Medical Association for 1874, in order to give it a wider circulation in the present form than it could have in the other.

The scope of the paper may be illustrated by the summary presented at the close:

I. True eczema is a catarrh of the skin, properly acute but very commonly subacute and chronic, and is entirely analogous to catarrh of the mucous membranes, which are, indeed, but involuted portions of the cutaneous envelope. The absence of moisture, in many cases, does not disprove this, for if the dry parts are kept covered with oiled silk or gutta-percha paper or rubber to prevent rapid evaporation, we soon find that the material forming the scales is the same as in other cases, catarrhal, which stiffens linen.

II. This catarrh tends to run a certain course, accompanied by definite pathological changes, and the disease which we meet with more commonly is, in a large part, made up of the relics left in the skin—that is, thickening caused by a deposit of adventitious cells, mostly in the *rete mucosum*, but also capable of extending into the papillary layer, the derma, and even deep into the adipose tissue.

III. Much that is called eczema is properly only a dermatitis or ordinary inflammation of the skin, tending to spontaneous recovery when the cause is removed and irritating agencies kept away.

IV. Eczema in its true sense is not a local affair, but one intimately associated with blood changes, represented in the main by a sub-oxidation or hyperacidity, as found in the stomach, kidney, etc, and this state, moreover, is closely allied to gout, rheumatism, and scrofula.

V. Debility, pure and simple, does not cause eczema, but may, by its existence, prevent either the recuperative action of nature or the beneficial effects of remedies.

VI. Eczema, being an acute disease, running a definite course, our treatment must consist principally in avoiding irritating elements, correcting systemic errors, debility, acidity, etc., favoring the action of the emunctories, and locally making such appli-

cations as soothe and restore tone to an irritated and inflamed integument.

VII. The products of eczema, the thickening and consequent scaling and itching, are removed by stimulating applications, and by such pure tonics as act directly on the nerves, causing absorption through the capillaries, as quinine, iron, arsenic, strychnine, and the like.

VIII. Arsenic and zinc ointment, while serviceable in many instances, are so far from being specific for eczema that their use is injurious in many cases, while almost always other remedies will either suffice alone or greatly assist their action.

Such an article, being within readable limits for the busy practitioner, clear in language and definite in statement, will be useful to a larger number than more extensive treatises.

S. S. H.

The Skull and Brain: their Indications of Character and Anatomical Relations. By Nicholas Morgan, Author of "Phrenology and How to Use it in Analyzing Character," etc. 16mo., pp. 208. London: Longman, Green and Co.; 1875.

This little work is divided into nine chapters, of which the first is devoted to answering objections to Phrenology. The objections which the author labors to controvert are those of Prof. Bain and Mr. G. H. Lewes, the former having assailed the system on psychological and the latter on physiological grounds. Some of the statements of Mr. Lewes are contradicted as matters of fact; and experimental proof of a striking character is adduced, which ought to be subjected to repeated trials, however, before final acceptance. These researches were made by Dr. Ferrier, in a manner described as follows:

The doctor, following the course struck out by Fritsch and Hitzig, to whom he gives the credit of being the first to demonstrate that the brain is not, as has been generally stated, insusceptible to every kind of irritation, has experimented on the exposed cerebral hemispheres of pigeons, fowls, guinea-pigs, rabbits, cats, dogs, and monkeys, by Faradisation (electrical irritation), and succeeded in producing local irritation of various parts of the brain. His method is to narcotise the animal with chloroform and to extend it on a board with its abdomen downwards, secured by cords, so as to give the head and limbs free play, then to expose the brain by trephining, and to extend the orifice by bone forceps. The process of Faradising is next proceeded with. This is done by electrodes made of thin copper wire, doubled at the end, rather obtusely, or in a slightly rounded form, so as to avoid laceration of the parts to which they are

applied. They are likewise covered by silk thread, excepting a small portion of the end, and the doctor applies them, about a quarter of an inch separate to the parts of the convolutions that he wishes to test as to whether or not they are different in function.

After much experimental research and repeated verification of the phenomena, Dr. Ferrier arrived at the conclusion that the *individual convolutions are separate and distinct organs.*

The high authority of Dr. Carpenter is quoted, somewhat in corroboration of Dr. Ferrier's deductions from his experiments, as may be observed: "There would seem strong ground for the belief that the memory of particular classes of ideas *may* be thus localized, and that particular parts of the convolutions may be special centres of the classes of perceptional ideas that are automatically called up by sense impressions." This is from his work on Mental Physiology, and it seems that his views have undergone some change since the publication of his work on Human Physiology. There he expresses himself as follows: "It appears to the Author, however, to be a fundamental error to suppose, that the entire Intellect can be split up into a certain number of faculties; for each faculty that is distinguished by the Psychologist expresses nothing else than a *mode of activity*, in which the whole power of the mind may be engaged, at once—just as the whole power of the locomotive steam engine may be employed in carrying it forwards or backwards, according to the direction given to its action. And if this be true, it must be equally erroneous to attempt to parcel out the cerebrum into distinct organs for these respective faculties; the whole of it (so far as we can form a judgment) being called into operation, in every kind of intellectual process which occupies the attention at the time."

In the chapter on the Will, the author's views are at variance with those of the metaphysicians, and in harmony with those of the phrenologists, who divide the mind into a large number of distinct faculties. The following will give the reader an idea of his meaning:

The Will is not a single faculty, having a distinct cerebral centre for its organ, but is a mode of operation of the mind, the actions of which are determined by motives.

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The Will is not a self-determining, self-controlling power, and therefore not absolutely free; but its freedom consists in the choice of motives.

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The cause of the difference between strong-willed and weak-

willed persons appears to rise from inequality in the strength of predominant faculties—a greater sensitiveness to certain impressions than to others, and to external and internal stimuli—also, the quantity and quality of a person's experience, education, knowledge, and surroundings.

Admitting the truth of the doctrines of phrenology, the above exposition of the nature of the Will would possess greater comprehensibility than any other that we have seen.

Succeeding chapters treat of the Anatomy of the Skull, and of the Nervous System; of the Relations of the outer Cerebral Convolutions to the Skull; of the Size and Quality of the Brain. Then follows a chapter on the Temperaments. The classification adopted by the author seems to us greatly preferable to the old one—Lymphatic, Sanguine, Bilious and Nervous.

The best method of classification, in my opinion, is the one struck out by Dr. Thomas: to group together those organs that have a similarity of function, and give names that have a direct reference to them—indicating their power to act, rather than modes of functional activity. The following names appear to be appropriate: first, the *nutritive* temperament; second, the *sanguine;* third, the *mental;* and fourth, the *muscular*. When the abdominal, thoracic, cephalic, and muscular groups are fully developed and suitably proportioned, the temperaments are equally balanced; and individuals so constituted are most highly endowed for performing all the duties of life—as all the parts, possessing equal vital energy, are equally fitted for exercising their functions.

No individual could possess a single temperament exclusively, or be entirely deficient in any one. To indicate the relative prevalence of each, the author uses a numerical system, expressing various degrees of activity. The constant aggregate of the four is 24, and the equal development of all four temperaments would give 6 to each. The preponderance of one, expressed by a higher number, would require a diminished expression for one or more others. Such a scale seems to be quite clear and convenient.

Chapter IX, and last, treats of the Cranial Signs of Character, otherwise known as "organs" or "bumps." These are something over forty in number, and correspond mainly to the arrangement proposed by Gall and Spurzheim. Mr. Morgan, like those phrenologists, locates the sign of articulate language in the eyes, a high endowment of this faculty being indicated by prominence of the eyes. No reference is made to the recent physiological location of the faculty of speech in the third convolution of the left frontal lobe.

We do not propose to discuss here the claims of phrenology to recognition among the sciences. While many physiologists are ready to admit that particular portions of the vesicular substance of the brain may be specially concerned in certain mental operations, few are prepared to localize these faculties. The most prudent verdict, in the present state of our knowledge on this question, is—*not proved.* S. S. H.

Clinical Lectures and Essays. By Sir James Paget, Bart, F.R.S., D.C.L. Oxon., L.L.D. Cantab., etc. Edited by Howard Marsh, F.R.C.S., Assistant Surgeon to Bartholomew's Hospital and to the Hospital for Sick Children. New York: D. Appleton & Co., 549 and 551 Broadway; 1875. One octavo vol., pp. 428.

On Paralysis from Brain Disease in its Common Forms. By N. Charlton Bastian, M.A., M.D., F.R.S., Fellow of the Royal College of Physicians, Professor of Pathological Anatomy in University College, London, etc., with illustrations. New York: D. Appleton & Co., 549 and 551 Broadway; 1875. One duodecimo vol., pp. 340.

We are indebted to the Publishers for these two books, which have reached us too late for a critical notice. It is, however, quite a sufficient guarantee for the scientific and practical value of a book to find, upon looking at its title page, the name of Sir James Paget as the author.

Dr. Bastian is also well known in this country as one among the most industrious workers, and vigorous thinkers and writers of his country. The books are excellently gotten up and form handsome volumes.

Lessons on Prescriptions and the Art of Prescribing. By W. Hansel Griffiths, Ph. D., L R C.P.E., Licentiate of the Royal College of Surgeons, Edinburgh, Professor of Chemistry in the Ledwich School of Medicine, Dublin, etc, London: Macmillan & Co.; 1875.

This little hand-book has been forwarded by Macmillan & Co., 21 Astor Place, New York city. Its contents embrace a series of lessons, which treat respectively of the following subjects: Lesson I—Introduction and Grammatical Construction of a Prescription. Lesson II—Parts of a Prescription. Lesson III—

Signs and Symbols. Lesson IV—Words and Phrases most frequently employed, and the Abbreviations and Contractions of them. Lesson V—The Principles of Medicinal Combination. Lesson VI—Incompatibility. Lesson VII—Posology. Lesson VIII—Varieties of Magistral Formulæ. Concluding Lessons—Examples and Exercises.

We venture to affirm that there are very few physicians, whether experienced, or inexperienced, who may not derive useful hints from this little book.

Braithwaite's Retrospect of Practical Medicine and Surgery. Part LXXI; July. Uniform American Edition. New York: W. A. Townsend, Publisher; 1875.

The established high character of this publication is well sustained by the present number.

From R. G. Eyrich, 140 Canal street:

History of the Conflict Between Religion and Science. By John William Draper, M.D., L.L.D., Professor in the University of New York; author of a Treatise on Human Physiology, etc. Fifth Edition. New York: D. Appleton & Co., 549 and 551 Broadway; 1875.

Assyrian Discoveries; an Account of Discoveries and Explorations on the site of Nineveh during 1873 *and* 1874. By George Smith, of the Department of Oriental Antiquities, British Museum; author of History of Assurbanipal, etc. New York: Scribner, Armstrong & Co.; 1875.

These books cannot be said to add anything to our knowledge of the healing art, but they are full of interest to the scholar and scientist.

CORRESPONDENCE.

To the Editor of the N. O. Medical and Surgical Journal.

DEAR SIR—The present age is remarkable for its facilities for diffusing knowledge, and particularly is this to be observed in the promptness with which the results of scientific work in medicine are announced through our admirable periodicals. In the

series of letters which this communication is intended to initiate, it will be presumed that your readers are interested in the salient features of medical and surgical progress abroad as well as in the matters of observation at home.

On the 28th of February last, the Clinical Society of London, and through it the profession at large, were surprised with the report of a case of excessive and long maintained high temperature followed by recovery. A young lady received injuries to her spine by being thrown from a horse; for nine weeks the temperature ranged between 108° and 122° Fahr., and she recovered. The observations were made by Mr. John Teale, of Scarborough, a reliable, intelligent and experienced surgeon, with several different thermometers (since proved to be perfectly correct), at various hours of the day, placing the instrument between the thighs, in the rectum and axilla, and taking every precaution to guard against error. It is not surprising that this case, which tends to upset all established ideas as to vital resistance to heat, should have received much criticism from the medical press—even expressions of scepticism from some. It is to be remarked, however, that no one acquainted with Mr. Teale has ever doubted his sincerity or the fidelity of his observations. In fact, if there be an error it is difficult to see where it lies. In the *British Medical Journal* for July 10, appears a letter from Mr. Teale, replying to the numerous questions and suggestions which have been presented during these three months in regard to the case. This letter excludes many possible modes of error, shows that the observations were carefully and scientifically made, and renders the thermometrical features of the case still more remarkable and puzzling.

We cannot better express the result of our reflection upon this surprising case than to repeat the maxim so aptly applied by an accomplished professor of physiology and pathological anatomy, who, when alluding to this case in a recent letter to the writer, observed that "one swallow does not make a summer," and until confirmation is added, it is doubtless best to adhere to the thermometrical laws so firmly established by careful and repeated clinical observations. We will venture the assertion, however, that in no specific fever will such a record of temperature be followed by recovery; but is it not probable, as was suggested by a distinguished member of the Clinical Society in discussing this case, that there is some agency of the spinal cord

governing animal heat not as yet determined by physiologists, which may have been involved in Mr. Teale's case? This is rendered more probable from the fact that the highest temperature recorded has been in cases of disease of the nervous system. It is to be hoped that investigation in this interesting department of medical science, which has been so rapidly advanced during the past few years, will be pushed with renewed enthusiasm since the startling observations of Mr. Teale have been given to the medical public.

As your exchanges have already indicated, the profession of Great Britain has enjoyed another grand field day at one of the great societies of London. Following the great debate on Pyæmia, in the Clinical Society, and that on Cancer, in the Pathological Society, the extensive and important subject of *Puerperal Fever, and its relation to the Infective Diseases and Pyæmia*, has just been discussed by the Obstetrical Society. The discussion was introduced by the great anatomist, Mr. T. Spencer Wells, and occupied several meetings of the Society. The ablest obstetricians of Great Britain, together with several eminent pathologists, participated in the debate, and at the last meeting our own country had a representative in Dr. Fordyce Barker, of New York.

Mr. Wells gave definite direction to the discussion by requesting attention to six leading questions, the first three being most important. They are as follows, viz.:

(1) "Is there any form of continued fever, communicated by contagion or infection, and occurring in connection with child-birth, which is distinctly caused by a special morbid poison, and as definite in its progress and the local lesions associated with it as typhus, or typhoid, or scarlet fever, measles, or small-pox?"

(2) "May all forms of puerperal fever be referred to attacks of some infective continued fever—as scarlet fever, or measles—occurring in connection with child-birth on the one hand; or, on the other, to some form of surgical fever, or to erysipelas; caused by or associated with changes in the uterus and neighboring parts following the process of child-birth?"

(3) "If all the contagious and infectious diseases which occur under other conditions than that of child-birth are set aside, does there remain any such disease as puerperal fever?"

The question encountered at the very outset, then, is as to the

existence of any such disease as puerperal fever. Mr. Spencer Wells adopted the definition of puerperal fever given in the Nomenclature of the College of Physicians and Surgeons—"a continued fever, communicable by contagion, occurring in connection with child-birth, and often associated with extensive local lesions, especially of the uterine system"—and then inquires if any one ever saw such a case which could not be traced to some one of the infectious fevers—to scarlet fever, measles, small-pox, diphtheria, erysipelas, pyæmia, septicæmia, or to traumatic fever. Although the greater number of speakers would have us believe that the condition known as puerperal fever is one of the above diseases, modified by the peculiar condition of the subject at the time of reception of one of these poisons, there were other distinguished gentlemen, of ripe experience, who insisted upon the existence of puerperal fever as a distinct substantive disease. Drs. Barnes, West, and Fordyce Barker, while admitting the destructive influence of the specific poisons referred to upon the puerperal woman, insist that there is a peculiar febrile condition resulting from the process of labor, totally distinct from scarlet fever, erysipelas, etc., in the lying-in subject, and which, for want of a better term, we call *puerperal fever.*

It seems to us, after careful study of the subject, that the classification of this disease, which is founded upon facts daily confirmed by observation, and best suited for inquiry, is the one made by the distinguished obstetrician, Dr. Barnes. He divides puerperal fever into two grand divisions. After observing the fact that a lying-in woman has fever we pronounce it *heterogenetic*, if the disease is derived from without—as from exposure to one of the zymotic fevers, etc.—or *autogenetic*, if the disease arises from conditions inherent in the patient. Only by the recognition of these two divisions of the disease can we appreciate the fact that the disease may occur in a man's practice while he is innocent of its production.

This debate, though developing no very startling and new facts, shows that medical opinion is far less unanimous as to the origin and nature of this disease than in many other affections so common; and by directing the attention of observers in this direction, may be the means of solving some of the difficulties connected with this great scourge of both hospital and private practice.

The profession of Kentucky has watched with much anxiety

and solicitude the course of the recent fatal illness of our distinguished statesman, Gen. John C. Breckinridge. It seems that during the course of that illness much difference of opinion existed among the several eminent gentlemen who were consulted from time to time, and since the operation performed by Dr. Sayre has been detailed in his open letter published some time since, criticism has been freely expressed. The disease was first pronounced cirrhosis of the liver; afterwards it was considered to be chronic pneumonia with disintegration, without hepatic complication, by a physician of national reputation for accuracy of diagnosis and superior judgment; and finally it became evident that the liver had become attached to the lung, and that the profuse expectoration came from that organ.

We have heard it suggested that the existence of hydatid cysts of the liver accorded with the history and symptoms more perfectly than any other pathological condition, and we think this view quite feasible indeed. It is to be regretted that no autopsy was made.

A model review of the operation performed by Dr. Sayre upon this illustrious patient has appeared in *The Medical Record* for July 24. 1875, from the pen of Dr. William Carson, of Cincinnati. Dr. Carson clearly shows in this review, that in such cases the safest transit of matter is through the lungs, and declares that from the report of the case given by the operator, there was no indication for operative interference. He further states, that by the incision made into the pleura another immense suppurating surface was added to that in the liver, and that the operation should have been guarded by an exploration with the aspirator. As Dr. Carson very appropriately remarks, abscess of the liver is not a very rare disease in this country, and it is desirable to know if the procedure in this case is a safe one. It is to be hoped that the eminent surgeons connected with the case will "rise to explain."

I am, Sir,

Very respectfully,

ALUMNUS OF THE UNIVERSITY OF LA.

NEW ORLEANS, Aug. 26th, 1875.

To Editor of N. O. Medical and Surgical Journal:

DEAR SIR—In compliance with your request for an account of

the present visitation of yellow fever at Pascagoula, Miss., the following report of my investigation is placed at your disposal.

I took the evening train of the 18th inst. for Scranton, and met a cordial reception from the citizens, both medical and non-medical. Every facility for investigation was put at my disposal, and during the twenty-two hours of my stay, I endeavored to make the best use of the time by visiting the sick and the infected locality, and by obtaining information from various sources.

It appears that eleven cases have occurred up to date, all but one on the place rented by Dr. Bradfield. The first case, a sister of the doctor, sickened Aug. 4th, and died on the 10th. Dr Bradfield and his brother were attacked on the 6th, the former dying on the 12th and the latter on the 13th.

Other cases were attacked up to the 9th inst., since when the disease seems to have come to a pause. Of the ten cases which have occurred in this yard, five have died and the others have recovered or are convalescent.

The locality is naturally a delightful one, being in immediate proximity to the Pascagoula river, somewhat elevated, and about a quarter of a mile below the railroad station at Scranton. It is said that some of the cabins, which were rented out to various parties, were not kept in a clean condition, and my attention was particularly directed to a pile of fresh oyster shells at the edge of the river. I do not, however, attach any special importance to these circumstances, in connection with the late outbreak.

Recent inquiries have developed a piece of history which seems to throw light on the origin of the fever this year at that point. Last year a Mr. Cartland died in the same house lately occupied by the Bradfield family. After his death a number of mattresses and counterpanes were taken out of the house by the agent of the property, and put for safe keeping in a vacant room of an adjoining house. There they remained undisturbed till the arrival of Dr. Bradfield in December last. He then removed them back and made use of them in his own family up to the time of his death. Since then they have been destroyed by fire. The most probable supposition, to my mind is, that the infection remained dormant in this bedding since last year, until the heat of the present summer had continued long enough to give it renewed activity. As cases have occurred in several different houses on this immediate spot, it is evident that the whole loca-

lity gradually became infected; and, as no systematic measures of prevention have been adopted, beyond the burning of bedding, it seems not improbable that the infection may spread during the present season around this infected locality. It being situated at some little distance from other dwellings, and not on a traveled thoroughfare, we are at no loss to account for a pause in the progress of the disease. At the same time such a length of time has elapsed since the outbreak, that I judge it impracticable to circumscribe and limit the infection by the use of disinfectants.

The additional case, separate from the above, was in the person of Capt. Peter Willerson, of the schooner Oloff. He sickened August 6, and died on the 10th, at a house about one fourth mile northeast of the railroad station. This schooner had just returned from a trip to New Orleans, when the captain was taken sick. She had also been used to lighter lumber to vessels lying at anchor off Pascagoula, but not for about two months previous to this trip. It also appears that she was infected with yellow fever last year. During this season she was sunk near Ship Island, but was raised after three days. No other case has occurred in connection with her up to date. As there was no yellow fever in New Orleans at the time of his visit to the city, Pascagoula must be accredited with the production of this case, but how or where we can only conjecture, with our present knowledge.

It is also reported that a sick sailor from the brig Williams lay one night, about the 25th of July, on the platform of the railroad station at Scranton, whence he was taken by the morning train to Mobile, where he is supposed to have died at the Marine Hospital. Soon after, the station agent was taken with a fever, but recovered after eight days' illness. This matter has no connection with the recognized cases of yellow fever, and may have no special significance.

I had an interview with Dr. Moore, who lives near the beach and practices along the sea shore, and aboard the shipping. July 10-20 he was attending some cases of fever (the mate and four seamen), on board the British brig St. Michael, from Havana. According to the doctor's description, these cases bore some resemblance to yellow fever, but they were of a mild type and all recovered. They were treated with quinine and veratrum viride. At the present time he is treating some similar cases at the old

hotel down the beach. I saw three of them—one sick four days, another one day, and the third only a few hours. From a single inspection I am not prepared to admit either as a case of yellow fever, especially as one is a young married woman and another a young child. I saw, however, about a half mile from the beach, a married couple both sick, without previous medical attention. The man had been employed on a lighter, loading vessels with lumber. He had been sick since the previous day, and presented some of the usual appearances of a mild attack of yellow fever in the second day. His wife's case was less marked, and would pass for an ordinary case of malarial fever, in the absence of suspicion of yellow fever.

Thus it appears that no undoubted cases of yellow fever have yet occurred at the beach, or at any other point more than half a mile from the railroad station; and at the same time there appears to have been only one focus of infection ashore.

The prospect as regards this outbreak has already been intimated. It may be proper now to make some remarks on the introduction of infection from the shipping. Vessels are arriving, at all seasons of the year from various West Indian and South American ports, but on account of shoal water, they are obliged to lie at anchor several miles from shore. They come in ballast, and receive their cargoes of lumber on lighters from the mills along the river. The danger is not from introduction of infected merchandise, but from contraction of the fever by the lightermen who live ashore, and introduction of cases from the crews of these foreign vessels. Unless the latter brought ashore some of their effects, the danger would not probably be great, but still sufficient to justify more precaution than is now exercised. Besides, some small vessels carry lumber directly from the mills to infected ports, and herein lies especial danger.

It is clear, therefore, that some system should be put in execution to prevent conveying the infection from these foreign vessels to the shore. A medical health officer should visit every vessel that arrives, before any communication is allowed with the shore. If she come from an infected port, or has been at any without subsequent disinfection, her hold, cabin and forecastle, including the personal effects of the crew, should be thoroughly fumigated with sulphur. If there are cases of fever aboard, the disinfection must be postponed until after their termination. It

is important that the bilge-water should be frequently pumped out, and carbolic acid should be thrown down the pumps.

By attention to these precautions, which would scarcely interfere in the least degree with the vessel's legitimate business, the danger of communicating yellow fever to the shore would be reduced to a minimum; whereas, under the present lack of systematic means of prevention, the inhabitants live in danger of a yearly return of the visitor that has brought such consternation there two seasons, and subjected them to serious inconveniences in their intercourse with their neighbors.

Very respectfully, yours,

S. S. Herrick, M.D.

Evergreen P. O., Avoyelles Parish, La.,
March 15th, 1875.

Editor New Orleans Medical and Surgical Journal:

"Veratrum Viride and Gelseminum." Dear Sir—In perusing the medical journals of the last few years, I am forcibly impressed with the conviction that the action of these two wonderful medicinal agents is very improperly understood by very many of the medical profession. I was very greatly surprised to learn within the past two years that many physicians administered veratrum viride in nearly all cases of arterial excitement, under the impression that if they could control the heart's action and reduce it to a normal standard, that the cause would most naturally be removed. That reminds me very much of the tactics of an engineer who would forcibly regulate the revolutions of the driving wheel, when the boiler had become too hot on account of the pipes being clogged with inappropriate substances. I have given veratrum viride within the last few years without adhering to any prescribed rules in regard to the dose as laid down by writers. I have given it in an infinitude of diseases and my firm and unvarying conclusion is, that *veratrum viride* has no potency as a remedial agent except in diseases of the *respiratory* organs, and in simple *congestive headache*, and that its beneficial action in diseases of the respiratory organs is only under certain conditions.

In pneumonitis and bronchitis where there is profuse expectoration, either mucous, muco-sanguineous, or muco-purulent,

veratrum viride will invariably aggravate the disorder, I have given as largely as twenty-two drops as the dose under such conditions without lessening the heart's action one beat; but almost always with the effect of increasing the velocity of the pulse, increasing the expectoration and lessening the vital forces; but in those cases in which there is no mucous secretion within the bronchi or in which the secretions are tenacious, either in the tubes proper, or, in the smaller ramifications, or, in which there is great congestion of the substance of the lungs, the veratrum viride given boldly "acts like a charm," not in *arresting* the disease, understand me, but in producing an altered condition which *is amenable to other* treatment.

Although a little digressive, it may not be uninteresting to mention that a case may present of the last mentioned type in which the v. v. *per se*, will exert no beneficial action on account of perfect apathy of the stomach, the medicine failing utterly to impress, in such cases, a few grains of quinine given with each dose will speedily bring about the desired result.

Gelseminum is a medicine of great efficacy; but I am satisfied that we ascribed virtues to it which it does not possess. A writer in the "Richmond and Louisville Medical Journal," in the volume for 1872, extols its action in our winter (so called) diseases, embracing—if I remember rightly—pneumonia, pleurisy, and bronchitis. Now, with considerations of the utmost respect and esteem for theories, as well founded on misconception as upon practical observation and demonstration, I must demur against any such therapeutical action on the part of gelseminum in any *inflammatory* disease whatever.

I have administered gelseminum very largely, and that generally in the form of saturated tincture for the last ten years, and my experience with it, based upon the closest observation, leads me to unhesitatingly affirm that it exerts no beneficial influence over arterial excitement based upon *inflammatory* action, except, perhaps a very mild diaphoretic and diuretic action, scarcely such as we would obtain from that almost worthless compound, spts. nitric ether; but in diseases or rather derangements of a *non*-inflammatory character, succeeding slight congestions, as in intermittent fever, it is the "sine qua non." In such cases it excites speedily the most copious diaphoresis and, unlike veratrum viride, it does not lessen directly the *velocity* of the heart's action; but has a rapidly sensible effect upon the *force* of the heart's

action, and just before the fever has entirely subsided, you will find the pulse as rapid as when at its highest; but as soft as an infant's; and in a few moments more you will find the heart at most perfect rest. In fact, its effects in intermittent fever are so delightful that if one is languid and heavy in the summer season he would almost wish for a slight paroxysm just for an excuse, but when just such sensations as these creep over one in the hot days of August, a listless, apathetic feeling, cold and hot sensations alternating in quick succession, a few full doses of gelseminum, digitalis and acetate of potash will soon put him on the wing again *without calomel* or "*Simmons' Liver Regulator.*"

Very respectfully,

JAS. W. MURDOCK, M.D.

EDITORIAL.

*Plan for a State Board of Health in Texas.**

It will be remembered that the notice of the Transactions of the Texas State Medical Association for 1874, in our last issue, made mention of a plan to constitute this Association a State Board of Health. Since then we have received a copy of the memorial addressed by a committee on the part of the Association to the Legislature, from Dr. R. H. Harrison, a member of the committee. The most important features of the plan are the following:

That the officers of the State Medical Association shall be the executive officers of the Board of Health; that the latter body shall appoint County Boards of Health, and define their duties; that these subordinate bodies shall be the medical examining committee for their respective counties; and that the State Board annually make a report to the Governor, previous to the assembling of the Legislature, recommending such measures as might seem proper for legislative action.

It is proper to remark here, that the Legislature of Texas has already enacted that no one shall hereafter practice medicine in that State who has not received the degree of M.D., or passed an examination before a county board of examiners appointed by the county court for that purpose. The administration of this

* This editorial was prepared for July issue, and was laid over for want of space.

proposed law is hereby to be placed in the hands of the State Medical Association, to be carried out by the county boards appointed by and subordinate to this body. We believe this provision will be a judicious change from the original plan of the act; for the State Medical Association is better qualified than the Courts to select suitable physicians as examiners, and besides can prescribe uniform rules and conditions of examination throughout the State, which are not practicable under the existing law.

But while on the subject of examination of candidates for practice, we offer the opinion that the Legislature should have taken one step further, and enacted that all should pass the same examination, whether possessed of the degree of M.D. or not. If the graduates are not willing to submit to the test, then they do not deserve the protection from unqualified practitioners which they seek; if they are unable to pass the examination, then of course they are unfit to practice.

As regards the other features of the memorial, we find nothing open to objection. In the absence of a Board of Health with ample powers clearly defined, it will certainly be a great advantage to the State to have the advice of the representative body of medical men brought in a recognized shape before the Governor and Legislature. Similar advantages would accrue from the advisory action of the subordinate county branches, as brought to bear, on similar occasions, upon county and municipal authorities in matters relating to hygiene and the repression of epidemic diseases.

This organization might be invested also with such important functions as the preparation of vital statistics, the arrangement of meteorological observations, the gathering, preservation and compilation of materials for a medical history of the State.

On the whole we believe that the plan proposed by the memorialists is calculated to be of great service to the State, and trust that they will, by persevering in their efforts, induce the Legislature to adopt their views.

The Medical Protective Association of New Orleans.

The attention given to this organization by the medical press

of the United States, is sufficient testimony of the importance of such movements, in the present estimation of the profession. While, for many reasons, the necessity for this organization was more pressing in this city than in most other places, the sympathy and interest manifested throughout the country for its success, show that it has touched a responsive chord in the hearts of the whole profession.

Want of coöperativeness has hitherto been the one great error and misfortune of the medical profession of New Orleans. The learning, skill, industry and energy of the physicians and surgeons practising here, reach as high a standard as in any other of our large cities. Yet that uncouth old motto, which holds that "every tub should stand upon its own bottom," has seemed to govern our conduct much more than the lesson to be derived from the fabled bundle of rods That this condition of things has existed, is no doubt in some part ascribable to the fact that our profession here, is made up of members speaking different languages, and separated by those ethnological distinctions which are so often barriers to human sympathy, or fellowship. Now that these difficulties have been in a measure overcome by the assemblage and combination of the great majority of physicians of the city, let us not permit the good work to stop, until we have achieved all those advantages which union and associate effort are capable of conferring. Such advantages may be classed under three heads, to-wit: First; those material benefits which spring from mutual agreement in regard to rates of compensation for professional services, and mutual aid and countenance in the collection of fees. Measures designed to secure these ends are already in progress. Second; a Medical Benevolent Society, or Mutual Benefit Association, should be organized, which shall include all physicians who desire their families to profit by its pro-provisions—not in the city alone, but throughout the whole southern country. One ruling feature of this Association should be to provide a fund to be paid to the families of physicians who die in indigent circumstances. Third; the substantial advancement of medicine as a science and as an art. This is to be done by the encouragement of medical societies, wherever possible to establish them, and by the diffusion of medical information, so that knowledge and skill in medicine and surgery shall be rendered, as far as practicable, a common stock.

In the November issue of this JOURNAL it is proposed to submit for the consideration of the profession, plans of coöperation under these various headings.

Ziemssen's Cyclopædia of Practical Medicine.

The third volume of this work has reached us too late for a critical review. Its great merits demand of journalists a careful notice, which will appear in our next issue.

Health of the City.

The mortality reports of this city have, during the whole of this summer, exhibited a remarkably low death rate. We may safely state that very few of our large cities have been more free from sickness. Small-pox has still lingered about certain localities in the city and occasioned some deaths. Scarlatina has also been prevalent, and although the greater number of cases have proved so mild as to require little or no medication, it has not failed here, as everywhere else, to mark its career by deaths through the primary influence of the poison; through disease of the kidneys, and also by impingement upon the structures of the throat. We have been, to a greater degree than usual, exempt from violent attacks of malarial fevers, and until the date of the present issue yellow fever has not claimed its accustomed number of victims even when most sporadic in character.

Obituary.

Died in this city on the 26th of August, 1875, EMMANUEL FAGET, (son of Dr. J. C. Faget), born in France, December 25th, 1866.

METEOROLOGICAL REPORT FOR NEW ORLEANS.

Table I---July.

Day of Month.	Temperature.			Mean Barometer Daily.	Relative Humidity—Daily.	Rain fall—inches
	Maximum,	Minimum.	Range.			
1	88	75	13	30.106	74	.00
2	90	74	10	30.036	66	.00
3	87	76.5	10.5	29.940	71	1.25
4	91	77	14	29.922	74	.00
5	91	78.5	12.5	30.000	77	1.08
6	90	77.5	12.5	30.030	74	.42
7	91	77	14	30.088	67	.00
8	85.5	77.5	8	30.005	77	.41
9	87	74.5	12.5	30.027	74	.17
10	88.5	76	12.5	29.963	68	.00
11	90	76.5	13.5	30.037	70	.00
12	90	76.5	13.5	30.088	71	.00
13	90	77.5	12.5	30.097	72	.00
14	93	77	16	30.100	70	.01
15	94	76.5	17.5	30.063	67	.00
16	95	76.5	18.5	30.050	68	.40
17	83	75.5	7.5	30.025	77	.19
18	88	76	12	29.927	75	.47
19	83	72.5	10.5	30.036	80	.00
20	91.5	76.5	15	30.063	73	.00
21	84	77.5	6.5	30 074	72	.61
22	92	76	16	30 097	67	.00
23	91	77	14	30 094	72	.00
24	88	76.5	11.5	30.100	72	.00
25	88.5	77	11.5	30.124	75	.45
26	91.5	77.5	14	30.175	75	.00
27	93	77	16	30.199	63	.00
28	92	77	15	30.115	64	.00
29	90	77.5	12.5	30.006	72	.20
30	91	77.5	13.5	30.113	78	.20
31	91	78	13	30.106	74	.38
Mean..	89.63	76.55	13.08	30.066	74.20	Total. 6.24

Table II---August.

Day of Month.	Temperature.			Mean Barometer Daily.	Relative Humidity—Daily.	Rain fall—inches
	Maximum.	Minimum.	Range.			
1	90	77.5	12.5	30.029	77	.16
2	87.5	74	13.5	30.031	68	.00
3	89	73	16	30.105	55	.00
4	92	74	18	30.085	57	.00
5	92	77	15	30.099	64	.03
6	85	75	10	30.040	77	.03
7	85	73.5	11.5	30.014	77	.00
8	90.5	74	16.5	30.005	69	.00
9	92	75	17	29.998	71	.00
10	86	75	11	29.922	73	.00
11	88	74	14	29.940	78	2.61
12	86.5	69	17.5	29.940	80	.41
13	87.5	74	13.5	29.980	78	.73
14	80	75.5	4.5	29.928	84	.53
15	84	74.5	9.5	29.936	86	.63
16	80.5	74	6.5	29.985	84	1.40
17	80.5	74	6.5	29.996	85	.25
18	88.5	72.5	16	29.974	72	.00
19	85.5	73	12.5	30 009	64	.00
20	82	73.5	8.5	30.009	78	.00
21	76.5	73.5	3	30.080	85	.50
22	85	70	15	30.137	70	.00
23	86	73.5	12.5	30.115	76	.00
24	84	74.5	9.5	30.099	77	.38
25	85	74	11	30.088	79	.00
26	85	74	11	30.041	79	.28
27	86.5	74	12.5	30.037	77	.00
28	87.5	75	12.5	30.050	78	.01
29	88.5	77	11.5	30.058	80	.34
30	87.5	76.5	11	30.007	80	.35
31	—	—	—	—	—	—
						Total.
Mean..	86.12	74.13	11.98	30.026	75.40	8.63

Mortality in New Orleans from June 28th, 1875, to August 29th, 1875, inclusive.

Week Ending	Scarlet Fever.	Malarial Fevers.	Consumption.	Diarrhœal Diseases.	Total Mortality.
July 4.....	2	6	16	6	112
July 11.....	5	7	15	16	136
July 18.....	3	10	17	9	125
July 25.....	5	7	16	8	113
Aug. 1.....	5	10	12	9	136
Aug. 8.....	3	20	14	9	109
Aug. 15.....	6	18	15	4	120
Aug. 22.....	6	15	17	4	110
Aug. 29.....	6	14	16	6	108
Totals.....	41	107	138	71	1069

THE

NEW ORLEANS

MEDICAL AND SURGICAL JOURNAL.

NOVEMBER, 1875.

ORIGINAL COMMUNICATIONS.

CASES, MEDICAL AND SURGICAL, FROM THE CASE-BOOK OF JOHN WALTON ROSS, M.D.

PASSED ASSISTANT SURGEON UNITED STATES NAVY.

TYPHOID FEVER—SEVEN CASES; ONE DEATH.

The following are synopses of seven cases* of typhoid fever, received at the Norfolk Naval Hospital from the Norfolk Marine Barracks during the summer of 1874.

Case I.

Frank Evans, private U. S. M. C., aged 21 years; native of Philadelphia, where he enlisted August 14th, 1871; admitted to hospital June 11th, 1874.

On admission—15th day of disease—there were diarrhœa, marked prostration of strength, and slight pyrexia; temperature 102.6°. Patient stated that the disease began with decided chill, having been preceded by diarrhœa for about three days; that he had had fever ever since, over which quinine seemed to have no control, and had been growing "weaker and weaker all the

* Of these cases, the 2d, 4th and 5th, were not treated by me. Their introduction here is necessary, however, to make the history of the outbreak of typhoid fever, of which they form an important part, anything like complete. The remaining 4 cases were under my charge J. W. R.

time." Improvement began almost immediately after entrance upon treatment, but progressed so slowly that the patient was not considered fit for duty until the 21st of July following— 46th day of disease—when he was discharged to duty in perfect health.

Case II.

Morris Independence Bechtel, private U. S. M. C., aged 23 years; native of Pennsylvania; enlisted at Reading, Pa., July 11th, 1872; admitted to hospital June 24th, 1874—the 11th day of the disease.

Patient stated that he was taken sick, feeling "hot and chilly," while on post, having felt perfectly well a few moments before. This case presented all the essential phenomena of typhoid fever except the rose-colored spots. The temperature was highly characteristic, varying from 103° in the morning to 104° in the evening. A relapse occurred on the 21st day of the disease, convalescence having fairly begun. It was due to imprudence in eating, and began with a copious intestinal hemorrhage. Recovery was complete by the 7th of September—55th day of disease—when patient was discharged to duty.

Case III.

Theobald Walter Butler, private U. S. M. C., aged 23 years; native of England; enlisted at New York June 25th, 1873; admitted to hospital July 3d, 1874—19th day of disease. This patient entered the hospital in an exceedingly grave condition. The most prominent symptoms were deafness; active, talkative delirium, with delusions; sordes upon the lips, teeth and gums; dry, red, glazed tongue; tympanitis; gurgling in right iliac fossa; offensive diarrhœa, and a temperature of 104°F. There were two or three lenticular spots upon the abdomen of a livid-red hue. During the whole course of the disease there was never shown any disposition toward improvement. The diarrhœa was almost uncontrollable, and the temperature remained obstinately in the neighborhood of 106°F.

Death took place on the 22d of July—the 38th day of the disease—from exhaustion.

Table of Temperature, Pulse, and Respiration—Walter Butler's Case.

Day of Disease.	19		20		21		22		23		24		25		26		27		28	
Time.....	M.	E.	M.	E.	M.	E.	M.	E.	M.	E.	M.	E	M.	E.	M.	E.	M.	E.	M.	E.
Temperature..		104	103.4	105	101	106	105	105.5	104	105.8	105	106.2	105.3	105.9	100.4	105	104.4	106.1	104	105.2
Pulse, per min.		86	90	90	80	98	90	84	77	80	90	90	82	90	110	112	112	108	100	120
Respir'ns, p. m.		25	30	32	36	32	25	30	32	30	26	30	28	30	23	25	28	30	20	40

Day of Disease.	29		30		31			32			33			34		35		36		37		38
Time.....	M.	E.	M.	E.	M.	N.	E.	M.	N.	E.	M.	N.	E.	M.	E.	M.	E.	M.	E.	M.	N.	M.
Temperature...	104 5	105	104	105.3	103	103.8	105	103.5	104.4	106	103.2	104.1	105	103.4	106	103.8	105	103.6	104	102.6	100	Death at 7 45.
Pulse, per. min.	110	110	105	102	98	.....	100	102	.....	100	100	.....	102	100	110	122	122	118	122	.....	120	
Respir'ns, p. m.	38	36	26	29	25	.....	30	25	.....	30	27	.....	30	32	37	47	41	40	38	.....	28	

The remaining four cases were typical ones of typhoid fever, differing from each other only in degree, their gravity decreasing progressively from the 4th to the 7th inclusive. There were in all, frontal headache, deafness, diarrhœa, tympanitis, gurgling in the right iliac fossa, the specific eruption, and the characteristic temperature.

Case IV.

Timothy James Lucy, private U. S. M. C.; native of Reading, Pa.; aged 29 years; enlisted at Washington, July 12th, 1872; admitted to hospital July 11th, 1874—11th day of disease. The disease began with a chill. The highest temperature was 105.4°. There was a crisis on the 24th day, the patient lying apparently moribund for 10 hours, after which convalescence set in. Recovery was complete on the 7th of September—69th day of disease—when the patient was discharged to duty.

Case V.

Augustus Jankowski, private U. S. M. C., aged 21 years; native of Prussia; enlisted at Richmond, Va., July 7th, 1873; admitted to hospital July 11th, 1874—7th day of disease. This patient had two intestinal hemorrhages on the 21st day of the disease; his highest temperature was 105.2°; discharged to duty September 7th—65th day of disease—in perfect health.

Case VI.

Benneville Kline, private U. S, M. C., aged 36 years; native of Philadelphia; enlisted at Philadelphia, May 15th, 1873; admitted to hospital July 30th, 1874—4th day of disease. This patient had bronchitis, of the larger tubes, throughout the attack; highest temperature 104.2°; discharged to duty September 23d—59th day of disease—only a slight cough remaining.

Case VII.

Charles A. Bryden, corporal U. S. M. C., aged 25 years; native of Baltimore; enlisted at Baltimore, August 23d, 1872; admitted to hospital August 5th, 1874—5th day of disease. The onset of the fever was preceded for two weeks by severe pains in the back and limbs. The highest temperature was 104.5°,

The patient was discharged to duty in perfect health, September 23d, 1874—54th day of disease.

Excepting the one who died, he having been delicate and of feeble mental power, the above patients were in excellent health before the illness under consideration. They were kept under observation for a few months after their return to duty, and all became vigorous and healthy.

The *origin* of this epidemic is a question of considerable interest and importance, and is involved in some obscurity. The medical officer of the Yard thought it originated *de novo* on board the hulk St. Lawrence, where the Marines were then quartered. The hygienic condition of this vessel was indeed deplorable. Every provision seemed to have been made for the generation and detention of the products of animal and vegetable decomposition between her decks. She leaked badly, being very rotten, and the rain entered freely through her sides and decks. At the same time, the fresh air and sunlight were carefully excluded. Without denying to the contagion of typhoid fever the power of spontaneous generation, I am strongly inclined to believe that in this case it was introduced on board by the first patient, Evans, who contracted the disease whilst on shore on liberty. When seized with the initial chill, this patient had been living on board the "St. Lawrence" only six days, during the three last of which he had had constant diarrhœa. Prior to his transfer to the Marine Guard of the Yard, he was attached to the U. S. S. "Ticonderoga," then fitting out at this place, and had been passing about one-third of his time ashore, leading a rather dissipated life. Although he is not aware of having been exposed to the contagion of typhoid fever, this is very probable, the unusual prevalence of "genuine" typhoid in Norfolk and Portsmouth at that time having been the frequent subject of remark by the physicians of those places. No case of the disease occurred on board the "Ticonderoga" during her stay at this place.

The epidemic was arrested by the removal of the marines from the "St. Lawrence" to tents ashore. The two last cases described above showed themselves within a few days after the removal—this long-wished-for event having transpired during their period of incubation.

The general plan of *treatment* was the same in all the cases while in the hospital, having been varied to meet the requirements of each. Dilute sulphuric acid, with small doses of qui-

nine, was given to every patient. More importance, however, was attached to proper feeding than to medication. Milk, eggs, and "meat-juice" (Valentine's), were principally relied upon. The latter proved itself an admirable preparation, being highly restorative, and never giving rise to the unconquerable loathing which renders impossible the continuous administration of beef-tea. Alcoholic stimuli were required in every case, their exhibition being governed solely by the effect. One patient, Lucy, seems to have been saved by the free internal use of carbonate of ammonium during the crisis which occurred in his case. The remainder of the treatment was purely symptomatic, hyper-pyrexia being met by cold sponging, abdominal symptoms by warmth and moisture, diarrhœa by enemata of starch and opium. Diarrhœa was not interfered with, however, unless excessive, its severity determining materially the amount of stimulants required. The two cases of intestinal hemorrhage were apparently checked by the hypodermic use of ergotine. After all medicinal treatment was discontinued, each patient was kept upon carefully regulated diet until every symptom of intestinal ulceration had disappeared. The greatest care was taken to prevent the propagation of the disease among the attendants and patients of the hospital, and the measures adopted for that purpose proved successful.

SUNSTROKE—RECOVERY.

John Thomas Taylor, ordinary seaman, aged 21 years; native of Virginia; shipped at Norfolk, Va., July 21st, 1871; admitted to Norfolk Naval Hospital, from the U. S. S. "Powhatan," May 9th, 1874.

When admitted, patient was suffering from general syphilitic cachexia, oblong indurated nodes upon frontal bone, osteocopic pains, etc. Under iodide of potassium and cod-liver oil he improved rapidly, and in the course of a month was quite robust and rather plethoric. The nodes had all disappeared, but the pains would return almost immediately upon suspension of the iodide of potassium.

June 24th. While pulling in an open boat, under a hot noonday sun, patient suddenly became comatose. He was perspiring freely at the time, and gave no warning; had taken a litle whis-

key shortly before attack, but was not in the least intoxicated; was brought immediately to the hospital, and, when first seen by me, was completely comatose; skin hot and perspiring; respiration panting and shallow; pupils dilated; conjunctivæ intensely injected; pulse very frequent, small, compressible, and irregular; was undressed and put in a cool place, when he suddenly ceased to breathe. Artificial respiration, Sylvester's method, was resorted to, and in about 1½ minutes respiration began again in a small way. Ice was applied freely to the whole surface, and in 20 minutes the respiration and pulse had improved greatly, the heat of skin disappeared in great measure, and severe headache came on. Patient was still utterly unconscious, and his temperature was 102°F.; did not have time to take the temperature at an earlier period; gave 60 grains of bromide of potassium. There was great restlessness, with slight delirium and severe headache, during the night. Free purgation was secured, 20 grains bromide potass. given every 4 hours, and cold cloths kept constantly applied to the head.

June 25th. Patient slept a few hours in the morning and awoke much improved, complaining only of slight headache; nausea and weakness. The conjunctivæ were still injected; pulse frequent and feeble; temperature and respiration nearly normal. Patient improved rapidly, and in a few days was apparently in perfect health.

July 27th. Patient discharged from the service, his term of enlistment having expired, a very picture of good health; was warned to avoid becoming overheated in future.

DEAFNESS—RECOVERY.

William Wolff, private U. S. M. C., aged 36 years; native of Germany; enlisted at Philadelphia, August 19th, 1870; admitted to Norfolk Naval Hospital from the U. S. S. "Colorado," June 18th, 1874.

On admission, patient, in excellent general health, was quite deaf, requiring to be spoken to in a loud tone of voice. Hearing was almost entirely absent in the right ear. Patient stated that his deafness came on in 1862, after a severe "cold in the head," and had existed, with occasional remissions, ever since that time.

June 29th. Introduced Eustachian catheter, and found the cartilaginous portion of the right Eustachian tube considerably narrowed and rigid. Inflated the middle ear, after Politzer, and immediately after the entrance of air into the tympanum, which occurred on the left side at the first, and on the right side at the third attempt, the deafness was almost entirely relieved, much to the delight and astonishment of the patient.

July 1st. Eustachian catheter introduced with little or no difficulty, and the hearing was found almost perfect.

July 18th. The patient was discharged from the service, recommendation to that effect having been made prior to the restoration of his hearing. Patient stated at the time of his discharge that he could hear as well as he ever could, though this is not probable. Advised him to avoid "taking cold" as carefully as possible, and to have the tympanum inflated whenever there was any return of the deafness.

AORTIC ANEURISM—DEATH—AUTOPSY.

Edward Rothschell, orderly sergeant U. S. M. C.; native of Germany; aged 46 years; enlisted at Portsmouth, N. H., December 15th, 1873; admitted to Norfolk Naval Hospital, from the Norfolk Navy Yard, August 13th, 1874.

On admission, patient presented all the symptoms of an exceedingly severe bronchial asthma. This had come on at 6 a. m., 8 hours before admission, and had steadily increased in severity. Patient was immediately put to bed in a cool, airy place, well propped up, and a full dose of lobelia given, followed by an inhalation of steam impregnated with belladonna, soon after which he fell asleep utterly exhausted. There remained marked dyspnœa even during sleep. Next day the dyspnœa had abated considerably, never having disappeared, and an attempt was made at an examination. Patient stated that he had been in the service 20 years, during which time his health had been good until the preceding winter, when he took a cough, which had never left him; that his first paroxysms of dyspnœa came on in July last, and had steadily increased in severity and frequency since that time; said that during his whole life he had been short-winded, unable to run and leap like others of his age. He had been transferred from Portsmouth, N. H., to this place

for duty, in order to give him the benefit of a warmer climate, and had, immediately upon arriving here been sent to the hospital. He was a small, dark, spare, nervous man, presenting unmistakable evidences of premature decay, looking much older than he represented himself. His expression was peculiarly distressed, anxious and irritable; face, especially lips, puffed, and almost livid from capillary distension. The sitting posture, with head bent forward, was most comfortable, the recumbent being unbearable; no dysphonia; pulse increased in frequency, rather weak, and compressible. The temperature was slightly elevated, but not more than could be accounted for by the increased muscular exertion. Respiration was labored, stridulous, and incomplete, not much altered in frequency, but markedly so in rhythm, expiration being much prolonged. Dysphagia was so great that even liquids were swallowed with difficulty. Appetite was fair. Physical examination was rendered almost impracticable by the great nervousness of the patient, the only information gained thereby being decided enlargement of the heart without any displacement, and slight but deep seated dulness over upper sternal region. Auscultation was out of the question, a severe paroxysm of dyspnœa supervening upon the simple application of the ear to the chest.

The above symptoms pointed with great certainty to pressure upon the trachea and œsophagus, and a mediastinal tumor, most probably aneurismal, was strongly suspected, though the impossibility of satisfactory physical exploration made a positive diagnosis impossible. Ordered absolute rest in bed, and a moderate allowance of liquid nourishment, chiefly eggs and milk, and the following prescription: ℞—Potassii iodidi, ʒi; tinct. gentianæ comp., f℥j; aquæ, q. s. ad f℥vi. ℳ. Ft. sol. S. Tablespoonful thrice daily.

September 15th. Decided improvement in every symptom except dysphagia, paroxysms of dyspnœa being warded off by the free use of tincture of lobelia. Came to the conclusion that the case was one of mediastinal tumor, complicated with true bronchial asthma.

October 28th. For more than a month patient had grown steadily worse, nothing affording him any relief; the dyspnœa having become constant and extreme, and dysphagia so great that liquids were ingested only after a prolonged trial, patient crying "It is of no use." Matters grew worse and worse, and

death, from apnœa and exhaustion, occurred at 4 a. m., October 30th, 1874.

An autopsy was held seven hours after death. The body was greatly emaciated, and rigor-mortis was very poorly marked. An aneurism was found involving the whole of the transverse and the beginning of the descending portions of the arch of the aorta, irregularly oblong in shape, as large as a man's arm, extending principally backward. The tumor was filled with laminated fibrin, except along its lower aspect, where there was a narrow channel filled with freshly-coagulated blood. The heart was found healthy, except that the left ventricle was much hypertrophied. At the apices and posterior borders of both lungs were found numerous collapsed lobules surrounded by emphysematous patches. Both pleural cavities were obliterated by firm and apparently old adhesions. The superficial arteries were rigid and tortuous, and the costal cartilages almost completely ossified.

AORTIC ANEURISM—DEATH—AUTOPSY.

Charles T. A. Toussell: paymaster's yeoman; aged 35 years: native of Sweden; appointed at Philadelphia, November 8th, 187-; admitted to Norfolk Naval Hospital, from the U. S. S. "Richmond," December 21st, 1872.

According to Case Paper, the patient was admitted with undoubted signs of aneurism of the abdominal aorta, severe and constant pain, apepsia, and extreme debility and emaciation, being confined to the recumbent posture. Nothing was said in regard to origin, save that patient stated that he had observed pains and distress in the abdomen for nearly a year before entering the service. He grew slowly and steadily worse until the latter part of July, 1873, when he began to improve, iodide of potassium having been prescribed for him a short time previously. In less than a month after beginning the use of this drug he was so much better that he was able to walk about the ward. Thenceforward improvement was slow, but appreciable, until the latter part of January, 1875, when rupture of the aneurismal sac took place, following the ascent of a stairway by the patient. The iodide of potassium was suspended several

times during the improvement, whereupon the symptoms all invariably grew worse, when its use was resumed.

Death took place at 10 p. m., January 26th, 1875, preceded by the usual signs of slow internal hemorrhage. Patient informed me, shortly before his death, that while at work in the Boston Custom House, in the autumn of 1871, he "strained himself" weighing lead, and "felt something give way inside;" stated that he had always been healthy, but slender, and not very strong.

Autopsy 12 hours after death: Body greatly emaciated; rigor-mortis slight; heart enormously hypertrophied; aorta much dilated, and opposite 9th dorsal vertebra opened into an aneurismal sac as large as a child's head, oblong in shape, extending between the pillars of the diaphragm into the abdominal cavity. This aneurism was found filled with loosely coagulated blood, but *no laminated fibrin*. There was a rent 2½ inches long in the lower part of the anterior wall of the sac, through which a large amount of blood had escaped behind the peritoneum, dissecting this from the posterior wall of the abdomen and separating the folds of the mesentery. The whole abdomen and pelvis seemed filled with blood, the peritoneum remaining entire. This membrane was found thick, opaque, and strong, this having probably been caused by the prolonged irritation of the aneurism. There was much erosion of the left sides of the 9th, 10th, 11th, and 12th dorsal vertebræ, decreasing in extent from below upward. The smaller arteries throughout the body were rigid and tortuous, and the bones were remarkably light and spongy. The great omentum had almost entirely disappeared, and the intestines were thin, diminished in calibre, and of a peculiar waxy, translucent appearance.

TRAUMATIC PERITONITIS—DEATH—AUTOPSY.

Jacob Kendall Hayshire; oysterman; native of Hampton, Va.; aged 51 years; admitted to Norfolk Naval Hospital at 11 p. m., August 14th, 1874.

Patient, his mind perfectly clear, stated that while in the river in front of the hospital, in a small boat, without a light, the night being very dark, he was run down by a steamer, went under the wheel, and was "knocked all to pieces." He was picked up by a couple of negroes who, passing in a boat, were

attracted by his cries. On being brought to the hospital he was wet, cold, deadly pale, almost pulseless, respiration shallow and sighing, intense thirst—with, in short, unmistakable evidences of profound shock. The only external sign of injury was a slight contused wound of the upper lip. Patient was put to bed, dry heat and sinapisms applied externally, with diffusible stimulants internally. In the course of two hours reaction was established, when the patient began to complain of violent cramping pain in the abdomen. This was soon followed by extreme tympanitic distension of this region, and the facies and position so characteristic of peritonitis. The tongue became dry, brown and hard; sordes collected on the teeth, and other adynamic symptoms rapidly supervened. Morphia was administered hypodermically, p. r. n., and milk-punch freely given. Patient went steadily on from bad to worse, and died at 7 p. m., August 15th, 1874.

An autopsy, 22 hours after death, revealed an oblique rupture of the left psoas magnus muscle, involving to a somewhat greater extent the superincumbent peritoneum. There were the evidences of intense peritoneal inflammation extending from the seat of rupture in every direction, the contiguous portions of the mesentery and great omentum being implicated. Blood in considerable amount was found in the peritoneal cavity. The liver was slightly diminished in size, and presented well-marked evidences of commencing cirrhosis. Patient was said to have been a hard drinker. Death was due to *traumatic peritonitis*, and occurred in about *twenty-one hours from receipt of injury.*

HYDROCELE—OPERATION—RECOVERY.

John Miller; ordinary seaman; aged 44 years; native of Meta, Russia; shipped at Baltimore, November 5th, 1873; admitted to the Norfolk Naval Hospital, from the U. S. S. "Powhatan," June 1st, 1874.

Patient, a man of superb physique and perfect general health, had three (3) ounces of fluid in the right tunica vaginalis testis, the corresponding testicle and epididymis being considerably enlarged and slightly tender. The hydrocele originated in an orchitis caused by a blow received in the line of duty, three months before admission. Ordered iodide of potassium inter-

nally, mercurial ointment externally, and a suspensory bandage.

June 6th. Evacuated 3 ounces of fluid from hydrocele with trocar and canula; admitted air freely, and rubbed the opposed surfaces of the sac together pretty roughly, with the hope of getting up enough inflammatory action to effect a cure. The fluid re-accumulated slowly, and in a few weeks was in larger amount than before the operation, patient making himself very useful in the meantime.

July 26th. Removed six ounces of fluid from tunica vaginalis with aspirator, and injected two fluidounces of undiluted tincture of iodine. Found testicle and epididymis reduced to almost their normal size, and not at all tender upon pressure. The iodine injection caused intense pain for a few hours requiring the free use of morphia.

August 17th. Hydrocele larger than ever, the effusion following the operation not having undergone absorption, and the tunica vaginalis apparently distended to its utmost. Thinking that possibly absorption was prevented by the extreme distension of the sac, I removed 3 ounces of fluid and applied a well-fitting suspensory bandage.

August 22d. The fluid had disappeared entirely, and excepting very slight induration and enlargement of the epididymis, patient was cured. Iodide of potassium and mercurial ointment were continued.

Patient was discharged to duty December 11th, 1874, having for several months acted as nurse, no traces of disease remaining. The medicinal treatment was suspended a few weeks before his discharge.

HYDROCELE—OPERATION—RECOVERY.

Albert Black; landsman; aged 21 years; native of Virginia; shipped at Baltimore, November 26th, 1873; admitted to the Norfolk Naval Hospital, from the U. S. S. "Brooklyn," October 13th, 1874.

Patient, a robust, healthy looking man, had, on admission, hydrocele of the right and varicocele of the left side. The former followed orchitis due to contusion of right testis by a fall astride a chain, in the line of duty. The tunica vaginalis con-

tained 2 fluidounces of serum, and the testicle was somewhat enlarged and indurated, though not in the least abnormally tender on pressure. Under the internal use of iodide of potassium and external use of ung. hydrargyri, the hydrocele diminished in size for 2 weeks, at the end of which time without any ascertainable cause it began slowly to increase, and at the end of another fortnight was larger than when patient was admitted.

November 15th. With the aspirator the whole of the fluid, 3 fluidounces was removed and a suspensory bandage was applied.

December 8th. Fluid re-accumulated in larger amount than before tapping. Removed it and injected undiluted tincture of iodine, the latter giving rise to only a slight burning pain which lasted for more than an hour.

December 18th. Hydrocele larger than before attempt at a radical cure; the effusion immediately following the injection having remained. Removed the whole of the fluid with the aspirator.

December 22d. Patient discharged from the service at his own request, on account of varicocele, no trace of hydrocele remaining.

The relief in this case was probably permanent, but the shortness of the time during which it remained under observation after the operation prevents a positive opinion upon the subject. In this and the preceding case the abundant effusion following the iodine injection seemingly prevented its own absorption by compressing the vessels of the tunica vaginalis and obstructing the circulation through that membrane. May not this be at least an occasional cause of failure of the operation by injection for hydrocele? When after the operation such is supposed to be the cause of failure, I would advise that tapping be not deferred too long, i. e., till the alterative impression produced by the injected substance upon the tunica vaginalis has passed away.

STRICTURE OF THE URETHRA WITH PENILE FISTULA.

Samuel Bradford; coxswain; aged 35 years; native of England; shipped at New York, May 18th, 1872; admitted to Norfolk Naval Hospital, from the U. S. S. "Powhatan," July 22d, 1874.

On admission, patient, in good general health, had an extremely hard cartilaginous stricture of the penile portion of the urethra, commencing 2½ inches from the meatus and extending

backward a little more than an inch, through which I was unable to pass the smallest bougie or probe in the hospital. The stricture was evidently of long standing, being surrounded by a dense, callous, fusiform swelling, which rather more than doubled the normal diameter of the penis. Near the posterior border, and upon the inferior aspect of this tumor, were two small fistulous openings through which the greater part of the urine was voided, only a small portion finding its way out through the meatus externus. Patient stated that during his life he had had two attacks of gonorrhœa, one five, the other three years prior to admission, the present state of affairs coming on gradually during the last two years; that he got along pretty well generally, but upon drinking too much, or eating imprudently he had much difficulty and pain in passing his urine. Succeeded in the course of a few days in passing a small probe through the stricture, finding the canal very tortuous, with a general curve to the right.

September 7th. Having tried faithfully, but in vain, to effect dilatation with the instruments at my command, I procured one of Gouley's "tunnelled sounds," No. 4, which I succeeded in passing, the preliminary introduction of the guide having been accomplished with much difficulty. Immediately afterwards introduced a No. 7 steel sound. The parts were so callous that the whole operation was attended with very little pain or hemorrhage. After this the dilation was very slow and tedious, the structures being so dense and resisting, that little or nothing could be gained upon the stricture without using much force.

October 27th. After a prolonged trial, succeeded in passing a No. 12 steel sound, the largest in the establishment.

March 2d. Discharged to duty, No. 12 passing with ease. The fistula had closed up entirely, and the tumor was about one-half as large as when seen by me. Patient was in vigorous health, and stated that his stream of urine was larger than it ever had been. He was furnished with a large, flexible English bougie, which he promised to introduce every Sunday.

CHRONIC SYNOVITIS. WEIGHT EXTENSION TREATMENT.

Thomas Calaghan; seaman; aged 30 years; native of Ireland; shipped at New Orleans, March 5th, 1874; admitted to the Nor-

folk Naval Hospital, from the U. S. S. "Worcester," December 7th, 1874.

The history of the case was as follows: During the month of July, 1874, patient struck his left knee violently against one of the guns which he was assisting to work, giving rise to severe pain, followed by subacute synovitis, without effusion; this subsided into an obstinate state of chronic inflammation, for which the patient was finally sent north for treatment. On admission the patient, an unusually robust, muscular man, complained almost solely of constant dull pain in the left knee, which became severe upon exercise of the joint or allowing the leg to hang down. The integument surrounding the knee was slightly reddened and œdematous. Pressure upon the synovial membrane gave rise to much pain at the points where it was accessible to this method of examination. There was no stiffness of the joint, but upon motion and manipulation a slight sensation of dry friction or crackling was communicated to the hand. The patient complained of occasional severe pain in the ankle, but as this was generally absent, and there were no other symptoms referrable to that joint, it was ascribed to the fact that the knee and ankle are supplied by filaments from the same nerve, i. e., the great sciatic. There were no evidences of involvement of any of the structures of the knee-joint except the synovial membrane. My diagnosis was chronic inflammation of this membrane with diminution of synovia. Ordered absolute rest of the joint, tinct. iodine externally, and iodide of potassium internally. This having failed after a fair trial, recourse was had to all the principal modes of treatment which seemed indicated, or are recommended in such cases: an immovable apparatus was applied for several weeks without benefit; "flying" blisters proved useless after a long trial; the button cautery gave rise to so much pain in the interior of the knee-joint, from spasm of the exceedingly powerful muscles of the thigh, that its use was abandoned promptly. On the 1st of March, 1875, after nearly three months of treatment, the patient was, as near as may be, in the same condition as when he entered the hospital. Upon that day all other treatment was discontinued, and the weight-extension apparatus applied. This caused severe pain in the knee for a few hours, but after the crural muscles had become thoroughly exhausted this began to subside. Next day the patient was more comfortable than he had been since the receipt of the

injury, and in a week the pain had all disappeared. The apparatus was kept applied for nearly three weeks, in order to give the joint a long rest, at the end of which time it was removed, and the patient given a pair of crutches with directions to keep in the open air as much as possible. The improvement continued, and now—April 13th, 1875—the patient has thrown away his crutches and walks as well as he ever did. He has a tired, heavy sensation in the knee at night, after having used it too much during the day. Is ordered to exercise the joint very moderately, and threatened with re-application of the weight-extension should improvement cease.

INFLAMED ULCER—OAKUM TREATMENT.

Edward Meade; apothecary U. S. N.; aged about 73 years. Patient extremely thin, "nothing but skin and bones," but possessing a good appetite and considerable vitality; struck his right shin against an open drawer in the Dispensary of the Norfolk Naval Hospital, about November 1st, 1874, producing a slight excoriation just above the ankle; this increased in size, and in a few months became an oval-shaped ulcer, one inch in its vertical and greatest diameter, devoid of granulations, slightly depressed, reddish-gray and angry-looking, and bathed with a profuse ichorous, sometimes sanguinolent, discharge. The ulcer was somewhat indurated at its edges, and the surrounding integuments considerably reddened and œdematous. It gave rise to a persistent stinging, aching pain, which was excessive when the limb was allowed to hang down, necessitating its constant elevation whether the sitting or recumbent posture was assumed. The patient tried every method of treatment he could think or hear of—poultices, pressure, lotions, and "salves" of every conceivable variety. At the end of 4½ months from the receipt of the injury the ulcer was unchanged in character, much increased in size, and steadily enlarging; it had a diameter of 6 inches in front and 1½ inches behind, involved both malleoli and the upper half of the instep, and completely surrounded the leg. Its growth seemed to be due to the acrid, irritating secretion, every part over which it passed, except the tough heel and sole, assuming the appearance of the original ulcer. The patient became much enfeebled and thoroughly discouraged.

On the 12th of March, 1875, I applied a thick layer of oakum to the whole surface of the ulcer, securing it slightly with a broad muslin roller. This gave rise to much pain, which in five or six hours subsided into a severe stinging. The oakum was allowed to remain on for 24 hours, at the end of which time the stinging had disappeared and the ulcer looked decidedly healthier. The dressing was re-applied and changed daily. At the end of a week the ulcer was covered with a thin, reddish cicatrix; and the discharge had ceased.

April 15th, 1875. Patient has continued the use of the oakum, and now the cure appears complete, the cicatrix beginning to assume the characters of integument. "Post hoc, aut propter hoc?" If the latter, the result is probably largely due to the absorption of the acrid discharge by the oakum, whereby it was removed from contact with the surface of the ulcer as fast as it was poured out. Patient refused all constitutional treatment from the first to the last.

MERCURIAL PTYALISM—BELLADONNA TREATMENT.

Michael Burke; landsman; aged 21 years; shipped at Boston, October 24th, 1871; admitted to Norfolk Naval Hospital, from the U. S. S. "Wachusett," December 7th, 1874. According to Hospital Ticket: "During the passage from New Orleans to Key West (November, 1874), while in a heavy gale, a pump containing mercury became broken, allowing a large quantity of mercury to escape on the berth-deck, where it came in contact and mingled with the food and mess-gear of the men. Soon after the arrival of the ship at Key West, a large number of the men were attacked with ptyalism, Michael Burke being one of the number. His case does not yield to treatment so readily as the others, and he is transferred to the hospital on account of ship going out of commission at an early date."

The Surgeon of the "Wachusett" informed me that all the cases had been treated with belladonna with the "happiest effects." On admission, patient was in fair general health; gums swollen and dark-colored; considerable hypersecretion of saliva, accompanied by the characteristically sickening odor of mercurial ptyalism. Ordered quarter-grain doses of extract of belladonna thrice daily, and a mouth wash of potassium chlorate. After the

third dose of the belladonna the secretion of saliva diminished at least one-half, and after the sixth dose it was normal in amount, when the patient was discharged the service at his own request, his term of enlistment having expired.

The belladonna not only diminished the secretion of saliva by paralyzing the peripheral filaments of the chorda tympani, but seemed to exert a directly curative effect upon the disease, the other symptoms disappearing, *pari passu*, with the hypersecretion of saliva.

FRACTURE OF THE CLAVICLE.

William McCarthy; landsman; aged 26 years; native of Utica, N. Y.; shipped at Erie, Pa., November 25th, 1873; admitted to Norfolk Naval Hospital, from the U. S. S. "Colorado," July 6th, 1874.

Patient, a tall, slender, strumous-looking subject, with a very small head and feeble intellect, had a transverse fracture of the left clavicle within the limits of the coraco-clavicular ligament. The injury was due to *direct* violence, patient having fallen on the dry-dock at this place, striking his clavicle against a narrow ledge of stone. The inner end of the outer fragment was so much depressed that the fractured surfaces were entirely removed from contact with each other. This depression was caused by the fracturing force. The shoulder of the injured side was displaced slightly forward and inward, and the outer end of the inner fragment, rode the inner end of the outer fragment, a very little. There was, of course, no crepitus, and the superjacent soft parts were much contused and swollen.

Placing the patient on his back upon the floor, and pressing the shoulder upward and backward, at the same time continuously manipulating the fragments, I succeeded in locking firmly together the two fractured surfaces. The contact was only partial, however, the inner end of the outer fragment remaining depressed to the extent of about one-half its diameter. Might have secured a better position but for fear of injuring the important subjacent structures. Fixed the parts immovably in this position with a gypsum apparatus, the arm hanging naturally by the side, the forearm laid across the chest with the fingers pointing to the acromion process of the sound shoulder. The chest,

arm and forearm, were firmly enclosed from the elbow to the axilla, a few turns of the roller passing under the elbow of the injured side and over the sound shoulder, supporting the elbow firmly. When the gypsum had hardened, the whole left upper extremity was perfectly fixed and immovable, while the injured clavicle was uncovered and free from pressure, so that risk of displacement was reduced to a minimum, and observation and medication of the fractured bone and contused soft parts uninterfered with. A few days later the gypsum cuirass was sawn open in the median line behind, and its whole inner surface well padded to prevent chafing, the weather being very warm, after which the sawn place was firmly locked up. During the ensuing five weeks the patient wore the apparatus constantly, with little or no discomfort, making himself generally useful all the while, and after its removal suffered no inconvenience save a slight stiffness of the elbow. This passed off in a short time, and the patient was, to all intents and purposes, in as good condition as before the injury, barring a slightly increased susceptibility to fracture of the clavicle from the slight alteration in the axis of that bone. The amount of callus was so small as to be almost inappreciable, showing how absolutely immovable the fragments had been held.

Patient was discharged from the service on account of the low order of his intellect, August 24th, 1874, at which time there remained necessarily some deformity, which time will in a great measure remove. The motion and strength of the injured limb were normal, and the two acromion processes were at the same distance from the median line and in the same horizontal plane.

FRACTURE OF THE CLAVICLE.

William Clark; master-at-arms; aged 30 years; native of Ireland; shipped at Boston, December 18th, 1873; admitted to Norfolk Naval Hospital, from the U. S. S. "Brooklyn," November 18th, 1874.

On admission, patient, a large muscular man, had an oblique fracture of the left clavicle between the conoid and trapezoid ligaments. He stated that the injury was received while on liberty and intoxicated; thought it was due to a fall down a flight of stairs, but was unable to say whether the fracturing force was

applied directly or indirectly. Am inclined to the latter opinion from the obliquity of the fracture, and the entire absence, at or near the seat of injury, of any contusion. There was little or no deformity, crepitus was very distinct and easily elicited, and the fragments quite freely movable. Applied Fox's apparatus, which the patient wore until discharge to duty, December 19th, 1874, when a stout sling was substituted. The apparatus required daily adjustment, on account of its inherent defects and the restlessness of the patient. The result was satisfactory, the shoulder being in perfect position and the union firm. Quite a large amount of callus was forced out.

SCROFULOUS GLANDS BENEATH THE STERNO-CLEIDO-MASTOID MUSCLE.

BY B. E. HADRA, M.D.

There should not be any doubt in the minds of the profession, that scrofulous glands of the neck, whenever of larger size, should be removed as soon as possible, provided they have failed to yield to proper resolvent means; and we must confess that such measures have accomplished but little in our hands. To delay, until they form abscesses with fistulous tracks, no intelligent surgeon would recommend, under our existing knowledge of tuberculosis and the diseases which lead to it. In fact, to let alone those constant sources of purulent infection is quite the same as leaving untouched, foreign bodies, such as bullets, sequestrums, etc. We are much indebted to Prof. Hueter, of Greifswald, for his perspicuous essay on this subject,* believing that no physician who has read it would hesitate at any time to grasp his knife and remove such morbid growths immediately.

But to speak more directly of our present subject, we give the history of four cases which we have seen within the last few months—cases, where the seat of the main malefactor was behind and under the musculæ sterno-cleido-mastoideus.

CASE I.

Mr. P., aged 21 years, consulted me on account of a tumor,

* Volkmann's Collection of Clinical Lectures, No. 49.

situated in the region of the right sterno-cleido-mastoid muscle. It was of the size of an orange, with slightly marked borders, looking like a mere protuberance of the muscle. Any mobility was undeterminable; on bending the neck in any direction the tumor remained fixed, while the sterno-cleido-mastoid muscle was hard and tense. The skin was not discolored. No swollen lymphatic in the vicinity. The patient was of scrofulous appearance, not very strong, and felt somewhat uneasy; a little feverish in the evening. His parents were both alive and healthy; no hereditary disease in the family. A proof-needle introduced into the tumor for an inch revealed no pus, and gave the sensation of rather hard consistency. Its growth had been rapid for the preceding eight weeks; pains not very bad. We did not make a positive diagnosis, but deemed it most likely a lymphatic gland. We operated the next day, making a longitudinal cut through the sterno-cleido-mastoid muscle, using the handle of the knife in separating the deeper fibres of the muscle. The tumor consisted of a whitish sac filled with pus and cheesy matter. It was of the size of a large hen's egg, without much adhesions, and easily detached by the finger nail. Some four or five smaller glands were afterwards found deep in the wound and removed. The parts were united by suture, and healed by first intention, the patient resuming his usual avocation after five days. Since that time remarkable increase of flesh.

Case II.

Mr. P., aged 20 years; saddler by occupation; appearance healthy. During January preceding he noticed, for the first time, a swelling on the neck, occupying a space over and around the upper part of the left sterno-cleido-mastoid muscle. The tumor was not very painful, but made him feel somewhat annoyed, feeble. He was treated by different resolvent applications, including electricity, but without effect. Another physician who was consulted, made use of the exploring needle, and even of the bistoury for puncturing, without finding pus. Some time later, a Galveston surgeon of some reputation being accidentally in Austin, was consulted, and proceeded to operate for a variety of tumor, making a long cut along the inner border of the sterno-cleido-mastoid muscle; but instead of the consistent tumor expected, he frankly acknowledged himself disappointed on finding

a rush of pus. He then desisted and united the wound, except enough for drainage, and left the case to get well as an ordinary abscess, under the care of one of our prominent physicians. But after seven weeks had passed without healing—on the contrary, as there was a formidable suppuration—the attending physician thought it necessary to seek farther surgical attention. We were called through his courtesy, and with equal kindness he left to us the question whether or not an operation was required. On examination we determined to operate. The case seemed only to require a clearing of all the diseased tissues in the ugly-looking wound. We used the knife and finger nail to do it, and removed besides a superficial layer of the sterno cleido-mastoid muscle, which was perfectly necrotic. But still, close observation convinced us that the tumor could not yet be removed. We consequently detected fluctuation beneath the muscles; a proof-needle verified this assumption. Now we did not hesitate to incise the muscle longitudinally. Just under it there was a whitish tumor, which was removed by the handle of the knife and finger nail with some difficulty, as it adhered to the muscle and to the cranium under the processus mastoideus—all with very little loss of blood. The wound was not stitched, as it was, from the first operation, too large and unhealthy. However it healed as fast as we could expect. Mr. P was able to resume work after 14 days, leaving only a superficial wound to be closed, which was perfected in two more weeks. The tumor was of the size of a large hen's egg, consisting of a sac about one-fourth of an inch thick, and containing detritus and caseous matter—no tubercles. The sac itself contained an unusual amount of elastic fibres. We have since learned that Mr. P's. mother died of consumption.

CASE III.

Mr. A., 20 years old, of a scrofulous appearance, has been subject for a long time to lighter complaints, as rheumatism, chronic catarrh of the pharynx, gouty swellings of the great toe, etc. He had suffered from a syphilitic ulcer some years before—no secondary symptoms observed by myself. He went, after a long ineffectual treatment by different physicians, to Hot Springs, Ark., and returned in a better condition, but in no way cured. He sought my advice in December, 1874, suffering from swelling of the great toe, weakness and numbness of the right arm, and

mostly from pains, arising from the right ear and surrounding parts and entending over the occiput. Some swelled lymphatic glands on the neck, and a particular kind of inflammation of the larynx which I can only pronounce pemphygus pharyngis, as it showed large blisters containing pus. By May, 1875, he was entirely relieved of his complaints, except those sharp pains on the side of the neck, increased with every new attack of his pharyngeal trouble. One lymphatic gland was swollen to the size of a walnut at the angle of the lower jaw. It was removed, and contained no tubercles, but some small suppurating points, the whole gland being in a state of soft hypertrophy. Soon afterwards all the other glands on the same side of the neck were enlarged and painful. Fully appreciating the mentioned essay of Prof. Hueter, and being aware that the patient's mother had died from consumption, we proposed to remove all of the swollen glands at once. As the centre of the sterno-cleido-mastoid muscle appeared slightly abnormal when viewing it from the front, we suspected that we would find the main malefactor beneath that muscle. Patient agreed to an operation on the first day of July. We had to make two incisions; one along the lower jaw, the other along the posterior border of the sterno-cleido-mastoid muscle, in order to reach all the morbid glands. We then intended to elevate the muscle. The operation was a very tedious one, lasting two hours, in consequence of difficult narcosis. About twelve morbid glands of smaller size had to be taken out. To my satisfaction, the suspected larger tumor was found directly under the muscle, appearing of the same size and color as in Case II. It was more adherent to the surrounding tissues, especially to the sterno-cleido-mastoid muscle and the cranium. On the whole it was much more difficult to remove, since the mode of incision did not admit an easy extraction of the tumor, as in Cases I and II. A larger vein severed was easily controlled. Both wounds were united by stitches, except the lower part of one in order to effect drainage. The large growth was a lymphatic gland in a state of suppuration, consisting of a thick sac, filled with pus and cheese-like matter; no tubercles. The sutured parts healed by first intention, and although free suppuration ensued for ten days from the part left open, in three weeks all was done. The pains on this side are entirely removed, and in the same way his pharyngeal trouble;

but I am sorry to state that the lymphatics on the other side begin to swell.

CASE IV.

A lady, about 30 years of age, consulted my former partner for relief of a tumor on the neck. For the removal of similar tumors on the same side she had undergone two operations already—the last one in New Orleans, from the hands of a prominent surgeon. There was left a very ugly scar, with fistulous openings and considerable discharge, all under the edge of the inferior maxilla, near its angle. We saw the patient in consultation, and could without difficulty detect below the thin and soft sterno-cleido-mastoid muscle a smooth, movable tumor, of the size of a large walnut. We advised her to have it removed, as we did not believe the old wound would heal otherwise. We believe that, as in Case III, the deeper-seated gland began to soften more rapidly after the removal of the glands in the vicinity, and that the surgeon was not able at the time to discover the deep glandular enlargement. A new operation was declined on the part of the patient.

All the cases reported show the particular feature, that the main tumor was situated below the sterno-cleido-mastoid muscle. We cannot find any definite explanation for the preference of that locality, unless it is because the glands there are naturally larger than the more superficial ones of the neck; and farther, the constant use of the muscle above may irritate them more. In reference to the diagnosis, we cannot make out very much new; every text-book gives us a more or less adequate account, defining the difference between the malignant forms of tumor of the neck and those comparatively benign. To detect the tumor in the specialized seat beneath the muscle we will, by particular and careful inspection, if the finger fail to give a full answer, probably be enabled to accomplish our object. The contour of the muscle will be somewhat abnormal, although it may not correspond fully with the size of the morbid gland, as the space is ample for its growth downwards and backwards. The exploring needle, in two of my cases, failed to reveal pus, yet it was present; the thick walls of the tumors, as well as the tenseness of the muscle, might have prevented its escape. Often those deep-seated suppurating glands may open and pour their

contents into the cellular tissue under the skin and form abscesses, which may be treated by simple incision—of course without giving satisfaction, as in Case II.

From the history of our cases already given, we are taught—

1. That whenever we have decided to operate, diligent search should be made for every single lymphatic gland, as those remaining, soften more rapidly after we have set up a new irritation in their vicinity by the operation.

2. That we should never forget to examine the space below the sterno-cleido-mastoid muscle, as we will there probably find the main malefactor.

3. The best method of reaching this space, and extracting the submuscular tumor, is by a longitudinal incision through the middle of the muscle.

It is not necessary to repeat the advice of withholding the use of the knife unless it is absolutely indispensable. When done so, we consider the operation a perfectly safe one.

A CASE OF WOUNDED INTESTINES.

REPORTED BY J. L. IRION, M.D., MONTGOMERY, TEXAS.

July 15th, 1875, was called to see Tom Jones, m. c. Found him cut in six or seven places by a sharp cutting instrument. The most serious wound was in left side of lower abdomen, extending in a horizontal direction about three inches. Small intestines wounded in two places; one cut half an inch in extent with ragged and bruised edges, the other a punctured wound about one-fourth inch in extent. Intestines protruded from the wound.

The wounded man walked half a mile after he was cut, supporting in his hands the protruding bowels, each step causing the bowels to escape from the abdomen. Before reaching his house he vomited several times, each effort to vomit causing the intestines to rush out.

I proceeded to close up the wounds, using continued sutures; had great difficulty in replacing intestines. Gave full dose of morphine, and kept patient under effect of chloroform while cleansing and stitching intestines. Closed wound in abdomen, using interrupted sutures; placed adhesive strips to support stitches, then bandage over the whole abdomen.

Prescribed full doses of opium, with limited quantity of cold water (having no ice), and directed urine to be drawn off.

July 16th. Found patient comfortable; no fever, thirst, or tympanitis. Treatment of 15th continued. Directed cold water to be used on abdomen upon appearance of any heat, or if soreness should be complained of.

July 17th. Patient comfortable and in good spirits. Nurse reports that on evening of 15th he had fever, and complained of darting pains in bowels. Unpleasant symptoms readily yielded to full dose of tinc. opii. and cold applications.

July 18th. Jones in high spirits. Dressed wound in abdomen; no soreness except immediately on the wound; no inflammation; no tympanitis; no fever since 16th. Patient hungry; turns himself with ease and comfort; says he is able to get up and walk. Wounds other than on abdomen until to-day have received no attention, except bathing them in solution chloride sodium. No opium for 24 hours. Pulse ranged from 80 to 90—never higher.

July 19th. Jones still improving; appetite vigorous. Local treatment same as heretofore. Has taken no medicine since 16th. Continue to use catheter.

July 21st. Saw Jones to-day; he urgently requested more food; has been kept on low diet, gruel, etc. Wounds again dressed; show slight suppuration; appear healed, but am afraid to remove sutures.

July 22d. Jones sent messenger to me to-day—wants to eat.

July 23d. Jones' appetite still clamorous.

July 24th. Visited Jones to-day; no irritation about wounds; conclude to wait a few days to remove sutures; bowels have not been evacuated since 15th.

July 26th. Visited Jones to-day; removed sutures from abdominal wound; adhesion firm. Bowels moved freely since 24th without aid of medicine, creating no disturbance. Discharged patient twelve days after he was wounded, and no unfavorable symptoms occurring.

August 26th. Saw Jones to-day; he is at his work; occupation, farm laborer.

Tom Jones is about 30 years old, black; weight 160; 5 feet 10 inches high; vigorous and full habit.

PROSTITUTION:

A Medico-Legal Dissertation.

BY DEMOCRITUS CONTEMPORALIS.*

"Perpetuo risu pulmonem agitare solebat."

The origin of prostitution is involved in the obscurity which veils the earliest ages of the world; but as the passions and frailties of human nature are susceptible of little change in the aggregate, and as we find it existing in the earliest authentic history, it is probably coëval with society. The biblical account of Judah and Tamar shows that it then prevailed among the Israelites, and that it brought no disgrace upon the male participant, whatever might be the consequence of discovery in a Hebrew woman. By the law of Moses no Israelitish woman was tolerated in prostituting herself, but promiscuous intercourse with the heathenish women in their midst was not forbidden to the men, provided it did not involve the infraction of the seventh commandment of the decalogue. It is quite evident that this intercourse was by no means uncommon, and at least one form of venereal disease resulting from it is made the subject of special enactments by Moses.

There is no reason for supposing that the morals of surrounding nations were purer, and in the earliest profane history we find evidence that prostitution existed. By the code of Solon public brothels were established, and supplied with female slaves bought with the public money, called *dicteriades*. They were placed under restrictions as regards dress and places of resort, but these were subsequently relaxed under the Pisistratidæ. Still Athens remained less immoral than either Corinth or Sparta, where no laws on this subject existed.

At Rome, on the authority of Tacitus, prostitutes were required, from time immemorial, to be registered at the office of the ædile, and the brand of infamy thus incurred became per-

* This paper is from the pen of an accomplished scholar and physician. The intelligent reader will observe that its references to authorities do not reach to the present date. The explanation of this is found in the fact that the paper was written some years since. It is, however, believed to possess sufficient merit to entitle it to publication, even so long after its production. The author's name is withheld for reasons pertaining to himself.—Ed.

petual. It was the duty of the ædile to arrest and banish, or otherwise punish, all prostitutes not inscribed, but this probably was never strictly carried out.

At Athens there was no disgrace in visiting the public brothels or in keeping a mistress. This last, in fact, was the social standing of the most celebrated women of that city, whose names have come down to our times, for no virtuous women were allowed to be present at the public games and theatres, and public women alone were qualified by education to be the intellectual companions of men distinguished in arms, letters or philosophy. At Rome, however, in its better days, the term *adulter* was a reproach, and the frequenter of brothels was stigmatized as *mœchus* or *scortator*. The stories of Lucretia and Virginia, and the fidelity of the Vestal virgins, show the estimation in which female chastity was held, and it is probable that the morals of the early Romans were comparatively pure, though the corruptions of later ages are familiar to every student of history.

The case of the woman taken in adultery and brought before our Saviour, and that of Mary Magdalene, render it clear that he did not wish to enforce the bloody penalty of Moses for adultery, nor shut the door of repentance on the fallen, as was done by the Roman law. It is becoming for Christians at the present day, in the consideration of the great Social Evil, to bear these lessons in mind, the wisdom of which has been repeatedly confirmed. There is evidence indeed that some of the early Fathers of the Church looked upon prostitution with some allowance. St. Augustine said, "Suppress prostitution, and capricious lusts will overthrow society." St. Jerome recognized it, and admitted that a prostitute might be saved on repentance, as Mary Magdalene was. In the sixteenth century the Council of Milan prescribed rules for prostitutes, recognizing them as a class.

The Emperor Theodosius laid severe penalties on brothel-keepers, and these were increased by Justinian, who endeavored to suppress procurers, but was more lenient towards prostitutes.

In France, at a later age, Louis VIII made a fruitless effort to suppress prostitution. Louis IX, in 1254, proclaimed severe edicts against prostitutes, which resulted in transferring the impurity from the brothel to the family circle. In two years this plan was abandoned, and prostitution was tolerated under restrictions touching dress, residence, haunts, etc. An ordinance of Charles IX, in 1560, aimed at the suppression of brothels, and

in consequence there was a great increase of secret debauchery. Although this ordinance was not formally repealed, Parent-Duchatelet asserts that brothels were licensed by the police of Paris between 1724 and 1788.

In 1791 the legislation of the monarchy was swept away by the revolution, and no enactments were made on this subject under the republic. As might be supposed, the morality of this epoch was at a frightfully low ebb. Napoleon was content to suppress some of the most flagrant public abuses of prostitution, but without any special law. There has been no direct legislalation on prostitution in France since the revolution, but the Government has assumed control without legal warrant, and the police regulations have acquired force by custom.

Public women are now inscribed in a department of the Prefecture of Police, called *Bureau des Mœurs*. A similar system prevailed before the revolution, and also during the republic and first empire, but the records have disappeared. The present system was inaugurated in 1816, and amended in 1828, efforts at legislation having failed through objections on moral grounds and a plea that the general laws touching nuisances and disorders would reach the end proposed.

The inscription is made (1) at the request of the women themselves; (2) on the requisition of the mistress of a house; or (3) on the report of the inspector of prostitutes. Previous to this the woman is asked the following questions:

(1) Her name, age, birth place, trade and residence.

(2) Whether she is a widow, wife or spinster.

(3) Whether her father and mother are living, and what their calling was or is.

(4) Whether she lives with them, and if not, when and how she left them.

(5) Whether she has had children, and where they are.

(6) How long she has been at Paris.

(7) Whether any one has a right to claim her.

(8) Whether she has ever been arrested, and if yes, how often and for what offenses.

(9) Whether she has ever been a prostitute before, and for what period of time.

(10) Whether she has, or has had, venereal disease.

(11) Whether she has received any education.

(12) What her motive is in inscribing herself.

If she has her baptismal certificate, she is at once enrolled as a public woman; if not, as is usual, communication is made with the mayor of her native city or *commune*, and an opportunity afforded for the interference of her family. In this way many are rescued from infamy. Otherwise she signs a document engaging to submit to the regulations, especially as regards periodical examinations and other sanitary measurers.

From the records of several years, Parent-Duchatelet classifies as follows:

Girls inscribed at their own request	.....	7388.
" " by mistresses of houses	.....	4436.
" " by inspectors	.....	720.
Total	.....	12,544.

Registered prostitutes are under police and medical supervision. Those in brothels are inspected weekly by a visiting physician; those in private lodgings are required to visit the dispensary fortnightly, and these rules are strictly enforced. They are besides under particular restrictions in their conduct, especially in public.

M. Parent-Duchatelet, who has given much attention to the subject of prostitution, and whose valuable work on Prostitution in Paris was published in 1857, wrote in 1836 that a great improvement had taken place in the deportment of public women of that city. This was especially marked in the preceding ten years, and was attributed by him to the pains taken by the administration in every plan of repression and reform. As no legislation existed in France on this subject, he proposed the following scheme:

"*Article* 1. The duty of repressing prostitution, whether with provocation on the public highway or otherwise, is entrusted at Paris to the Prefect of Police, and in all the other *communes* of France to the mayors respectively.

"*Art.* 2. A discretionary authority over all persons engaged in public prostitution is vested in these functionaries, within the scope of their powers.

"*Art.* 3. Shall constitute evidence of public prostitution, either 1st, direct provocation thereto on the public highway; 2d, public notoriety; or, 3d, legal proof adduced after accusation and trial.

"*Art.* 4. The Prefect of Police at Paris, and the mayors in the

other *communes*, shall make any and all regulations which they may deem suitable for the repression of prostitution, and such regulations shall bear upon all those who encourage prostitution as a trade—lodgers, inn-keepers, tavern-keepers, landlords and tenants.

"*Art.* 5. The Dispensary at Paris for the superintendence of women of the town is placed on the same footing as the public health establishments. Other similar dispensaries may be established wherever they are needed.

"*Art.* 6. A full report of the proceedings of these dispensaries shall be forwarded annually to the Minister of the Interior."

Until the close of the last century, all supervision in France was aimed at repression; but since then it has reference also to sanitary amelioration. The result has been a reduction of disease among prostitutes, so that in the course of a few years the average number diseased fell from one-ninth to one-sixteenth. Besides, it can be affirmed of the capital and other large cities, that syphilis has diminished in severity as well as frequency under the present system.

The French plan of police supervision has undoubtedly done much to relieve prostitution of some of its most repulsive features, by compelling abandoned women to observe a decent deportment in public, and by reducing the danger of venereal infection among those inscribed to a minimum. Still it must be admitted that it has been proved far from a complete success in eradicating these diseases. The uninscribed women, who resort to prostitution under the guise of various occupations, to enable themselves to gratify a desire for amusement, dress, drink, etc., are estimated to exceed 20,000, or four times the number of inscribed women. These are the ones chiefly through whom disease is propagated.

M. Lecour, in *Archives Générales* for December, 1867, asserts that prostitution is now undergoing a transformation at Paris There is a decrease of registered prostitutes and tolerated houses, and a correspoding increase of uninspected, or clandestine prostitutes. Many of them are diseased, but disease among those inscribed is diminishing. No less than 2000 of these suspected women are arrested annually, but the interference of the police is rendered difficult by the eccentricities in manners and dress assumed by women of a different station. It might reasonably be supposed that ladies could find better models for imitation

than public women, but the sway of fashion is arbitrary, and quite independent of reason and propriety.

M. Diday, of Lyons, commenting on the present aspect of the *demi-monde*, recommends lenity towards suspected women, and instead of arrest, a requirement to furnish monthly certificates of health from any regular practitioner. Failing in this, they should be liable to visit and inspection, and in case of continued neglect, to inscription.

At Hamburgh experience has proved that punitive measures are unsuccessful in suppressing prostitution. A system of toleration is there practiced, similar to that of Paris. Brothel-keepers are made responsible for thefts and disorders committed in their houses. The danger of infection and robbery is far less among the inscribed women than those not registered, who follow their calling outside the city walls and in obscure places. Private or domestic prostitution is said to be less common at Hamburgh than in other cities of like extent. Kept women are comparatively rare. Venereal diseases at the General Hospital are generally of a mild type, and secondary symptoms among the registered women uncommon.

In Prussia, until nearly the close of the last century, prostitution had been tolerated and placed under police regulations. At this time the king and some of the principal nobility were in favor of rigorous measures of suppression. It was found, however, that the closure of the brothels at Berlin was followed by a large increase of private prostitution and a greater prevalence of venereal diseases. In 1851 the irrepressible and increasing evils of illicit prostitution, which had defiled the domestic circle with moral and physical corruption, led to the restoration of the toleration system.

Dr. G. Richelot, who wrote on Prostitution in the British Isles in 1857, states that, on the closure of the brothels at Berlin, the number of clandestine prostitutes known to the police increased in one year from 700 to 1250, and in the four years preceding 1850, to 8000. Syphilis increased and invaded the best families; unnatural crimes became frequent, and bastardy common. On the reëstablishment of tolerated brothels these evils diminished, and illicit prostitution declined.

The anonymous translator and editor of the work above mentioned regards the continental system as a failure, in [illegible]

of the prevention of venereal diseases and immorality. The plan proposed by him is here briefly condensed:

(1) Disorderly houses to be suppressed, and disorderly persons to be arrested and punished.

(2) Thief prostitutes to be transported.

(3) Prostitutes *known to the police as such*, or whenever arrested, to be examined and detained until well, if found diseased.

(4) Brothel-keepers and occupants of rented rooms to be held responsible for robberies, disorders, etc.

The end proposed in (3) could best be gained by a system of registration, which would secure constant police supervision and regular medical inspection. Without frequent examinations, there could be no security against infection.

At Stockholm, of the population above the age of fifteen, it is estimated that one in sixty-one is affected with syphilis. Prostitution is prohibited by law, and there are no regular brothels; but the jurist Augelot asserts that every house of entertainment is a brothel, and every female servant unchaste. In that city the ratio of illegitimate births to legitimate was 1 to 2.38, and in other Swedish towns 1 to 6.40, in the year 1839. Bayard Taylor, writing in 1857, represents Stockholm as the most licentious city in Europe.

In England bastardy is more common in the rural districts than in the cities and towns, in the ratio of two to one. In Cumberland County, of 1000 births 108 are illegitimate; in Norfolk, 105; these have a rural population. Middlesex contains the city of London, and here the ratio of illegitimate births is 40 in 1000; in Lincoln it is 64. It is obvious that prostitution absorbs mostly the licentious propensities of men in the cities, and leaves the women less exposed to seduction. The same result is observed where an inferior race is incorporated as an integral part of the population.

Léon Faucher remarks that, in the Metropolitan Police District of London, delinquents under 20 years old are four times more numerous in proportion to population than at Paris. Theft is the most common offense, and prostitution is a prominent cause, for public women incite their paramours to this in order to satisfy their demands. In the London brothels men are very liable to violence from bullies, extortion, and even robbery, for there is no fixed charge, as in the tolerated houses of Paris, and no constant police supervision. A writer in the *Lancet*, in 1853,

is quoted to the effect that libertinage and other vices assume a more gross and flagrant form in London than in any continental capital.

Richelot sums up as follows: "In regulated (registered) prostitution, the number of public girls necessarily diminishes; the weakness of youth is protected; the venereal affections, pressed on all sides, tend to disappear; crimes and misdemeanors, forced to seek a separate existence, lose their most powerful assistant and fertile source; the prostitute, less degraded, less detached from Society, preserves her feelings open to her kind, and never ceases to have before her the possibility of a return."

In the British army Dr. Sanger states (1857) that about one man in thirty-six is annually attacked by venereal disease, and in the navy one in fifty-one; while in the Belgian army the strict regulations respecting prostitution have reduced the ratio to one in one hundred and fifty. On the "Dreadnought" hospital-ship for merchant seamen, two-sevenths of all the cases treated in seven years were venereal. Of the out-patients treated at St. Bartholomew's, 2513 in a total of 5327 were venereal. Sanger estimates that London furnishes altogether 50,000 cases of venereal annually. A writer in the *Med. Chir. Review* reckons the number of cases resulting from prostitution in Great Britain at 1,500,000 annually.

British legislation for the regulation of the "Great Social Evil" dates only to 1864. An amended "Bill for the Better Prevention of Contagious Diseases at certain Naval and Military Stations" went into operation September 30th, 1866. The instinctive prejudices of the British people threw great difficulties in the way of any such scheme, and its extent is still quite limited. The religious and moral sense of many good people was shocked at any appearance of tolerating vice, or even of recognizing its unavoidable existence; but a little reflection would satisfy a rational mind that it is better to keep an incurable abuse within bounds than to ignore and practically not interfere with it. Another difficulty was the British jealousy about encroaching on "the liberty of the subject." It would seem that the *Compulsory* Vaccination Act of 1853, fortified by the Order of the Privy Council of 1859 providing for *systematic inspection*, might serve as a satisfactory precedent to sticklers on this point.

The scope of operation of this act comprises the following garrison and naval stations and military camps: Portsmouth, Ply-

mouth, Woolwich, Chatham, Sheerness, Aldershot, Colchester, Shornclifle, the Curragh, Cork and Queenstown. The expenses of its execution are defrayed by the Admiralty and War Office. The administration of the act is carried out by (1) *certified hospitals*, to which the Government makes an annual allowance according to the number of beds appropriated; (2) *medical inspectors*, to exercise a general oversight; (3) *visiting surgeons*, for examining prostitutes, etc.; (4) *magistrates* and *police*, for enforcing the execution of the act. The chief means for detecting and repressing venereal diseases is by periodical medical examinations. A woman charged with being a common prostitute is notified by a magistrate to appear either personally or by proxy. The investigation is private, and if the charge is substantiated, the magistrate is empowered to issue an order for her periodical examination. She is then notified of the time and place for meeting the visiting surgeon. If at any time found diseased, she is sent to hospital for treatment. Contumacy is visited with summary arrest and punishment. The harboring of a prostitute believed to be diseased, subjects the offender to a fine not exceeding £20, or imprisonment not exceeding six months. Any woman may be released from these conditions on good evidence of reform, or recognizance for good behavior for three months.

In the military and naval hospitals at the points named, the venereal patients are required to designate the source of infection to the inspector. The women accused are immediately visited and examined, and if found diseased, they are sent to hospital and kept there till cured. They are generally glad enough to obtain medical relief, and make no objection to the conditions.

As this act applies only to particular places, its working is imperfect. Men lately arrived from posts to which the act does not extend may infect women, and newly arrived women may infect men before they become known to the authorities. It is evident that it would be inoperative in the vicinity of cities not included in its scope.

This legislation has already borne fruits which enable us to judge pretty well of its merits. Berkely Hill, M.B., London, has lately been contributing papers to the *British Medical Journal* on this subject. He assigns the following reasons why the benefits of the act have not been greater at Chatham and Portsmouth:

(1) The hospital accommodation has been inadequate to the demand. (2) The examination of women has been confined to those against whom there has been abundant proof of infection. (3) For want of room it is necessary to discharge women before they are thoroughly cured. He asserts that venereal diseases are already assuming a milder type, and that the proportion of women diseased has greatly decreased. The public deportment of the women at Plymouth has improved. They no longer solicit persons in the streets, and public decency is not outraged, as at London. Another great benefit is the reclamation of girls, no less than 38 per cent. of those sent to hospital having been restored to their friends after discharge.

The operations of this act are shortly to be extended to other garrison districts of the United Kingdom. The clergy of Winchester are strongly in favor of this plan, and the townspeople sent a petition, during its passage in 1866, to be included in its provisions, but were too late.

At Plymouth, for the first six months of 1864, the ratio *per* 1000 among the troops suffering from venereal diseases was 129.7; for the first six months of 1867, 49.3. At Aldershot no severe cases are found among the women; and were it not for the arrival of fresh troops from posts unprotected by the act or inadequately supplied with hospital accommodations, and the introduction of diseased women from other points, these maladies might be stamped out. This, in fact, was nearly accomplished at Mayence a few years ago, among the troops there stationed.

Public attention has been awakened to the necessity of extending the provisions of the *Contagious Diseases Act* to the civil population of the kingdom, and an association of prominent men has been formed for the promotion of this object. Legislation is not effected with the same facility and haste as in this country, but there are signs that Parliament will not long delay the completion of their work.

In New York Dr. Sanger estimates the average duration of life among prostitutes at four years. At Paris it considerably exceeds this. There 6⅔ per cent. survive 14 years; at New York 2¾. At Paris 17½ per cent. survive 10 years; at New York. 3¾.

At the Penitentiary Hospital on Blackwell's Island, in 1854, the ratio of venereal cases was 37 4-10ths per cent. of the whole number treated; in 1856, 73 1-10th per cent.—an increase of 35 7-10ths per cent in two years. At the Penitentiary Hospital,

Alms House, Work-house, and Penitentiary, 59½ per cent. of the patients admitted had suffered or were suffering from venereal, and 45 per cent. were so affected at the time of investigation (1857). At Bellevue Hospital, in 1857, venereal cases were excluded, but one-tenth of those admitted were reckoned to have resulted remotely from venereal affections. In the Nursery Hospital on Randall's Island, one-half of the cases treated are supposed to have the syphilitic taint. At all the hospitals in and about New York, it is estimated that 14,770 cases of venereal were treated in 1857; and it is supposed that twice as many more occurred in private practice, making over 44,000 in all. Of 2000 prostitutes questioned in 1857, two-fifths confessed the syphilitic taint.

The following is an estimate of the pecuniary cost per annum of prostitution in New York:

INDIVIDUAL EXPENSES.

Paid to prostitutes	$3,120,000;
Spent for wine and liquor by visitors	2,080,000;
Paid by visitors to houses of assignation	655,200;
For wine and liquor at houses of assignation,	260,000;
Spent in dancing saloons, liquor and lager beer shops, frequented by prostitutes and their friends	235,560;

MEDICAL EXPENSES.

At the hospitals in the city and environs	77,027;
Private medical assistance	308,108;
Vagrancy and Pauper Expenses	100,180;
Police and Judiciary Expenses	200,000;
	$7,036,075.

The whole amounts to nearly as much as the annual municipal expenditure of the city.

Dr. Sanger, of New York, who has written the best work on prostitution in the English language, is fully convinced that some plan is needed to limit the wide-spread growth of this evil, with its accompanying crimes, diseases, and waste of wealth, and equally so that it is useless to attempt to extirpate it. He

proposes to place prostitution and prostitutes under the supervision of a medical bureau in the police department. For this purpose there would be needed—

(1) A suitable hospital for the treatment of venereal diseases.

(2) A legally authorized medical visitation of all known houses of prostitution, with full power to order the removal of any woman found infected to the designated hospital.

(3) The power to detain infected persons under treatment until they are cured, a term of time which none but medical men can decide.

It is doubtless the duty of civil government to protect the morals and health of its subjects, as well as their lives and property, though in regard to the first two it may be difficult to define the just limits of protection, so as not to interfere unduly with the last. Personal liberty, for which all of the Anglo-Saxon race are so jealous, is indeed to be taken into consideration, but a wise government never allows it to trespass upon any of the other objects of its protection, and curtails it on every side. Gambling and intemperance have been made the subjects of various legislative acts in different States of the Union. Sensible people are mostly agreed that they come properly within the scope of governmental interference, but almost equally so that it is utterly futile to attempt their suppression. It is very uncertain that the "Maine Liquor Law" has diminished intemperance in the States where it has been tried, and penal enactments against gambling everywhere prove a failure. No better plan has yet been devised than the licensing of drinking houses, and requiring them to contribute largely to the support of government. Lottery gambling, so far as tolerated, stands on the same footing, and very many thoughtful men are satisfied that houses for prosecuting the ordinary games of chance were better licensed and made public than to be kept secret, as they now are. The police and all others interested might then know who indulged in the vice, and many a one would be deterred by the publicity of a practice which is disapproved by the great majority of respectable people.

As regards prostitution, our legislators, moralists, and medical advisers, all seem to have an instinctive aversion to the subject, preferring to shut their eyes on it rather than contemplate it. It is an Anglo-Saxon prejudice, as hard to overcome as to give a good reason for it. All who are occupied in the execution

of the laws know how prostitution in this country tends to swell the records of crime, by its secret alliance with offenders of every class.

The political economist sees wealth enough to pay the ordinary expenses of government wasted in debauchery, riotous living and their consequences—disease, pauperism, and crime, besides the damage done immediately and remotely to productive industry.

The enlightened moralist knows that all rigorous attempts at suppression have resulted in forcing the evil deep into the vitals of society, and involving in its hidden folds those who had else escaped its malignant touch; and he is reasonably unsatisfied with the present plan of non-intervention. At the same time he must admit that marriage cannot entirely subserve the desires of mankind for carnal indulgence, and that prostitution, within due bounds, is conservative of public propriety, social order and private purity. Among the evils for which it is a preventive may be mentioned adultery (on the part of women), rape, seduction, bastardy, abortion, infanticide, and certain nameless crimes against nature. A compromise with vice is humiliating and deplorable, but it is the alternative of its secret prevalence, a calamity second only to its open triumph. The condition of prostitution in this country is actually that of tacit compromise, a tolerated violation of the laws prohibiting promiscuous intercourse, which is surely no better, in a moral view, than the strict enforcement of a legal compromise.

But it is medical men above all others—the true conservators of the public health, and to whom this paper is specially addressed, that are qualified to appreciate the importance of this subject, and to propose some plan to meet its wants. They need not be told that prostitution is the foul source of a set of loathsome diseases more prevalent, even in respectable society, than any but themselves can know; that a constitutional taint is often acquired, which neither time nor medical skill avail to eradicate, and which is transmitted to poison the systems of generations to come; and not only so, but that this taint so pervades the fluids of the body, that they may communicate it when introduced directly into the circulating fluid of another person. The proof of this last is the fact that individuals have acquired the syphilitic taint by dissection wounds and vaccination, and that nurses and nursing infants have contracted it from those with whom

they have been in contact by delicate mucous surfaces liable to the slightest abrasion.

The contamination of vaccine virus with the syphilitic taint, and its sad effects among the soldiers during the late war, are familiar to all and need no comment here. In civil practice, too, the necessity of a good authentication of the source of vaccine is well understood by medical men. So common, in fact, has become the syphilitic diathesis throughout society, that the only safe rule in vaccination is to presume that all individuals labor under it, unless the contrary can be vouched for by medical authority. Equal caution is necessary in the selection of a wet-nurse, the importance of which is now generally appreciated by the public at large. Unfortunately medical advice is seldom asked for the protection of the nurse, who is alike exposed to infection.

The question may be asked, what advantages are to be expected from legislative interference?

It is answered: (1) Under existing circumstances brothels are the common resort of offenders against the rights of property, and here they are generally secure. A system of toleration would imply free police visitation, and would break up these nests of crime.

By making the faces of prostitutes familiar to detectives and the police generally, they could easily be kept from public assemblies, where they not unfrequently intrude under guise of outward propriety. It would be a satisfaction not now enjoyed, to know that our wives and daughters would not be subjected to contact with outcasts of their own sex. Under such a system an intruder could be notified to withdraw without exciting attention, and the hint would not fail of its effect.

The frequenting by prostitutes of vile drinking and gambling houses, low dance-houses and places of amusement, would thus effectually be broken up, and the removal of one of their chief sources of attraction would tend strongly to their discontinuance. It is evident that the association of prostitution with other vices tends to the luxuriant growth of all and their ripening into desperate crimes. These places of ready access therefore become most dangerous resorts for the young and inexperienced, and as they are managed so as to keep inside the pale of law, there is no existing remedy. Let prostitution then be isolated from all other means of indulgence, and not only will it be deprived of the material support of its allies, but its innate

depravity will be clearly revealed, and it will be branded with the infamy which it deserves.

Moreover, police supervision would prevent the solicitation of passengers by public women on the streets and at their doors and windows, practices now so common and so shocking to decency.

(2) The present sanitary condition of many of the dens of infamy in our large cities renders them foci of disease from overcrowding and filth, which police supervision would obviate.

(3) Reformatory measures could be more readily addressed to prostitutes, and missing women might often be traced and brought into communication with their friends, when brothels are freely accessible to the police. Besides, it often happens that young girls are enticed to secret dens, and detained forcibly, or otherwise, until their ruin is complete, and then they feel unable to escape a life of infamy.

(4) It is believed that a special tax on property used for purposes of prostitution and a capitation tax on public women would not only afford a considerable revenue, but present an inducement to tax-payers to expose clandestine prostitutes. This point, however, will not be insisted on.

(5) But the great end proposed is the prevention of venereal diseases; and while legislation looks especially at this object, the others will naturally be gained by the same measures.

This subject therefore properly belongs to the medical profession, as the class best qualified to know its evils, realize its difficulties, and provide the remedies. Is it not true that society requires of us some approximate solution, at least, of the *Great Social Evil?*

It may now be expected that the writer, having proceeded thus far, should offer some plan suited to the wants and condition of our country. The expectation is perhaps reasonable, since he has presumed to introduce the subject. His object in so doing, however, has been rather to invite the attention of abler and more eminent members of the profession, in the hope that the ample discussion of the subject may lead to its elucidation and a remedy for its evils, than to seek a satisfactory solution himself. Nevertheless the following suggestions are offered for the consideration of those ready to admit that some remedy is needed.

Our system of government is one of laws, by consent of the

governed; therefore the French plan of assuming control without legislative authority would be quite unsuitable. The present British system, restricted to a few garrisoned posts and naval stations, would be too limited for this vast country, and would not include the large cities, which most require its provisions. It is not worth while to notice particularly the plans in force at Hamburgh and Berlin, the governments being so dissimilar to our own. The plan proposed by Dr. Sanger is limited to the city of New York, and may be well adapted to the wants of that city. Indeed, so many factors enter into the question in each locality, that no detailed scheme could be devised suitable for all. Hence it is proper that the legislature should vest in the municipal government of each city discretionary power to frame enactments suitable to existing circumstances. It would, of course, be the duty of the mayor, with the aid of the police force, to carry the provisions into execution. Most large cities are provided with a Board of Health, and to its officers, medical men, might be entrusted the medical details of the system.

It is conceived that the following propositions might form a useful basis of regulations:

(a) The registration of all known prostitutes, (1) at their own instance, (2) on sufficient evidence of their leading an abandoned life.

(b) Medical inspection of registered prostitutes at regular and short intervals, the immediate removal of those found diseased to hospital and their detention till cured; also authorized police visitation.

(c) Let it be made a penal offense and a ground of action for private damages, for any person to communicate venereal disease to another.

These propositions will now be remarked upon separately. (a) The registration of prostitutes need not be understood to imply a formal license to pursue a disreputable calling, but their toleration in it, subject to such regulations touching deportment as might be directed by municipal authority. Voluntary inscription requires no qualification here. Compulsory inscription should rest on good evidence, and conviction of having communicated venereal disease, or being the subject of it in any form, would be an important point.

It is proper to observe that charges leading to the inscription

of a woman as a prostitute should be investigated in such a manner as not to excite public scandal or afford gratification for idle curiosity. The case should be tried by the proper magistrate in private, leaving to the woman the option of being present. Should she feel aggrieved at the result, appeal might be granted to a public tribunal, and false charges or injustice on the part of the magistrate would subject those in fault to action for libel. No jury of Americans would suffer the fair name of a virtuous woman to be tarnished with impunity, while a consciousness of guilt would deter a woman from seeking publicity.

It should also be provided that any woman might have her name at once removed from the list of prostitutes, on good evidence of quitting an abandoned life. Such would be marriage, reconciliation and return to her family, and retirement to a Magdalen asylum. Provisional erasure might be granted on condition of submitting to the rule specified for suspected women below.

In case of suspicion with reasonable doubt, the woman might be required to furnish for a stated period certificates, at regular intervals, of freedom from venereal disease. Failure of compliance would be sufficient ground for inscription. Such a provision would be found especially useful in large manufacturing towns, where female operatives are addicted to clandestine prostitution. Vigilance on the part of the police would discover grounds for placing their names on the list of suspected persons, and exacting a clean bill of health at stated intervals. For reasons before stated, it is believed that the authorities would not venture to do a woman injustice, and it is evident that the consciousness of such surveillance, with its consequences, would deter many a woman from evil courses.

It will, of course, be understood that the lists of inscribed and of suspected women should not be accessible to the public, but only to those duly authorized for the ends of justice.

(b) The utility of this provision is too apparent to require proof at any length. It is to be remarked that the enforcement of such a regulation at Paris has well nigh stamped out venereal diseases among the registered women. The cost of putting the plan in operation would soon be repaid in the diminution of crime and disease, which are causes of enormous expense. There would be required ample hospital accommodation, not only for public women, but for all other venereal cases that

might apply for treatment; and it should be made obligatory on all inmates to designate, if possible, the source of infection. Of course no one would be discharged until thoroughly cured, for it is understood that the public has a right to prevent its beneficiaries from spreading the seeds of disease among the unsuspecting.

An authorized and unrestrained police visitation would effectually prevent disorders and nuisances among public women. The sale of intoxicating drinks and gambling could be banished from brothels, and prostitutes themselves be restrained from seeking custom in haunts of amusement and dissipation. This would also prevent brothels from becoming the resort of the whole predatory fraternity, now their favorite retreat for spending ill-gotten gains and concocting new schemes of villainy.

(c) As this proposition has never before been advanced, to the writer's knowledge, and may strike the reader with surprise, it is proper that some reasons should be given for offering it.

Quarantine regulations for infectious diseases and those exposed to them have long and extensively been adopted, and no one questions the right of government to punish their infraction, whether the disease is actually communicated by the offending party or not.

In England not only is vaccination compulsory, but the inoculation of small-pox virus is a crime at law, whether the result be an outbreak or not.

When the terrible results of syphilis are considered; together with the fact that, in its primary form it is, in a great proportion of cases, well known to its subject, and communicated either maliciously or heedlessly, it is time that it were recognized as a penal offense to give it to another person. While this would bear equally upon prostitutes and their paramours, a prosecution for private damages would be especially operative against the latter, who share too little the odium of an evil in which they are participants.

It will be urged, and must be granted, that most infractions of such a law would go unpunished. The same is true of other offenses for which severe penalties are provided, and the omission of which would be a disgrace to our statute books. Arson and perjury are crimes often committed, but seldom detected; swindling, adultery and manslaughter are regarded by many as excusable under certain circumstances, of which the perpetrators are

allowed to be the best judges; while forgery and fœticide are generally hushed up, for fear of shocking people's sensibilities.

The public scandal involved in the trial of such cases would be made an objection, but the same holds in trial for rape, seduction and unnatural crimes.

The disinclination of the party aggrieved to prosecute would be the most serious drawback, for few people are willing to participate, even as witnesses, in trials involving chastity; but cases now and then would be brought into the courts, so as to lead to some terror of the law and caution about incurring its penalties.

Prostitutes, when found diseased, if possible should be made to designate the source of infection; and if the parties accused should be found similarly diseased, and the intercourse were fairly proved, the case might be brought home to conviction. Also male venereal patients in public hospitals should be made to account for their disease, which would frequently lead to bringing clandestine prostitutes under police supervision, in case they were found diseased. This last class is one over which laws can exercise no direct control, and which from its concealment, must be far more dangerous in a moral and sanitary view than the one under police restrictions. The existence of such a provision and its occasional enforcement would, it is believed, bring it into favor and increase its usefulness. There is little danger that it would be used for purposes of personal spite or extortion, for if the accused party were free from disease, the result would be an acquittal and a probable counter-charge of malicious prosecution. At the same time, if it led to the exercise of more caution about the risks of contagion, both in receiving and communicating it, the great end of the act would be attained.

The leprosy of the Hebrews and that of Europe in the middle ages were properly thought to justify a rigid exclusion of the unfortunate sufferers from society. Syphilis is a foul disease, which not only poisons the victim and his posterity, but generally involves a moral leprosy whose fruits ripen in eternity. In our day we cannot expect to see lazarettos established for the seclusion of venereal cases in general; though the plan is already carried out in France, and partially in England, as regards known prostitutes, and the right of government to establish pest houses for small-pox is everywhere admitted. It might not, however, be impracticable to subject to the restrictions of a lock-hospital any person, male or female, who should seek intercourse with another when

diseased. It is probable that most offenses of this sort would go unpunished, but the existence of the law, with its occasional execution, would go far in checking such recklessness.

What is chiefly needed at the present time, is to bring this whole subject of prostitution and the repression of venereal diseases prominently before our legislators. This does not imply that the subject should be discussed in the journals for general reading, nor in popular lectures or harangues, which are the ordinary means of agitating a subject and manufacturing public opinion. It is, in fact, wholly unfit for the foundation of a grand sensation to gain notoriety or wealth, or of a hobby to ride into office, and should not be made a handle for wire-workers of any class.

It has already been said that medical men are those best qualified to appreciate this subject, and it is through their coöperation that the best prospect is afforded for obtaining and carrying out appropriate legislation. Even in the profession there is great ignorance about this matter, which must be cleared up before definite action can be taken. Time is required for their enlightenment, and the proper means are the medical journals and societies. In this way the British medical public are now fast becoming enlightened, and are almost united in the conviction that society demands some form of repression, and that the system already inaugurated has borne good fruits. The clergy, to a considerable extent, and individuals of other classes are seconding the movement, so that its thorough trial is only a matter of time.

One great difficulty in this country would be the danger that politicians might use the measure to make capital of, and so bring it into disrepute with those who might otherwise think favorably of it. As honesty is the best policy in the long run, the wisest course obviously would be to compromise nothing with those who make a trade of politics, but let the matter rest on its own merits, suitably presented. It is far better to wait and establish a measure on a permanent basis, when the public morals and health are involved, than to identify it with the success of a party whose power is liable to fluctuations.

Once the subject is understood thoroughly by the medical profession, and its importance acknowledged, some plan can be devised for attaining the end proposed. In most of the States there are State Medical Associations, and a memorial from such

a body, calling for legislation, might be accompanied with the sketch of a bill, if it were thought proper. It usually happens that one or more medical men are found among the legislators, who would naturally be appointed on the appropriate committee of reference, and whose advocacy in general debate might carry the bill.

The hints here thrown out are not proposed as a plan for the adjustment of the great question of prostitution. The aim of this paper is to demonstrate the importance of devising some means to stay the current of disease, which flows deviously through the current of society, contaminating both the channels of life and the fountains of generation; to prove that this object is at least measurably practicable; and partly by precedent, partly by suggestion, to point out a mode of procedure.

A FEW CASES "FROM COUNTRY PRACTICE."

By James E. Morris, M.D.

DYSENTERY—TREATED WITH IPECAC.

John H., German by birth, has been a resident of the United States for some fifteen years; age, 35; a farmer by occupation; had, in 1873, an attack of hæmaturia miasmatica, which I successfully treated, and advised him to follow some less laborious trade. Since then he has been peddling. About the middle of November, 1874, he was attacked, to use his expression, with "bloody flux;" attributes it to the variety of water he uses in his peripatetic travelling; consulted with one of our "Texas five years' practitioners," who placed him under treatment.

December 27th, was called in consultation with Dr. Tottingham, who himself had just been called to the case, the attending physician having been discharged. Find the patient with much tenesmus and tormina, weak and emaciated, having a constant desire to stool, and passing from a teaspoonful to a tablespoonful of bloody mucus 15 to 20 times a day; skin parched and dry; pulse rapid and and weak, 110 to the minute; much thirst and a perfect loathing for food He states he has been taking from the discharged physician, for the past four weeks, sugar of lead and opium, and from one of the powders shown, they contained

about 3 grains acetate of lead and ½ grain powdered opium. We put him on magnes. sulph. ʒss, liq. opii. sedativ. ♏x quinia sulph. grs. iv, acid sulph. aro. ♏ vj, aquæ ℥ss, to be repeated every three hours. Dr. T's. health not being very good, he desired me to take charge of the case.

December 28th. No change; continued treatment.

December 29th. Suffering continuously with tenesmus and tormina; tendency to stool every fifteen minutes; says life is unbearable. I order, ℞—olei. morrhuæ ʒi, liq. opii. sed. ♏xv; mucilage, Q. S. ad. ℥i. Sig. Repeat every 3 hours (I having had some success previously with the cod liver oil in this condition).

December 31st. Did not see patient yesterday; to-day, no perceptible change in his condition; concluded to try the ipecac treatment, though was rather tender-footed on account of the debility and emaciation of the patient.

6 a. m. ℞—Pulv. Ipecac grs. xxx, to be given in teaspoonful of water.

12 m. Has less tormina and tenesmus; stools not quite so frequent; no change in appearance. ℞—Pulv. ipecac grs. xxx, as before.

4 p. m. Resting easy; sleeping quietly.

6 p. m. Repeated the ipecac; no vomiting or nausea at either dose; sleeps soundly until 11 p. m.; has a fœcal evacuation with no straining, slightly tinged with bloody mucus.

January 1st—8 a. m. Has slept well since 12 o'clock; says he feels a new man; craves something to eat for the first time; ordered him chicken soup; gave nothing to-day.

January 3d. Put him on a tonic of, ℞—olei morrhuæ, ʒi, ferri pyrophosph. grs. x, 3 times daily.

January 7th. Discharged to-day entirely relieved.

January 12th. Sent for very hurriedly; find him with an intense colic. On inquiry I can find no cause, his condition generally being good, and having been very particular in his diet. I immediately suspect lead colic, and upon examination, I find the blue line on the edge of the gums very plainly marked. ℞—Hydrg. chlor. mit. gr. x, ext. colocynth co. grs. xvj, morphia sulph. grs. ss; fiat chart no. j. Sig. at once, and in two hours ℞—magnes. sulph. ʒiij, morphia sulph. gr. ¼, aquæ camphoræ ℥j, to be repeated every 2 hours. The morphia acted very happily, relieved the pain, and after eight hours, there being no evacuation, I ordered an enema of ext. colocynth co. grs. xl, aquæ

tepidæ qs., which had the necessary effect in 1½ hours. Order him to keep bowels open with salines for four days, and give ℞—potass. iodidi grs. v, ferri pyrophosph. grs. x, olei jecoris aselli ʒi, four times daily.

January 28th. Had another attack of colic; treatment as before; good result.

February 15th. Resumed his avocation, and up to this time of writing he has had no trouble further.

DYSENTERY TREATED WITH IPECAC.

Mrs. T. K., age 32; American; wife of a farmer, dysentery of four months standing; continuous tormina and tenesmus; desire to stool; evacuations small, bloody, muco-purulent in character, from twenty to twenty-five daily; very anæmic and debilitated; perfect loss of appetite; has been under treatment with no relief. Ordered ℞—Pulv. ipecac ʒj; fiat chart no. iij. S. one now and one in eight hours. Vomited the first in a few minutes—the second she succeeded in retaining. Before taking the last the evacuations entirely changed—fæcal, with only a trace of bloody mucus. Quiet for eight hours; no further trouble. Tonic, ℞—Olei morrhuæ ʒj, quinæ sulph. grs. ij, ferri ammon. citrat. grs. x. ℳ. S. Three times daily; now in perfect health.

DYSENTERY TREATED WITH IPECAC.

Gustav. S.; German; farmer; age 32. Dysentery of 4 days; has treated himself with calomel and castor oil; frequent and very bloody stools; much straining and tenesmus; very weak; considerable fever. ℞—Pulv. ipecac grs. xxx, at once; in two hours is relieved very much of the tenesmus and tormina: the bloody actions continue; repeat the ipecac in 6 hours; vomits in 2 hours; profuse perspiration; fæcal evacuations, very little blood; no further trouble.

SALICIN IN DYSENTERY.

Bernhard F.; Hollander; age 75. May 3d, had a slight sunstroke; recovered, "though with slight aberration of the intellect."

May 15th. Has a severe attack of dysentery; a continued desire to stool—in character bloody mucus. ℞—Sodæ et potass. tart. ʒss, tinct. opii ♏x., every 3 hours.

May 16th. The opium has deadened the pain somewhat; the

evacuations about the same in character, less frequent; has some little fever, and as it shows a periodicity, I add quinia grs. iv to the above dose.

May 17th. No change perceptible, on account of his age and debility, I am rather fearful of the weakening influence of the ipecac. In consultation with my partner, Dr. E. L. Day, we decide to try it. ℞—Pulv. ipecac grs. xx, every six hours.

May 20th. No change for the better. ℞—Olei. ricini. commun. ʒss, morph. sulph. gr. ¼, every 3 hours, giving him quinia sulph. at the same time.

May 23d. Complains less, though little change in either the nature or frequency of the evacuations. I conclude to-day to try the salicin. ℞—Salicin grs. xv, bismuth sub. nitr. grs. v, morph. sulph. gr. ⅛, every 3 hours.

May 27th. Much improved; tenesmus and straining disappeared; three stools daily, a little muco-pus. Continue treatment except the morph. sulph.; marked improvement daily.

June 2d. Discharged.

June 6th. Could not resist the temptation of "boiled greens"—a return of the flux. Ordered salicin and bismuth.

June 13th. Discharged—in perfect health at this time.

EPILEPSY—BROMIDE OF POTASSIUM IN.

Mrs. C. B.; American born, German parentage; age 35; has several children; has had "*fits*" since her first pregnancy; came under my treatment in February, 1870; had during 1869 several fits; had been under treatment with little relief. Prescribed ℞—Potass. bromide ʒi, daily in three doses, to be continued for months.

February 12th, 1875. Was called to see her to-day; is now in the second month of pregnancy; had two attacks in January. Bromide of potassium as before. (*No recurrence as yet, September 12th, 1875.*)

Mita ——; German; age 20; servant; emigrated to Texas two years since.

June 9th, 1875—9. p. m. History: Mrs. B., the lady with whom she is serving, says this is the sixth attack in the past fortnight; they come on without any warning—frighten her very much. Four years ago, while in Germany, she had several attacks—the first about the time of puberty—and she had them for some months; was placed under treatment; knew nothing of the treat-

ment with the exception of blood-letting. I find her just recovering from one. ℞—Potass. bromidi. ʒss, morph. sulph. grs. ss. S. To be taken at once.

June 10th. Has rested quietly all night; feels much refreshed. I order, ℞—Potass. bromidi grs. xx, three times daily, to be kept up for months, and give her hopes of a cure. She is very assiduous in the treatment, and up to this time has had no recurrence.

GUN SHOT WOUND OF RIGHT LUNG—RECOVERY.

Bertha M., age 3 (May 17th, 1875), was accidentally shot by one of her little playmates, with a breech loading Derringer, carrying a ball of 48 to the pound. The ball entered about ⅛ of an inch anteriorly and below the right nipple, passing through the lung, and lodged a little below and under the right scapula. About 1 p. m., while the family were at dinner, they were alarmed by the shot and screams. Dr. F. A. Schmidt, of Cat Springs, was visiting the family at the time, and he states the blood gushed in a stream the size of the wound, and in a few seconds vomited much blood. I being the family physician, was immediately called in, and arrived in fifteen minutes. I found her pallid and almost pulseless, and with the breathing a little hemorrhage with an escape of air. I only passed the probe sufficiently to be satisfied of the penetration, and searched for the *ball* and found it as stated above. We gave her ʒj tinct. opii. camp. as a stimulant and narcotic, and applied cold water to the external wound.

3 p. m. Becoming very restless, I gave her ⅛ gr. morph. sulph.

6 p. m. She was resting quietly and calmly sleeping; pulse weak but regular; breathing good. I stepped across the street, and in a few moments was recalled with the message she was bleeding terribly. I found the hemorrhage profuse, with a great deal of restlessness and a complaining of "*terrible*" pain; pulse very feeble. I administered spts. vini gallici ʒi, morph. sulph. gr. ⅛, and in fifteen minutes all was tranquil and hemorrhage ceased. I kept her thoroughly narcotized during the night, and had no return of hemorrhage until 4 a. m., the 13th, brought on again by restlessness. Morphia was again administered and acted like a charm, and from then, the case progressed favorably until the 16th of June, when I operated with the assistance of Dr. E. L. Day, and extracted the ball, which weighed ʒij. Everything progressed favorably, and in five days the wound for ex-

traction was closed. The nature of the wound, the size of the ball, the age of the child, and the season, render the case somewhat interesting. No sign of suppuration; not the slightest fever. I attribute the success very much to the complete and prolonged narcotism, as, for the first 72 hours she was completely under the effects of morphia, and up to the 8th day was more or less under its *healthful* (to her) influence.

BELLEVILLE, AUSTIN COUNTY, TEXAS, Sept. 13th, 1875.

INSANE HOSPITALS.

BY MR. BERNARD A. REYNOLDS.

The *Cornhill Magazine* said, two years ago, that "astronomers are but now beginning to recognize the full significance of those strange discoveries which have been made respecting meteors during this last four or five years." What was said with truth of the astronomers, may be asserted with equal truth, of the general public in relation to insane hospitals; for it is one of the notable discoveries of a late date that madmen can be treated successfuly by means of humanity, and that it is no longer necessary to consign a maniac to a dark dungeon, or to chain him to the floor in his cell. In fact, it may be stated, that no branch of human progress has advanced with such giant strides from the darkness of ignorance, to the light of knowledge, as the branch of the old tree which relates to the treatment and the management of the insane. Instead of being locked up and chained in a cell, and fed like a wild beast in a menagerie, the lunatic is provided with comfortable clothing, with a good room and a good bed, with the greatest abundance of the most wholesome food, and has the liberty of the airing court, where at certain hours, in the morning and evening, he can amuse himself by conversing with the other patients, with reading, and with playing at the games which are common among persons of his condition. It may be stated, too, that the persons who are confined in our lunatic asylums at this present time, live better than they ever did before in all their lives, and in saying this, the whole revolution in the treatment and the management of this unfortunate portion of our population may be seen at a glance. It is, indeed, the grandest revolution of modern times, and puts to rest forever, the often-mooted question as to the relative civilizations of the ancients and the moderns; for whilst the ancients aggravated the disease, the

moderns alleviate it, and frequently restore the patient to his former position in society, by kindness and regularity of regimen—such, for instance, as getting up and retiring to bed at certain hours, regular attendance at breakfast, dinner and supper, washing every morning, bathing and shaving once a week (the nurses are all barbers), regular and out-door exercise in the airing, or in the field as laborers.

But on the present occasion, we would select the Alabama Insane Hospital as the model institution of the United States. It is located at Tuskaloosa, the former capital, less than a mile from the Warrior River, and almost a mile from the centre of the city, the University of Alabama being distant about half a mile. The first act "to establish a State Hospital for insane persons in Alabama" was passed and approved February 6th, 1852. The hospital was in successful operation at the beginning of the war, and struggling through that disastrous era in our history, it escaped the torch of the military incendiary, which burnt up the University buildings, and is now in successful operation under the superintendence of Dr. P. Bryce, whose administrative abilities are of the highest order.

We have before us the acts of the legislature and by-laws, for the erection, organization, and government of the hospital, printed in 1861; and the reports from 1870 to 1874, inclusive, of the Superintendent. In the tabular statements for 1874, we learn that the number of patients admitted and discharged from July 16th, 1861, to October 1st, 1874, were—admitted, 1032; discharged recovered, 313; discharged improved, 79; discharged unchanged, 44; died, 250; remaining, 345. Of this number, 1186 were men, and 878 women. In regard to the duration of the insanity of patients, their degree of education, their age, domestic state, form of insanity, occupation, alleged predisposing causes, and alleged exciting causes of insanity of patients, although there are full tabular statements, yet they do not contain the kind of information which is interesting to the general reader. We shall therefore pass on to the other topics mentioned in these interesting reports. We have stated that this hospital is regularly incorporated. Its affairs are controlled by seven trustees, appointed by the Governor of the State. It receives all classes of insane persons for treatment, and is supported entirely from the income received from their board and incidental expenses. Occasionally it has received special appropriations from the

State Treasury, for the purpose of making improvements, or additions to the buildings. Private patients, or those who pay their own expenses in the hospital, are charged twenty dollars per month, for board, lodging, medical attention, nursing and all other contingent and incidental expenses, except wearing apparel. Of this class there are but thirty-three at this time in the hospital. The revenue from this source amounted, during the year 1872, to nine thousand nine hundred dollars.

The indigent insane, or those who are unable to pay their expenses, are supported by the State. By special enactment, the sum of four dollars per week, or a little over sixteen dollars per month, is allowed quarterly out of the State Treasury for this purpose. This sum is intended to cover not only their board, clothing, and all other expenses incident to their care and treatment, but the salaries of the Superintendent and his assistants, the wages of nurses, employës and mechanics, the repairs upon the immense and expensive establishment in which the patients are confined, the furniture, fuel, etc. Sixteen dollars per month, we repeat, for each indigent patient sent here on the certificate of the courts, comprise the whole amount paid by the State for the support of her hospital for the insane; and for this sum these patients are not only to be comfortably clothed, generously fed, kindly and efficiently nursed, and all their numerous wants supplied, but the cost of keeping up an extensive and expensive establishment, including salaries of the officers, wages of mechanics, repairs, furniture, machinery, etc., must be liquidated by the Trustees of the institution.

It is really difficult to conceive how so small an allowance can be made to meet the demands, especially when it is known that, of all classes of boarders, the insane are perhaps by far, the most expensive. They not only require constant and expensive nursing and attention, nutritious food in large quantities, medicine, and comfortable clothing, but they are destructive of all kinds of bedding, clothing, and every species of property, to an extent which is hardly conceivable by the inexperienced. The daily average of patients under treatment is shown to have been, in 1872, three hundred and twelve, of which number two hundred and eighty were indigent. Dividing this daily average into the amount actually received from the State, and we have the sum of one hundred and seventy-eight dollars and eighty-eight cents per annum, or three dollars and fourty-four cents per week actu-

ally paid by the State for each indigent patient. To prove that this allowance by the State is not exorbitant—that it is indeed *less than that of any other Southern State*, the Superintendent, in his annual report for the year 1873, compiled the following table from the published annual reports for 1872 of all the Southern hospitals for the insane.

TABLE.*

STATES, AND NAMES OF ASYLUMS.	Average No. Patients.	Total Annual Expenditure.	Annual cost of each patient.
Virginia—Eastern Lunatic Asylum	233	$ 63,607 45	$ 272 99
Virginia—Western Lunatic Asylum	340	68,960 27	202 82
Virginia—Central Lunatic Asylum	187	42,457 21	227 04
Ky—Eastern Lunatic Asylum	555	129,915 59	234 08
Ky—Western Lunatic Asylum...	317	65,470 13	206 53
Tennessee—Hospital for the Insane	362	73,300 23	202 48
North Carolina—Insane Asylum ..	239	70,903 15	296 66
South Carolina—Lunatic Asylum..	289	89,285 49	308 94
Georgia—Lunatic Asylum.....	420	121,371 03	288 97
Mississippi†—Lunatic Asylum	300	93,600 00	312 00
Louisiana—Insane Asylum	165	58,790 00	356 30
Texas—Lunatic Asylum.....	100	64,771 01	647 71
Alabama—Insane Hospital	312	60,841 20	195 00
Totals.....	3,819	$1,003,272 76	$ 262 70

From the foregoing statement it appears that in the thirteen Southern hospitals there was a daily average of three thousand eight hundred and nineteen patients under treatment during the year 1872, at an annual expenditure of one million three thousand two hundred and seventy-two dollars and seventy-six cents,

*Where the average number of patients is not stated in the Reports of the above Asylums, it was determined by taking the mean of the number remaining in the Asylum at the beginning and end of the year.

†The average number of patients, and annual expenditure of the Mississippi Asylum, given by its Superintendent, are for 1873, and are based, it is supposed, upon the results of the preceding year; and the expenditure is estimated in State Warrants at a discount of 75 per cent. The expenditures of the Louisiana and Texas Asylums are also estimated in a depreciated State currency. The remaining expenditures are in United States currency.

and at a cost of two hundred and sixty-two dollars and seventy cents *per capita*. A little further calculation will show that Alabama not only appropriates a proportionately smaller sum for the support of her indigent insane than any other Southern State, but fully one-third less than the general average.

The Superintendent next submits a carefully prepared manuscript estimate, furnished by Dr. Curwen, the Superintendent of the Pennsylvania State Lunatic Hospital, of the weekly cost of supporting patients in thirty-three American Hospitals for the insane during the year 1872; and since the subject is one of interest to the general reader, and affords to the financier especially a broader basis for intelligent comparison, we present here the tabulated statement:

NAMES OF ASYLUMS, AND AVERAGE NUMBER AND WEEKLY EXPENSE OF PATIENTS.

Pennsylvania Hospital for the Insane, Philadelphia—Males	202	$ 9 99
" " " " " Females	202	9 10
State Lunatic Asylum, Utica, New York	...	6 43
New Hampshire Asylum for the Insane, Concord	234	5 90
McLean Asylum for the Insane, Somerville, Mass.	173	16 93
Butler Hospital for the Insane, Providence, R. I.	126	7 79
State Lunatic Asylum, Trenton, New Jersey	700	4 96
Government Hospital for the Insane, Washington, D. C.	...	4 50
General Hospital for the Insane, Middletown, Conn.	264	4 00
Vermont Asylum for the Insane, Brattleboro	....	3 03
Friends' Asylum, Frankford, Philadelphia, Penn	....	8 35
King's County Lunatic Asylum, Flatbush, New York	....	2 50
Northampton Lunatic Asylum, Massachusetts	428	3 69
Michigan Asylum for the Insane, Kalamazoo	....	5 14
State Lunatic Asylum, Jackson, Mississippi	197	4 50
Worcester Lunatic Hospital, Massachusetts	....	4 25
Willard Asylum for the Insane, Willard, New York	564	3 68
St. Louis County Lunatic Asylum, St. Louis, Missouri	....	5 18
Minnesota Hospital for the Insane, St. Peters	243	3 96
Retreat for the Insane, Hartford, Conn.	....	9 04
Alabama Insane Hospital, Tuskaloosa	312	3 75
Maine Insane Hospital, Augusta	....	3 51
Missouri Lunatic Asylum, Fulton	....	4 30
Eastern Lunatic Asylum, Williamsburg, Virginia	233	4 65
Western Lunatic Asylum, Staunton, Virginia	...	3 66
Asylum for the Insane, Stockton, California	1100	3 25
Taunton Lunatic Hospital, Massachusetts	....	3 75
Longview Asylum, Carthage, Ohio	585	3 40
Western Pennsylvania Hospital for the Insane, Dixmont	459	5 26
Northern Ohio Lunatic Asylum, Newburgh	369	4 32
Southern Ohio Lunatic Asylum, Dayton	609	3 02
Indiana Hospital for the Insane, Indianapolis	485	5 44
Pennsylvania State Lunatic Hospital, Harrisburg	413	4 97
General average		$ 5 31

NOTE.—This statement includes all expenses, except extraordinary repairs, etc.

The sewing and housekeeping departments are conducted with economy and skill. The following is a correct account, furnished by the Matron, of the articles made and repaired in the sewing-room exclusively by the patients and nurses of the hospital:

ARTICLES MADE AND REPAIRED IN THE SEWING-ROOMS.

Aprons	15	Pillow-tickets	132
Chemises	423	Petticoats	319
Curtains	82	Quilts, made	322
Collars	96	Ruffles	25
Corset-covers	10	Sheets	674
Coats	4	Stocking-yarn, spun, pounds	200
Drawers, pairs	430	Stockings, pairs	318
Dresses	360	Socks, pairs	325
Dickeys	96	Sacques	50
Gowns, night	50	Shirts	654
Handkerchiefs, hemmed	160	Skirts	24
Mattresses, moss	96	Spreads	160
Mattresses, shuck and cotton	75	Ticks, underbed	50
Mattress-ticks	20	Towels	454
Napkins, hemmed	64	Under-vests	6
Pantaloons, pairs	511	Under-beds, straw	50
Pillows, moss	126	Wrappers	37
Pillows, feather	7	Waists, paroda	10
Pillow-cases	383		

We take the following from the account of the productions of the farm, garden, and dairy:

PRODUCTIONS OF FARM, GARDEN, AND DAIRY.

Beets, bushels	215	Okra, bushels	356
Beans, butter, bushels	98	Onions, bushels	164
Beans, snap, bushels	112	Peas, English, bushels	48
Beef, killed, pounds	1,361	Peas, old field, bushels	52
Buckwheat, bushels	2	Potatoes, sweet, bushels	2,500
Butter, pounds	964	Potatoes, Irish, bushels	585
Corn, bushels	118	Pigeons	147
Cabbage-heads	14,596	Pea vines, tons	18
Cucumbers, bushels	113	Pepper, bushels	50
Chickens	150	Parsley, pounds	183
Celery, pounds	75	Pork, pounds	2,151
Cantaloupes	3,033	Radishes, bushels	7
Evergreens, transplanted	1,200	Soap, soft, barrels	144
Eggs, dozens	186	Sage, pounds	256
Egg-plants, bushels	104	Squashes, bushels	52
Fodder, tons	5	Shallots, bushels	145
Fruit trees transplanted	125	Strawberries, gallons	91
Hay, tons	7	Thyme, pounds	183
Horse radish, bushels	8	Turnips, bushels	6,700
Lettuce-heads	3,500	Turnip-salad, pounds	4,700
Milk, gallons	3,751	Tomatoes, bushels	210
Melons, water	2,172		

Attached to the hospital are spacious flower gardens, which are tended by the patients. There is a fine amusement hall,

which is opened once a week for the entertainment of all, or as many of the patients as may be able to attend. Exhibitions of every kind, spectacular and dramatic—dancing, the magic lantern, a piano, concerts, tableaus, billiards, and lectures, constitute the prominent features of these entertainments, and are greatly enjoyed both by the spectators and participants, and are alike beneficial to all. On other evenings there are assemblies in the ladies' parlor, and their sewing parties now constitute a marked feature in the sanitary management of the hospital.

There is another kind of amusement which adds greatly to the enjoyment of the patients, and this is their May-Day Festival. We attended the festival of 1873, when we witnessed the dance round the May-pole, and heard the speeches delivered to the Queen by the patients who had been selected for that purpose.

The following is a copy of the programme:

MAY-DAY FESTIVAL
AT THE
ALABAMA INSANE HOSPITAL.
1873.
ORDER OF EXERCISES:

The procession will be formed in the lower corridor of the Centre-building, at 4.30 p. m., and march, by the music of the

Independent Brass Band,

to the

RUSTIC BOWER

on the Southwest Lawn, in front of the building, in the following order:

Queen and Maids of Honor,
Sceptre-Bearer and Crowner,
Bearers of May-Poles,
Flower-Girls,
Subjects,
Visitors.

The ceremonies at the Bower will continue as follows:

Music.
Coronation and Salutatory Addresses (*original*),
Music,
Presentation of Floral Offerings, with appropriate sentiments and replies (*all in original verse*),
Music,
Queen's Address,
Music,
Dance around the May-Pole,
Games, Sports, etc.

The festivities will be further enlivened by
REFRESHMENTS,
and will conclude with the launch, in the fountain reservoir, with appropriate ceremonies, of a beautiful, full-rigged brig, made and presented by Mr. Charles Geary, and called the
MAY-QUEEN.

The Sunday services in the chapel continue to be gratuitously conducted by the ministers of the different religious denominations in Tuskaloosa, and prayers are said there every morning by the Superintendent. An organ accompaniment adds the usual interest to the singing on these occasions.

There is a fine little library belonging to the hospital; and what is truly astonishing, there is a tiny newspaper printed and edited by one of the patients. This paper is called the *Meteor*. It is printed quarterly, by Joseph Goree, a patient, and issued to subscribers at the very moderate sum of fifty cents per annum. In exchange for the *Meteor*, the editor receives the foreign Quarterlies and many of the valuable newspapers of the North. For the patients generally, the hospital is supplied *gratis*, with most of the State papers. The following is a list taken from the Superintendent's Report:

LIST OF JOURNALS REGULARLY RECEIVED.

1.	Advertiser, Montgomery.	21.	News, Eufaula.
2.	Advocate, Huntsville.	22.	Churchman, Portland, Oregon.
3.	Advocate, Greenville.	23.	Observer, Opelika.
4.	Advertiser, Moulton.	24.	Register, Mobile.
5.	Alabama, Herald, Scottsboro.	25.	Religious Herald, Richmond, Va.
6.	Argus, Selma.	26.	Shelby Guide, Columbiana.
7.	Beacon, Greensboro.	27.	S. W. Presbyterian, N. O., La.
8.	Bigbee News, Demopolis.	28.	S. Presbyterian, Columbia, S. C.
9.	Blade, Tuskaloosa.	29.	State Journal, Montgomery.
10.	Catholic World, New York.	30.	South Alabamian, Greenville.
11.	Chr'n Advocate, Nashville, Tenn.	31.	Spectator, Northport.
12.	Commonwealth, Marion.	32.	Times, Tuskaloosa.
13.	Courier, Clayton	33.	Times, Union Springs.
14.	Democrat, Huntsville.	34.	Times, Eufaula.
15.	Howard Collegian, Marion.	35.	Times-Journal, Florence.
16.	Iron Age, Birmingham.	36.	University Monthly, Tuskaloosa.
17.	Journal, Livingston.	37.	Vindicator, Camden.
18.	Mirror, Edinburgh, Scotland.	38.	West Alabamian, Carrollton.
19.	Musical Monthly, Savannah, Ga.	39.	Whig and Observer, Eutaw.
20.	News, Tuskegee.		

The work on the farm and in the garden is carried on almost exclusively by the patients and their nurses, under the direction of an experienced gardener and farmer. With the exception of

meats, bread-stuffs and groceries, all the table supplies consumed in the hospital have been produced upon the premises, together with a large quantity of pork and corn, and all the hay and fodder required for the stock, horses, and milch cows, for the approaching winter. As an evidence of what can be accomplished in farming by liberal and intelligent distribution of manures and thorough cultivation, we would state that upon one acre of ground in the vegetable garden, there were raised and gathered, within the last twelve months, six hundred bushels of ruta baga turnips, one hundred and eighty bushels of onions, one hundred and fifty bushels of cucumbers, and a ton and a half of excellent hay—aggregating a value in money of nearly a thousand dollars. We would state farther, that while this acre afforded, perhaps, the greatest yield of vegetables, it was not prepared nor planted with a view to special results, nor with any expectation of publishing its productions. We think it likely that the latter might have been greatly increased by special attention to the selection and rotation of crops.

The dairy has furnished milk enough for all the purposes of the establishment. Close attention has been paid to the raising of improved breeds of hogs and cows, and the pork will compare favorably with best of their kind.

The work-shops, laundry, and sewing rooms, like the farm, garden, and dairy, continue to furnish healthy occupation to a large number of patients, and the results, in these departments, are highly satisfactory,

The legislature has made appropriations to the amount of twenty five thousand dollars for the new building, improvements, etc. Out of this appropriation has been erected a substantial and complete steam-laundry, built of brick, and supplied with all the most modern and improved labor-saving appliances. This alone is worth, in the saving of labor, and the promptness, dispatch and certainty with which it does its work, the whole sum granted by the legislature. It is almost inconceivable, now, how the washing and ironing of five hundred dozen clothes per week was ever accomplished without it.

Attached to the laundry are shops with machinery for dressing lumber, a grist-mill, circular saw, wood and iron lathes, etc., all driven by the same engine. There is a capacious and substantial brick barn, containing stalls for cows and horses (there are thirty cows), with a poultry house and piggery attached.

This very complete establishment, as well as the steam laundry, is very much admired by visitors, and it has been suggested, that apart from the practical value and necessity of such buildings to the hospital, the ideas they convey to the minds of these visitors of the progress and advancement made in these respective directions, will more than compensate the State for the money expended in their erection.

The pleasure grounds in front, embracing about twenty five acres, have been enclosed, planted in oaks, evergreens, shrubbery, etc., and to some extent graded and otherwise improved. The flower gardens, extending eight hundred feet along the entire front of the hospital, and enclosed with a neat paling fence, have furnished the patients with healthy exercise, elevating diversion, and an unfailing, bounteous supply of beautiful flowers. With the garden in front of the east wing– the ladies' division– a beautiful green-house, twenty-five feet square, with sides and oriental roof entirely of glass, has been recently built. It is warmed by steam in winter, and water is conducted into it by pipes leading from the main building. It may be stated here that the wards, of which there are eighteen, are heated by steam, there being *registers* in each hall and bed-room.

We have now given a bird's-eye view of this excellent institution.

Each patient has a separate bed-room, except in the first and fourth wards, and in one or two of the other wards, where two or three patients occupy one or two of the double rooms. The patients are all required to rise at a certain hour, take their meals at stated times, and retire to bed at eight o'clock in winter and at nine in summer. But, perhaps a better notion may be found of the systematic regularity of the institution by giving a sketch of the daily duties of the Supervisor. He rises at six winter and five in summer, when the great bell rings. He first goes to the general office in the centre-building, where he meets the night watchman, and receives the keys of the nurses who have not reported for duty, one-half of the male nurses being permitted to pass the night out of the hospital. For such dereliction, the nurse or attendant is fined twenty-five cents. The supervisor then goes through the nine wards of his department, for the purpose of seeing that the nurses are up, and the patients turned out of their rooms and washed and dressed. When the bell rings, at seven o'clock, he goes through all the wards again,

inspecting the breakfast tables, and reports any deficiency in the food or in the cooking. The next bell that rings announces the hour for attending prayers in the chapel, when he superintends the attendance of the nurses and patients from the different wards—a portion only of the patients attend, as the worst cases are not permitted to leave their wards except for the Airing Court. After prayers he goes to breakfast, joining the Matron and the Lady Supervisor. At ten o'clock the steel triangle is struck, when he repairs to the main office, joins the physician of his department, and goes on a tour of inspection through all the wards, making a complete and thorough investigation, and fining the nurses for the slightest inattention. By adhering to this strict system, the halls, rooms and offices of the wards, are kept infinitely cleaner than any hotel in America, large or small. You may pick up a crumb of bread from the floor without detecting a speck of dirt upon it; and this cleanliness is a marked feature in the economy of this hospital. If it is winter time, the patients are inspected in the sitting rooms of the different wards, and prescribed for if needing medicine. If it is summer time, the patients are in the Airing Court, where the physician and the supervisor join them, after inspecting the wards, and prescribe for those requiring physic. At twelve o'clock the great bell sounds again, and at half-past twelve o'clock the supervisor goes the round of the wards again, inspecting the dinner tables. At one he goes to his own dinner. After dinner he repairs to the clothing room of the west wing, accompanied by the hall nurses from the different wards. Here the nurses turn over to the lady having charge of the clothing room, the torn clothes to be repaired, and the broken plates and cups to be exchanged for good ones, and also the *twisted* tin plates and tin cups; for the patients of the worse kind are given to twisting the tin ware, and of breaking it up, for making files as instruments of escape. We once knew a patient cut through the thick wooden spikes of his crib, in which he was confined at nights, as he was the worst as well as the most ingenious patient in the hospital. After cutting himself out of the crib, he ripped up a board which lined his room, and tearing his blanket into slips, he let himself down from the eighth ward through the open window—it was summer time—by means of these slips, and, when getting to the end of them, he let down the board, which touched the ground, and in this manner he reached the

ground of the Airing Court. He then took the board, and running across the court he placed this board against the brick wall, ran up it, scaled the wall, and escaped. He was captured two hours after this extraordinary feat, being entirely naked, and lying down in a small pool of water between the hospital and the Warrior River—reading the Bible!

When he returns from the clothing room, the supervisor has, generally, the balance of the afternoon for recreation; but when the supper bell rings, he has to go again on a tour of inspection. When this is over he goes to his supper, and when the retiring bell is rung, he goes to bed if he is sleepy, or sits up as long as he pleases, as he is not compelled to put out his light. This constitutes the general routine of his duties, but this is entirely apart from other duties, for when the steel triangle strikes his number—three times three—he is compelled to answer the call by repairing to the general business office in the centre building, and receiving the instructions of the Superintendent, or the physicians, about what relates to his office, for he has charge of everything in his department, and has to render in to the Superintendent, once a month, an account of every article of property, from a bed and bedstead down to a tin cup or a spittoon. He also keeps an account of the private property, but does not include it in his monthly report.

We have now said enough to show the general reader the actual condition of insane hospitals as they are conducted on the humanitarian principles of the present age. It is our candid opinion that nineteen out of every twenty patients in the Alabama Insane Hospital, live better in every way than they ever did in all their lives before they were sent there. As we have a perfect knowledge of the kind treatment they receive from the officers and employés, of the bountiful supply of wholesome food and good water, which is meted to them on all occasions, we can fearlessly state that the patients now in that hospital fare better, in every respect, than ninety out of every hundred persons in the State of Alabama. The food is better and in greater abundance, the bed-rooms are cleaner and more comfortable, and the clothing in winter and summer better adapted to their health than that of most persons who inhabit the once famous cotton belt of Alabama.

68 Camp Street, New Orleans, La.

CURRENT MEDICAL LITERATURE.

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OBSTETRIC EXCERPTA.

BY JOSEPH HOLT, M.D.

TWO CASES OF INOCULATION WITH THE SEPTIC LOCHIA OF PUERPERAL WOMEN.

By William Stewart, L.R.C.P., Edin., Barnsley.

The elucidation of the nature of the poison and the etiology of puerperal septicæmia is of such vital importance, and, at the present time, occupies such a prominent place in the mind of the profession, that I feel no apology is required from me for bringing under the notice of the profession the two following cases.

Case 1. Miss G , aged 52, a delicate woman, frequently suffering from hepatic derangement, and the subject of an obscure internal abdominal tumour, said to have followed an injury from a railway accident, called me to see her on Sunday, October 8th, 1871. I found her suffering from most excruciating pain in the right forefinger. The pain was so agonising that I was led to inquire whether she had not scratched or injured it in any manner, when she informed me she had very slightly scratched that finger and the one next to it a few days previously. Upon remarking further that I was afraid she had received some poisonous matter into the scratch, she then remembered having given an injection to a lying-in woman on the evening of the 6th (about thirty-six hours before my visit), whose nurse was very inexperienced, and had neglected to change the patient for several days after delivery. I was informed by the medical gentleman in attendance upon the confinement, that his patient had peritonitis at the time. My patient had wrapped a piece of adhesive plaster round the middle finger, which was therefore quite unaffected, but unfortunately had left the scratch on the forefinger totally unprotected. Hence, then, was the clue to the case, decomposing lochial discharge applied to the recent scratch. This case ran a most acute and rapid course. Thirty-six hours after the application of the septic matter, I saw the patient. The finger was then hard and indurated, but not much swollen The back of the hand was very red and much enlarged. The inflamed lymphatics in red streaks could be seen passing up the forearm; and in twelve hours more, in spite of all measures adopted to arrest the advancing disease, the finger had mortified. The next day, her relatives being very anxious, I met in consultation two neighboring medical gentlemen, who agreed with me as to the cause of her symptoms; but the gangrene continuing to spread soon involved the other fingers, hand and

wrist, and was followed by a fatal termination on the 10th, being ninety hours from the application of the poison, and about forty-eight hours from the time when I first saw the case. Throughout the short course of illness, the general symptoms were those of high fever, persistent vomiting, and towards the close, delirium.

Case 11. The poison in this case was introduced from a puerperal patient in my own practice. Mrs. L., a primipara was delivered by Dr. Heath, my assistant, on October 24th, 1874. Three days afterwards symptoms of acute peritonitis set in, preceded by decomposition of the lochia and accompanied by profuse diarrhœa, and other symptoms of blood-poisoning. Injections of Condy's fluid into the uterus and vagina were used to disinfect the discharge. These were administered by Mrs. M. (her mother), who, on November 5th, two days before her daughter's death, had inflicted a slight wound with a table-knife over the first joint of her left thumb. The wound being slight, she did not consider it necessary to mention it, or to apply any dressing to the part, but continued to administer the injections without any protection to the thumb. On the 7th, I found her suffering from the most violent pain in the thumb, which was swollen and indurated; the wound was gaping and sloughy in appearance, the back of the hand red, shining, and erysipelatous. A free incision on the thumb above the wound, followed in a few days by another on the back of the hand, gave exit to a large quantity of pus, and relieved to a certain extent the severity of the symptoms; but the purulent affection seemed to travel along the cellular tissue of the forearm, which in turn had to be relieved by incision. The lymphatics were inflamed as high as the elbow, where there was a patch of erysipelas. This case terminated favorably in six weeks, leaving only the first joint of the thumb stiff.

These cases appear to me to be specially instructive: first, because of the danger to which attendants are exposed when it becomes necessary to give vaginal injections to puerperal patients. And I think it becomes the duty of the medical attendant to warn the nurses to take precautions not to allow the discharge to come into contact with any recent wound or abrasion of skin. Secondly, they are exceedingly interesting from their tendency to throw light upon the nature and production of puerperal septicæmia, as they show that the application of decomposing lochia alone to a recent scratch or wound has been sufficient of itself to produce gangrene of the part and death of the patient in the one case, and a very severe attack of phlegmonous erysipelas in the other, although no puerperal condition existed in either of the inoculated subjects. I think we may, therefore, draw the conclusion, that the passage of decomposing lochia over any abraded surface in the vaginal passage is sufficient to produce puerperal septicæmia without the importation of any other specific poison. In this manner, we may account for the disease attacking much

more frequently primiparous cases, as the vagina and perinæum are much more likely to be slightly lacerated in those than in multiparæ. If it were possible to apply as effectually the antiseptic treatment to these cases as it is carried out by Professor Lister in surgical cases, I have little doubt that as good results would be obtained. Obstetricians too frequently begin to lock the door when the horse is stolen; we wait until there is evidence of decomposition having already taken place in the lochia before steps are taken to prevent or counteract the danger. Cannot some antiseptic means be devised to be used from the time of delivery? I should be inclined to think that folds of antiseptic gauze instead of the ordinary napkin, and an antiseptic lotion for detergent purposes, would be of very great service, and might prove quite sufficient to prevent the setting in of putrefactive change in the discharge.—*British Medical Journal.*

PLACENTA PRÆVIA.

Dr. Reamy exhibited a fœtus and placenta which he had delivered recently. The case was one of placenta prævia. The labor had been induced at five and a half months by the mother inserting a hair-pin into the uterus, puncturing the membranes and draining off the liquor amnii. The doctor had been called to the case in consultation with Dr. Averdick, who had already correctly diagnosed placenta prævia. When he arrived, the cord had been prolapsed for three hours and was pulseless. The margin of the placenta, which was laterally implanted, was found protruding. The woman had lost considerable blood, but hemorrhage was not then severe, notwithstanding the placenta was detached already from the lower portion of the orificial zone. Taking this fact as indicating the soundness of the practice, the doctor separated the placenta from the uterus for a distance of 3 to 4 inches in all directions from the orificial margin, after which no hemorrhage occurred. He then inserted his hand into the vagina, and passing the fingers into the uterus broke down the cranial bones, and, gliding the index and middle fingers astride the neck, delivered by traction in this way. He decided upon this plan, first, because the child being already dead its life need not be considered. 2d. The liquor amnii being drained off and the uterus rather firmly contracted upon the child, turning would not prove easy even by the bipolar method. Moreover, the task of breaking down the cranial bones at this stage of fœtal life is easy. That part of the placenta which had protruded was in a blackened state.

The doctor remarked that he had heretofore opposed Barnes' method of separating the placenta. But he considered it his duty to announce this case, so far as it might go in confirmation

of the correctness of the doctrines taught by the great London accoucheur. The woman is making a good recovery.—*Clinic.*

ON THE INFLUENCE OF SYPHILLIS IN PREGNANT WOMEN, UNDER VARIOUS MODES OF TREATMENT.

Dr F. Weber, of St. Petersburg, has given the results of his observations in 129 pregnant women suffering from syphilis admitted into the Obuchow hospital during the ten years 1863–'73. Of these patients 35 were treated only locally or not at all; 35 were submitted to treatment by inunction; in 23 inunction was combined with the external use of iodine (iodide of potassium with tincture of iodine); 19 were treated by the internal use of a combination of iodide of potassium and corrosive sublimate; and in 17 cases iodide of potassium was the only remedy used. He gives abundant statistical details, and sums up as follows: In general, the course of pregnancy was interrupted in 25, or 20 per cent. of the cases; this proportion, however, may be reduced, when it is remembered that of the patients four had erysipelas of the head, one recurrent fever, and one exanthematous typhus. 2. Every method of treatment which interferes with the digestive system predisposes to untimely birth. 3. In the cases submitted to simple local treatment, there were 20 per cent. of premature births; in three, however (suffering from typhus and recurrent fevers, and from extensive formation of abscesses), violent fever appears to have been in part the cause of the untimely labor. 4. In pregnant women who were treated by inunction together with local remedies, there was no disturbance of the course of pregnancy. This confirms Professor Sigmund's conjecture, that the inunction treatment has no injurious influence on the course of pregnancy. 5. In women in whom inunction was either accompanied or followed by the internal use of iodine, the percentage of premature births was 37; this, however, may be reduced to 20 by deducting two severe cases of erysipelas of the head. 6. General treatment with a solution of iodide of potassium and perchloride of mercury was attended by 15 per cent. of premature births. 7. In cases treated by iodide of potassium, 42 per cent. of untimely births occurred, 8. The injurious action of general treatment did not in any way correspond to its duration, but much rather to its effects on the digestive organs. Hence general treatment should be interrupted on the first indication of indigestion in a pregnant woman. 9. The period of pregnancy at which general treatment is commenced appears to have no influence on the occurrence of premature labor. 10. The stage of development of the syphilis seems to be not without influence on the occurrence of untimely birth. 11. The puerperal period ran an abnormal course in 4 out of 14 cases treated locally, in 3 out of 8 treated by inunction and iodine, in 3 out of

4 treated by iodine and sublimate (one of these patients died), and in 4 out of 10 treated by iodide of potassium.—*American Journal of Medical Sciences.*

THE SIGNIFICANCE OF THE TEMPERATURE OF THE UTERUS.

From various examinations Bärensprung came to the conclusion that the child in utero possesses a higher temperature than the mother. The deduction from this, that the pregnant womb must be warmer than the vagina, axilla, or rectum, was established as correct by Schrœder, who made the former above that of the axilla and above that of the vagina. Schrœder and Cohnstein both utilized this fact to determine the life or death of the fœtus and the existence of pregnancy. Dr. W. Schlesinger, however, insists that a preliminary question to be answered is, whether the non-pregnant uterus does or does not have a higher temperature than the vagina; whether, in fact, the difference is due to pregnancy. He therefore undertook a series of measurements, using a thermometer with a curve like a sound, and having a perforated metallic sheath around the bulb to guard against breakage. Observing all due precautions, and taking the average of many observations, he finds that in non-pregnant women the temperature in the vagina is higher than in the axilla, in the cavity of the uterus than in the vagina, and consequently in the uterus than in the axilla, in the vagina than in the rectum, in the uterus than in the rectum, in the cervical canal than in the axilla, and in the cervix than in the vagina. The higher temperature of the pregnant uterus over the vagina cannot, therefore, be ascribed to the pregnant condition alone, though the author agrees that the greater functional activity at that time would naturally favor it. Dr. Hölme, too, in his notice of Dr. Schlesinger's article, calls attention to the statements of Claude Bernard and others, that the temperature of the large parenchymatous organs is higher than that of the blood supplied to them, which is ascribed to their functional activity. Dr. S. would also expect to find the temperature of the pregnant uterus during labor higher than before that process set in.—*Wien med Jahrbb*, p. 427, 1874. *Schmidt's Jahrb*, 166, ii.

PUERPERAL FEVER.

Sir—Following very closely, and with the greatest interest, the reports of the late discussion at the Obstetrical Society, on the Relation of Puerperal Fever to the Infective diseases and to Pyæmia, I must confess myself still partially unsatisfied with the

outcome of the same, at least in so far as it affects the practical question between attendant and parturient. The closing epitome of Mr. Spencer Wells—"For a time, I will give up practice; I will not run the risk of damaging the patient who has entrusted her life to my care"—might, at first sight, appear to be unnecessary, and as almost implying a reflection on the good sense and professional honesty of our body, were it not for the great divergencies of opinion as to pathological etiology which undoubtedly exist.

To be on the safe side, we may premise, however, that if only a large majority of those practising midwifery would, even before this discussion, have admitted the advisability of the course suggested by Mr. Wells, still the difficulty of following this course will appear to many to lie in the vagueness of the expression "for a time." What we who practice midwifery, year in and year out, wish to be assured of, is not so much the advisability of abstaining "for a time," but how long a time is to be accepted as reasonably and practically satisfying the condition. It will be quite evident to all that, whether or not we grant the issue which has been raised as to what I may, perhaps, call the corelative interchangeability of the various infective diseases in the puerperal state, we must at the same time stipulate for the recognition of periods likely to be safe for the life of the patient and the honesty of the practitioner in the constantly varying round of his daily cases. In short, how long is "for a time" to be? This may involve the whole question of the life and duration of infective particles; but every day we act upon the assumption that, as regards a given individual, generator or carrier, this is limited. And I suppose there is very little reason for assuming that this limitation needs to be extended as regards the puerperal woman.

When we find that medical officers of health are inclined, as I think, rightly, to advise on this as on other points concerning the *salus populi*, we have a presumptive right to demand that they do not shelter themselves behind a certain ignorance lurking in the expression "for a time;" not that I wish to cavil, but where facts are found partly wanting, opinion may sometimes take their place as representing, at least, the outcome of empirical experience of the individual or the community. Therefore, I ask through your pages that those, and they are many, eminent men who are competent to express an opinion, may come to the rescue of those "lesser lights" who have to bear the anxiety of practice and the "bitter cruelty" of reflections on their professional *bona fides* after an untoward issue.

This "bitter cruelty" is no fancy of mine, but an expression of experience, if not personal, at least nearly so. When the public mind first became exercised on this question by the prosecution of the Coventry midwife, I endeavored to find in the text-books some definite expression of opinion on this question of time. But I found none except in Tanner's *Practice of Medicine*, where "at

least three weeks" from the date of the last attendance on a "puerperal fever" case is named. I wrote to our excellent guide at Guy's, Dr. Braxton Hicks, and he most courteously replied that Dr. Lever always considered three weeks as sufficient time, and that he himself saw no reason for doubting that that would be amply sufficient for all practical purposes. Armed with this opinion from an authority of world-wide reputation, it is, to say the least, not satisfactory to be told by a clergyman that the opinion is iniquitous and wrong according to present knowledge, and by a noble lord that he is surprised at such a time being named, as he always had understood from a medical man, now ten years dead, that three months was the least time that *he* would allow to elapse before going near even a *pregnant* female professionally; and that he is given to understand that "in these cases the blood is always poisoned." I presume he means that the practitioner's blood is *always poisoned!* Now, sir, add your entreaty to mine that our elders may disabuse the public mind of such a "pestilent heresy," which affects the honor and reputation of men, to whom among men the minimum of gratitude often represents the maximum of anxious service.

Doctors grow old betimes; but, if this vague danger is to hang like another Damocles' sword over every head, I, for one, will forswear the obstetric part of my craft, and never attend another parturient woman.

Your obedient servant,

FREDRICK E. MANBY, F.R.C.S., Eng.

—*British Medical Journal.*

CASE OF INVERSION OF THE UTERUS, OF THREE MONTHS' STANDING.*

By J. H. EWART, L.R.C.P.,

Surgeon to St. Mary's Hospital, Manchester.

Elizabeth V., aged 22, married, was attended by a midwife in her first confinement on March 27th, 1874. She was at full term, and the labor went on well to the end of the second stage; there was then, according to her account, some difficulty with the afterbirth, which the midwife endeavoured to overcome by pulling at the cord. Eventually a surgeon was called in, and he and his assistant attended the patient up to the time of her admission to St. Mary's Hospital, Manchester, on the 6th July, 1874, *i. e.*, for upwards of three months. She stated that she lost an alarming quantity of blood at the time of her confinement, and that she had had more or less hæmorrhage ever since. Sometimes she had lost a very considerable amount of blood; the last occasion on which this occurred was about a fortnight

* Read before the Obstetric Medicine Section at the Annual Meeting of the British Medical Association in Edinburgh, August, 1875.

before her admission. Various injections had been given to her for the purpose of controlling the loss; no vaginal examination, however, was made after the confinement.

On admission to the hospital, the patient presented a most blanched appearance. She complained of no pain; the appetite was pretty good; the pulse 100, feeble. A small pear-shaped tumor, bleeding readily when touched, was found in the vagina.

On the following day (8th July), the patient was placed under the influence of chloroform, for the purpose of further examination. The tumor was smaller than I should have expected an inverted uterus to be; it bled very readily; on passing a finger into the rectum and pressing the fingers of the other hand at the same time deeply above the pubes, no intervening substance could be felt. The absence of the uterus from its normal position was further demonstrated by passing a sound into the bladder, and again by the impossibility of introducing the uterine sound by the side of the tumor, the neck of which was tightly constricted. Being now satisfied that the case was one of inversion of the uterus, I tried digital pressure, and persisted in it for some length of time. (I regret I did not notice the time accurately.) Considerable force was used; as much, indeed, as I deemed justifiable. I therefore desisted, with the intention of employing the elastic stem-pessary described by Dr. Barnes in the first volume of the *Obstetrical Transactions*, and in the event of that failing, of incising the neck, as recommended in the same communication. Some of those present, however, thought that further efforts should be made with the hand, and I reluctantly gave my consent. Pressure was accordingly resumed; and after some time the operator announced that he had succeeded in reducing the inversion. It was obvious to the onlookers that the success was due to the exertion of extreme force; and, on examination, two fingers could be passed into a rent in the anterior vaginal wall just where it formed the cervix uteri. There was also some laceration of the perinæum, but at what stage of the proceedings this happened is uncertain. After the operation, the patient's pulse was pretty good, and her general condition was not alarming.

July 9th. She complained of soreness, and a little abdominal pain. Temperature normal; pulse 110.

July 10th. She felt chilly; had no pain. Temperature 98; pulse 104.

July 11th. She felt better. Temperature normal; pulse 100.

July 12th. There was a good deal of whitish discharge. Temperature normal; pulse 100.

August 8th. Since the last note, the patient had not had a single bad symptom; the vaginal rent had healed, a very slight thickening marking its site; the uterine sound passed two inches in the normal direction. The woman then became an out-patient, and preparations of iron were prescribed for her on account of her extreme anæmia. She subsequently went to Southport for

six weeks; and on October 21st, she again presented herself at the out-patient room, looking much improved in color and general appearance. She had menstruated twice since leaving the hospital. The uterus was normal in position; the sound passed rather more than two inches; the os was somewhat flabby, and presented the appearance of a little superficial ulceration, which soon yielded to the application of nitrate of silver; the situation of the vaginal rent could not be discovered.

I saw my patient after some time, when there were signs of commencing phthisis; after this I lost sight of her, and am now unable to obtain any trace of her.

Inversion of the uterus is not a very common occurrence, only fifteen cases having been reported in the English journals since the year 1871. It does not seem necessary to enter into the details of these cases; suffice it to say, that nearly all of them are said to have been due to traction on the cord.

In the BRITISH MEDICAL JOURNAL for January 28th, 1871, Dr. Tylecote reports a case of spontaneous inversion twenty-four hours after labor. Dr. Braxton Hicks relates a similar case in the JOURNAL for August 31st, 1872; and also another where the inversion followed delivery by forceps; and in the first volume of the *Obstetrical Journal* (p. 319) Mr. J. Prankerd narrates a case where inversion occurred during the effort of straining at stool seven days after labor. With regard to the possibility of spontaneous inversion, and for an explanation of this phenomenon, I beg to refer my hearers to Dr. Hicks' paper in the BRITISH MEDICAL JOURNAL for 1872.

The treatment of these fifteen cases varied; most of them were reduced by pressure of one kind or another; two died before medical aid could be procured; in two, the uterus was removed as a last resource in order to save life; and in two others Dr. Barnes succeeded in reducing the inversion by the method to which I have already alluded, and the value of which cannot be overestimated.

Dr. Barnes has clearly pointed out how an inverted uterus *ought* to be treated; it has fallen to my lot to bring before the profession a case which teaches how it *ought not* to be treated; for the satisfactory termination of the case does not prove that the treatment was one to be recommended.

How many women would have recovered after such severe injuries? and what would have been the result if the rent had occurred posteriorly instead of anteriorly? Now, how are such accidents to be avoided? We are directed to use as much force as is justifiable: what is the measure of justifiable force? What amount of strain will the vaginal walls bear? Speaking from my experience in the case here recorded, I would urge that the utmost care—care even approaching timidity—be used in the application of manual pressure to chronic cases, and that, in the event of failure by this method, recourse be had to the air-pessary, or even incision of the neck, inasmuch as such an oper-

ation must be far less serious than rupture of the vaginal wall.—*British Medical Journal.*

ANATOMY, PHYSIOLOGY AND PATHOLOGY.

[Compiled by F. Ieber, M.D., Professor of General and Descriptive Anatomy, Charity Hospital Medical College, and George K. Pratt, M.D., Professor of Physiology, Charity Hospital Medical College.]

ON AN ANOMALOUS CANAL FOR A DEEP TEMPORAL ARTERY SPRINGING FROM THE MIDDLE MENINGEAL ARTERY WITHIN THE SKULL.

(Dr. Gruber: "Virchow's Archiv.," B. lxiii., 1875.)

Twenty-two years ago Dr. Gruber called attention to an anomaly of the origin of a deep temporal artery from the meningea media during its course within the skull, and since that time he has been looking for it, but unsuccessfully. He has, however, found the canal several times in the temporal bones of macerated skulls. In an examination of about four thousand skulls the anomaly was met with twenty-five times: six times upon both sides, eight times upon the right, and eleven times upon the left side. The object of the canal is to permit the escape from the skull of a deep temporal artery which originates from the middle meningeal, and after its escape from the bony canal becomes a supernumerary temporal artery.—W. A., *Medical Times.*

ATMOSPHERIC PRESSURE ON THE JOINTS.

The current opinion has hitherto been that the influence of atmospheric pressure in retaining the two surfaces of a joint in contact is, with the exception of the hip-joint, only exerted on the joints as long as the soft parts, especially the capsule, remain intact, and that a simple opening into the latter is sufficient to destroy it entirely. Prof. Ch. Aeby, of Berne, however, in a preliminary communication to the *Centralblatt*, March 27, 1875, p. 228, announces the startling fact that, according to experiments which he had lately instituted, in the greater number and the most important of the joints in the human body the atmospheric pressure is fully inadequate to retain the surfaces of their constituent bones in contact, even after the division of all the soft parts, including the capsule. This statement is true of the shoulder-, elbow-, and wrist-, as well as of the hip-, knee-, and ankle-joints, and the experiment succeeds in nearly every natural position of the joint, so that the extremity below any particular articulation can be made to swing within its normal limits of flexion, supported by the pressure of the air alone. Thus, as Prof. Aeby expresses it, "when it is found that the arm will hang

completely disarticulated in the shoulder-joint, the forearm in the elbow-joint, or the hand and fingers in their respective joints, no further proof is required that the ordinary teaching with regard to the relation of air-pressure to the joints is completely erroneous." Prof. Aeby will shortly publish his experiments and deductions made from them *in extenso*. We may here add that Dr. Fr. Schmidt (*Deutsche Zeitschrift für Chirurgie*, v. 1874), has lately found by experiment that the atmospheric pressure which retains the surfaces of the hip-joint in contact is not only sufficient to support the lower extremity unaided by muscles or ligaments, but even to carry an additional burden equal to a third part of the weight of the leg.—*Medical Times and Gazette*, May 15th, 1875.

PFLUGER ON SLEEP.

Our existing knowledge about the physiology of sleep does not go much beyond the fact that the phenomenon in question is invariably associated with a comparatively bloodless condition of the brain. Pflüger attempts to take us a step farther by constructing an elaborate hypothesis of a physico-chemical order (*Pflüger's Archiv* x, 8, 9). Starting from the view that the functional activity of any organ, and more especially of a nerve-centre, depends upon a dissociation of living matter, which is itself only a modified form of albumen, the author goes on to speculate that the chemical potential energy which is used up in the formation of every molecule of carbonic acid is transformed into heat. In other words, the atoms of which this molecule consists are thrown into a state of very active vibration. These intramolecular explosions are propagated in all directions along the nerves to the muscular and glandular systems, which are in structural continuity with the nerve-centres. Frogs, deprived of oxygen, are thrown into a state of apparent death, precisely similar to sleep; from this they may be roused by a fresh supply of oxygenated blood. A certain proportion of intramolecular oxygen in the nerve-centres is thus essential to the waking state, since it enables a given number of explosions to occur in an unit of time at a given temperature. But, during the waking state, the energy of chemical affinity is used up much faster than the intramolecular oxygen of the grey matter of the brain can be replaced; consequently the formation of carbonic acid steadily diminishes; and when the number of explosions per unit of time sinks below a certain minimum, sleep ensues. The entire energy of the brain is never really used up; but it sinks to a point at which, in the absence of all external stimuli, it is incapable of maintaining functional activity. This theory may be so developed as to explain most of the phenomena of ordinary sleep, such as its periodicity, etc. The author likewise

attempts to bring the winter sleep of hybernating mammals, and the summer sleep of tropical amphibia, into harmony with it.—*London Medical Record.*

SURGERY.

[Compiled by SAMUEL LOGAN, M.D., Professor of Anatomy and Clinical Surgery Medical Department, University of Louisiana.]

NOTE ON A PECULIAR VARIETY OF HYDROCELE OF THE CORD.

By Furneaux Jordan, F.R.C.S., Eng., Birmingham.

A young gentleman, aged 23, presented himself with an enlargement in the scrotum, a little larger than a walnut, spherical, and well defined, situated midway between the external ring and the testes. The cord was distinctly felt above the swelling, but slightly thickened. The enlargement was translucent, was very moveable, was a little larger in the evening, and a little less in the morning. There was an impulse on coughing, at which time a fine rustling stream of fluid could be felt passing through a second tube from the abdomen to the enlargement. When firm and persistent pressure was made, a stream of similar character could be felt passing from the swelling to the abdomen. There was at no time any sign of protruding bowel. Mr. Jordan believed that, in its anatomical characters, and in its mode of formation, the enlargement was similar to the "encysted hydrocele of the cord," except that a fine tubular communication with the abdomen still remained unobliterated. The treatment recommended was a light truss, to cut off the communication with the abdomen. Mr. Rivington (London) took exception to the nomenclature of the case. It was not an encysted hydrocele of the cord, because it seemed to communicate with the peritoneal sac. It looked like one of the varieties of congenital hydrocele of the cord. Mr. O. Pemberton (Birmingham) thought it was simply a portion of peritoneum containing peritoneal fluid, to which the term hydrocele did not apply. Puncture would have led to a communication with the peritoneal sac. The President thought that it might be diffused hydrocele of the cord where there was fluid in its cellular tissue, communicating with the cellular tissue of the iliac fossa. It thus could be induced with difficulty; and, when the patient stood up, a rushing sound was heard from the fluid making its way back. He thought that it was a misnomer to call it congenital hydrocele, as the tube opened into the peritoneum. Dr. Pirrie (Aberdeen) thought that the case was analogous to one he had met with. In it, there was nothing in the scrotum; but two little tumors could be felt in the cord. They did not communicate with one another; nor did the upper one open into the peritoneum. He therefore believed

them to be two hydroceles of the cord, due to the irregular contractions of the tubular prolongations. He thus held that there was an accumulation of fluid before closure. They differed from Mr. Jordan's case in having no communication with the peritoneum. Mr. F. Jordan was afraid he had been less distinct in his paper than desirable. In the programme it was described as hydrocele of the cord. Mr. Rivington objected to the term "encysted."—*British Medical Journal.*

EXCISION OF THE THYROID GLAND.

By P. Heron Watson, M.D., Edinburgh.

Dr. Watson noticed the opinions of surgical authorities on the subject, and described five cases in which he had operated, one of them being fatal. He recommended attention to the following particulars. 1. The external incision should extend from the larynx to the sternum, if the tumor be large and spread widely in a lateral direction. 2. The vessels—arteries and veins—should be secured as they are divided. 3. The fascia should be opened as widely as the skin; and if the tumor be large, the soft parts may be divided transversely as far as the sterno-mastoid muscles. 4. The delicate investing fascial sheath of the thyroid body should be left undivided until the vessels included in it have been tied. 5. After the mediate ligature of the thyroidal vessels in the cellular sheath, the capsule of the thyroid gland should be opened by stretching through it in the middle line, and the attachments of the goître carefully divided by blunt-pointed scissors curved on the flat. There should be no tearing away of the gland. 6. If bleeding occur after the separation of the tumor, from any of its vascular attachments, the vessels, if they are to be secured, should be tied *en masse* along with the cellular sheath.—Mr. Lennox Browne (London) felt that the operation for goître was one of which he could not approve, simply because it was unnecessary. In none of the cases did there seem to be dysphagia or difficulty in breathing. The first case was typical, viz., a young lady with a goître about the size of a China orange. When an incision was made from the larynx to the sternum, the cicatrix caused a worse deformity than the goître itself. But there were other means of removing the gland equally certain, and leaving no mark. There were four varieties of goître, viz., simple, fibroid, cystic, and fibro-cystic. In the simple, counter-irritation by the red iodide of mercury was sufficient. In the fibroid, injection of iodine into the substance of the gland produced most wonderful results, without any resulting deformity. In the cystic, he used to inject iodine. He now, however, tapped, injected with perchloride of iron, and plugged the canula. In about forty or fifty cases, there had been only

one death. In the fibro-cystic form, setons were of great value; or Maisonneuve's darts of chloride of zinc might be used. He therefore believed that the operation was unnecessary; and, although it was brilliant enough, it was better to try milder measures, remembering the aphorism of Hippocrates, viz., "to cure the patient with as little harm as possible." The President said that he had only seen Dr. Watson's unsuccessful case. The principle, however, seemed a sound one. An improvement he had made was to subdivide the part ligatured, and ligature each half. The larger the tumor was, the greater the risk. If it were large and overlapped the carotid sheath, it was important to tie the tissues with the vessels at such distance that, when the fascial sheath was divided, there should be no risk of hemorrhage from the ligature slipping. He therefore passed an aneurism-needle from the middle to the side, and divided the ligature. He next passed a needle along one of the threads, and, pushing it through the tissues, cut the thread. He then withdrew the needle and tied the ligatures. The gland could then be dissected out without bleeding. In the first case, the gland enveloped the trachea, and overlapped the carotid sheath. The second was extremely vascular, was principally on one side, and largely overlapped the carotid vessels. One vein, during the operation, was so large as to look like the internal jugular. The operations were performed antiseptically. There was no suppuration in one case, and only a little tension in the other. Hemp was used for the thyroid vessels, as the catgut was hardly strong enough. Dr. Thomas Keith, however, had shown him some, kept for five years, which was exceedingly strong, and, by twisting it in strands, it could be used for any purpose. In both the cases operated on there was severe dyspnœa. Dr. Watson said that, perhaps he did not go into symptoms sufficiently, so as to settle, to the satisfaction of some, the propriety of operating. In all his cases, there were difficulty in deglutition, stridor of breathing, and affection of the general health. The operations were certainly not undertaken as a *dernier ressort*, just as it was not the custom in tracheotomy to operate at as late a period as possible. In goître, if they waited until the patient was suffocating, there would be risk; not only of disfigurement, but of death. The disfigurement was large when the incision was made; but, even after twenty-four hours, there was great contraction. In one case, an incision of seven inches contracted to an inch and a half. In regard to Maisonneuve's *flèches*, he had heard of a case where the incision for their introduction was followed by severe bleeding. This was arrested by lint strips. After the separation of each slough, bleeding also took place; so that the patient was in great danger, and ultimately recovered, with various cicatrices, to which no linear one could be compared. He had employed injection with iodine in many cases without admirable results. In cystic goître, whether unilocular or multilocular, he would not operate until he had tried tapping. In all his cases

he had done so. In his first, he had tapped and injected; but other cysts had appeared. He therefore deemed it inexpedient to wait and operate as a *dernier ressort*. In the cases operated on, both his colleagues and himself were satisfied as to the necessity of operation.—*British Medical Journal.*

TWO CASES OF ANEURISM, ONE OF THE CAROTID AND ONE OF THE FEMORAL ARTERY, TREATED BY THE WIRE COMPRESS.

By J. Dix, M.R.C.S., Eng., Hull.

The wire compress here spoken of was introduced to the profession by Mr. Dix ten years ago, as a substitute for the ligature. The full details of the method, with illustrative cases, were published in the *Edinburgh Monthly Journal* for September, 1864. At that time he had only used it for wounded blood-vessels; but he also spoke of its applicability to arteries in their continuity, and explained the process for aneurism. He now related two cases in which it was so used on the carotid and on the femoral artery. Both were successful. In the latter, the incision, five inches long and an inch and a half deep, healed by first intention. The operation is as follows: The artery is cut down on, and the wire is drawn under the artery by the aneurism-needle in the usual way. Each end of the wire is then attached to a needle, and so brought out through the tissues by the side of, but clear of the wound, so that the ends are about half an inch from each other. A piece of cork is placed between the points of exit of the wire, and pressed firmly down in the course of the artery; and over this the wire is tightly twisted till the circulation is stopped. In each of the cases related, a feeble current of blood was admitted into the sac for three days, and only on the fourth day was it entirely cut off. In twenty-four hours afterwards, consolidation of the aneurism had taken place. The wire is removable at any time, and in these cases was removed on the sixth and seventh days. This the author considered one of the greatest advantages of his method, as it allows the gradual establishment of the collateral circulation, and greatly diminishes the risk of gangrene, if not removing it altogether. It does not cut the inner coats of the artery, nor cause ulceration of its outer coat: its blood-channel is intact, and hemorrhage cannot possibly occur. Bleeding (the greatest danger from ligature) is entirely abolished; and gangrene, the next most fatal risk, is much diminished. The wire compress has other advantages over the ligature. Thus it is not a foreign body in the wound, and therefore does not excite suppuration and impede breathing. It is applicable to all arteries alike. Dr. Pirrie (Aberdeen) said that a great deal had been brought forward on acupressure. Since 1854, he had used no other method of arresting hemorrhage in

any operation, unless in those on the tongue, upper jaw, and deep tumors of neck. His belief in it was unshaken; and acupressure, defined as "metallic compression, removable at pleasure," he believed to be one of the greatest improvements in modern surgery. In regard to its use in aneurism, there was no time to discuss it, although he would have been most happy to do so.—*British Medical Journal.*

TRACHEOTOMY IN CROUP AND DIPHTHERIA.

By George Buchanan, M.A., M.D., Glasgow.

This paper contained an argument for operating on the suffocative stage and type of the above diseases founded on Dr. Buchanan's own experience, which was summarised as follows: total cases of tracheotomy in croup and diphtheria, 46; cured, 17; died, 29; croup, 16 cases—cured, 6; died, 10; diphtheria, 30 cases—cured, 11; died, 19.—*British Medical Journal.*

BILIARY CALCULI EXTRACTED THROUGH THE ABDOMINAL WALLS.

M. Brousson, of Nîmes, describes the following case: A patient was suffering from a painful, ill-defined tumor, situated in the right flank, between the spine of the ileum and umbilicus. The tumor was taken to be a suppurating ovary, and was opened with the caustic Vienna-paste. The tumor was found to be due to an accumulation of biliary calculi, of which no less than forty were removed. In three months the patient had recovered.—*Journal de Médecine*, August, 1875.

TWO CASES OF REMOVAL OF OMENTAL TUMOR FROM THE SCROTUM.

By Prof. J. F. Minor, M.D.

Reported by E. N. Brush, M.D.

It is believed that the rarity of cases similar to the two following, and the operative procedures undertaken for their relief, will render a detailed account not uninteresting:

Case I.—E. T. D., a druggist of Jamestown, N. Y., applied to Dr. J. F. Miner in October, 1873, for relief from what he and the physicians hitherto consulted had supposed to be enlarged testicle. From infancy he had been troubled with an enlargement of the scrotum on the right side which had increased recently as Mr. D. had increased in flesh. The patient was a healthy young

man, aged about twenty-eight, weighing two hundred pounds. There was no evidence of any hereditary disorder, the tumor was not painful, and was only troublesome on account of its size and weight. There was no decrease in size in the recumbent position, nor could the growth be returned to the abdominal cavity, though it evidently extended into the inguinal canal.

The patient secured a private room at the Buffalo General Hospital, and made arrangements to have the tumor removed.

October 15th. The patient being placed under ether, opportunity was offered for a more careful examination than had hitherto been afforded. By careful manipulation the testicle, of normal size and apparently healthy, could be isolated from the growth, but the exact character of the tumor could not be diagnosed.

Drs. Hazeltine and Barnes, who were present, concurring in the propriety of the procedure, Dr. Miner carefully cut through the coverings of the tumor, making an incision about four inches in length, in line with the inguinal canal. After the walls of the scrotum were divided, a thin transparent sac was discovered (afterwards found to be a reduplication of peritoneum) containing what was apparently a fatty tumor of considerable size. This sac was opened and an effort made to remove the tumor. It was then discovered that it was a protrusion of omentum which had probably descended with the testicle in infancy, and had increased in size as the patient had grown fleshy. Following the protrusion up the inguinal canal it was found firmly adherent on all sides of the lower portion of the canal. The cord and testicle were found in a healthy condition. The mass of omentum had become unfolded to such an extent that it was impossible to return it within the scrotum, and the adhesions precluded the possibility, if desirable, of returning it to the abdominal cavity. Nothing remained, therefore, but to cut it away. A stout ligature was thrown around the mass at the lower end of the canal and the omentum cut away with scissors. The ligature controlled all hemorrhage and no vessels were ligated.

The incision was closed, leaving the lower angle open for drainage, warm water dressings applied and the patient placed in bed.

On recovering from the anæsthetic the patient complained of considerable pain, and one-fourth grain morphia was given hypodermically.

Oct. 16th. Some pain complained of during the night—pulse is 120.

17th. It was found necessary to draw the urine. Pulse 120. Anodynes continued to relieve pain.

18th. Pulse 114. Less fever, skin moist, some discharge from the wound.

20th. Scrotum swollen and painful; a free incision at lower portion gives exit to considerable pus and some debris of tissue. No abdominal tenderness.

21st. Pulse 96. Restless and imaginary. Sutures removed. The wound is united in the greater portion of its extent.

22d and 23d. Delirious. Pulse 120 to 130. Temperature 103°. Is given chloral hydrate which produces some sleep.

24th. Improving. From this date until his discharge the patient continued to improve, and on the 9th of November he left for his home.

The mass of omentum removed weighed two and one-half pounds. Its dimensions were not taken, but when unfolded it covered a large space.

Case II.—J. B——, of Mt. Morris, was referred to Dr. Miner by Dr. W. Potter, of that place. The patient is sixty-five years of age, in apparent good health, and weighed three hundred and twenty pounds. Has increased in flesh to a large amount during the last eight years.

He had never had hernia, and previous to his increase in flesh never noticed any growth in his scrotum. Eight years ago he began to notice an enlargement in the right side of the scrotum, which was at first pronounced variocele, but no palliative treatment was undertaken.

July 21st. The patient having been placed under the influence of ether, Dr. Miner removed the tumor in the presence of Drs. Bartow, W. W. Miner, and the writer. The mass was found inclosed in a peritoneal envelope as in the first case, and firmly adherent to the margins of the inguinal canal. After satisfying himself that no intestine was included in the mass, a ligature was carried around it as high up as the adhesions would allow, and the tumor cut away with scissors.

Upon examination of the mass, a concretion was found imbedded in its folds the size of a walnut, of a hard cartilaginous nature. Mr. B. had called attention to this previous to the operation, and said that it first made its appearance when straining at stool one day, accompanied by slight pain, which soon passed away. The omentum removed did not differ from that seen in fleshy persons in the natural position; it was several inches in width and length, and weighed a trifle under three and one-half pounds.

Mr. B. did well until the twenty third, when he seemed stupid, but was easily aroused and answered questions in a clear manner. On the 24th the stupor had increased, and was accompanied by evident paralysis of the lower limbs. The urine had to be drawn and the patient assisted whenever he wished to move.

It may here be stated that some weeks previous to the operation Mr. B. had been paralyzed on his left side; from this he had, however, apparently nearly recovered.

On the 25th pain and tympanitis appeared in the abdominal region, which gradually increased, with nausea and vomiting, and on Monday, the 26th, the patient died of peritonitis. It is, however, safe to say that this result would not have followed

had the patient been a younger man, and in a better condition to stand the operation. It was hoped that the adhesions at the abdominal ring would prevent the inflammation from extending in the abdominal cavity. It is frequently the case that large portions of omentum have to be removed in operations for hernia, but I am not aware of the report of a case similar to the two preceding ones. That so large a mass of omentum should form in the scrotum seems at first a little remarkable, but from the nature of the two cases, their tendency to obesity, it could be surmised was it known that a portion of omentum had descended to form the nucleus for further growth.

The surgery of omental growths is not as yet clearly defined, and the report of these two cases may be of value in elucidating the subject.—*Buffalo Medical and Surgical Journal.*

DUMB BELL CALCULUS.

Dr. Conner exhibited to the Cincinnati Academy of Medicine, September 13th, 1875, a calculus which he had removed a few days since. It was of a perfect dumb bell form; one extremity lay in the bladder, the other in the dilated prostatic form of the urethra.—*The Clinic.*

BURNS AND SCALDS.

After an interesting analysis of 204 cases of burns and scalds, treated in the Boston City Hospital, by G. W. Gay, M.D., etc., he writes as follows of the

Treatment.—The great variety of substances used in this hospital and elsewhere as a primary dressing for burns proves conclusively that no one application is clearly above all the others in value. Every one allows that the first dressing should be mild and soothing, and capable of affording a protection to the injured surface; but which of a dozen or more substances used best fulfils these indications is a disputed point.

Carron oil has been and is the favorite local remedy for these accidents in this hospital. Aside from its disagreeable odor, it is an excellent application, and in many cases may be continued till complete recovery ensues. It is best applied on soft cloth or sheet lint, which should be kept saturated, without being removed oftener than is absolutely necessary. The next most popular dressing is a paste made of molasses and pulverized gum arabic. It is most convenient for those parts of the body which need not come in contact with the clothing, as the trunk and lower extremities. These should be protected by cradles, and the application made two or three times a day with a soft brush.

It is a good dressing in those cases not attended with a profuse discharge.

White paint, made of carbonate of lead and linseed oil, has been used a number of times with excellent results. In one case of a scald of the hand and arm in which this dressing was applied, it was very agreeable before the epidermis was removed, but so intensely painful afterwards that it had to be given up. The odor is certainly preferable to that of carron oil, and it is a cleaner dressing. Dr. Gross speaks of the paint in the highest terms as being the best local application he has ever used. He has never seen any poisonous effects from the lead in an experience dating as far back as 1845. He used it continuously for five weeks on a negress with an extensive burn of the neck, chest and abdomen, consuming more than a quart of lead without any bad effect. He believes it perfectly safe, whatever the extent or depth of the lesion or the age of the patient. It acts by forming a varnish to the affected surfaces, and obtunding the nervous sensibility. It should be applied with a brush, and covered with a layer of cotton batting.

Glycerine, glycerine and molasses, glycerine and mucilage, and lead wash and opium have been used in a few cases, but they have no particular advantages over other remedies. The same may be said of the powders of oxide of zinc.

The late Dr. Derby made use of the dry earth treatment in a few cases of burns; but it never became a favorite method of treating these wounds or any others in this hospital. It is by no means a cleanly or convenient dressing. It hides the wounded surfaces, and forces the surgeon to depend in a great degree upon the sensations of the patient, which are seldom to be trusted, as an indication of his condition.

We do not know whether Billroth's favorite dressing has been used here. It consists in applying compresses wet in a solution of nitrate of silver, ten grains to the ounce of water, to the parts constantly. Gross speaks well of it in light burns attended with much smarting and pain. Billroth recommends it highly in all degrees of these injuries.

The treatment in the later stages of burns is the same as that for ordinary granulating surfaces. Among the most common agents used in this hospital are weak solutions of chlorinated soda, benzoated oxide of zinc ointment, and simple cerate. Strapping with ordinary adhesive plaster is beneficial, not only to repress exuberant granulations and hasten the healing process, but also to keep the cicatricial tissue soft and pliable, and in a measure to prevent contraction. It should be continued some time after the wounds are entirely healed.

Reverdin's process of skin-grafting has been tried in numerous instances with fair success. In the favorable cases the recovery was hastened, and the cicatrix quite as firm and durable as in those cases not so treated.

In a few cases it was impossible to heal the wounds during the

time the patient was allowed to remain in the hospital. These patients became debilitated, the recuperative powers exhausted, and they were discharged with the hope that a change of air and surroundings might improve their general condition sufficiently to allow the healing process to become reëstablished.—*Boston Medical and Surgical Journal.*

PECULIAR LOCATION OF A CYSTIC TUMOR.

Dr. Conner said, at the meeting of the Cincinnati Academy of Medicine, held September 13th, 1875, that he had lately seen a case with Dr. Swagmeyer, of a male child seven months of age, who was well nourished but who had severe pain in defecation, and who was supposed by his parents to have prolapse of the rectum. On examination under ether, no prolapse, but a large tumor about the size of a pigeon's egg was found on the posterior wall of the rectum. It was tolerably hard, but yet gave some indications of the presence of fluid. An exploring needle was introduced and drew off a considerable quantity of serum. The peculiarity of this case to the speaker was the occurrence of a cyst in this region.—*The Clinic.*

FRACTURE OF BOTH PATELLÆ—DOUBLE FRACTURE OF RIGHT PATELLA.

By Dr. Wendover, House Surgeon of Roosevelt Hospital, N. Y.

The fractures occurred as the result of sudden and violent muscular contraction. The man had slipped and brought unusual strain upon the left leg; the patellæ gave way, and in his efforts to save himself from falling brought his right leg to the rescue; but the undue exertion produced a double fracture of the patella of that limb, and his efforts at maintaining the erect posture ceased. He was a man of good habits, and apparently healthy, but previous to this group of accidents had suffered from fracture of the leg three times. The simplicity of the dressing was worthy of note, especially when the result obtained entered into the estimate. For the fractured edges of the left had been held in almost perfect coaptation, and of those of the right the edges of the lower fracture were closely in contact, while of the upper they were not separated more than three lines. The fractures were all transverse. The dressing consisted of two tabs, one carrying a buckle, which were secured by means of adhesive plaster, one upon the thigh and the other upon the leg. The limb was then placed upon a straight posterior splint, after which the fractured edges were approximated, a small, firm roller

placed above and below the patella, and then secured by means of the tabs first applied to the limb.—*Medical Record.*

GONORRHŒA—PERINEAL ABSCESS—SYMPTOMS OF PYÆMIA.

The special interest in this case was found in the plan of treatment. The patient had an attack of gonorrhœa. In the progress of the case a swelling was noticed in the perineal region, which was opened, and a free discharge of pus obtained. Not long after the patient was seized with chills, his temperature arose, profuse sweating followed, and this train of symptoms was also accompanied by other evidences of grave constitutional disturbance. The treatment consisted in use of a pure tonic stimulant and nourishing course; but more special stress was laid upon the use of *morphine* in such doses as to allay all irritation. The patient was kept under the gentle, steady, quieting influence of the drug. This plan was regarded by the visiting surgeon with much greater favor than depending upon *quinine*, as is not infrequently done to a very great extent. The patient recovered.—*Medical Record.*

ON THE TREATMENT OF PHAGEDENIC GANGRENOUS VENEREAL SORES.

By D. B. Simmons, M.D.,

Chief Surgeon of the Ken Hospital, Yokohama, Japan.

Few who have had any considerable private or hospital practice are not acquainted with the difficulties often experienced in arresting the destructive progress of what are known as phagedenic gangrenous venereal sores.

Within the last two years several cases which will admit of this classification have come into the hospital for treatment. The hot iron, nitric, chromic, and carbolic acid were all tried in turn, as well as "Ricord's born enemy of phagedena," with what we believe to be the average rate of success.

The last four cases, and one especially, which we shall refer to, were almost entirely treated, however, by, if not a new process, one which was productive of such satisfactory results as to warrant us in earnestly recommending its trial. *This consists in the continuous immersion of the diseased part in hot or warm water.* The case referred to had been treated, before falling into our hands, by the usual means for nearly two weeks, and, though not progressing so rapidly as at first, was still advancing. Both labia, minora and majora, the fourchette, clitoris, and portions of the urethra had disappeared, and all the region occupied by the external organs of generation had been converted into an

immense irregular cavity, discharging an unhealthy, sanious, and very fetid pus. The patient was also suffering much pain, especially if the parts became in the least dry. A sitz-bath of the ordinary size and form is what is required. In this is placed a cushion, or large bathing-sponge, to render more tolerant the long continued position in the tub, required for obtaining the more satisfactory results. In the case referred to, the matter seemed to be increased by the use of the bath for thirty-six hours, when it began to change in character. Instead of the sanguino-serous pus which was discharged from it before, it had assumed a more healthy, "laudable" form. The ragged edges sloughed off, and their dark red or purple color presented a bleached-out appearance. From this time the progress of the disease appeared to have been arrested.

Through the dirty gray slough at the bottom granulations began to appear, and the healing up of the part, as far as the extensive loss of substance would admit, was completed in two or three weeks. As uncomfortable as the position was, the patient would not remain out of the bath for a moment longer than necessary, on account of the great relief it afforded from the burning, smarting pain.

We found, after the change had commenced for the better, that it was not necessary to keep the patient so continuously in the bath, but only on alternate hours. In the interval, iodoform was sprinkled freely over the part. It is our opinion that the destructive agency is to be found in the peculiar or specific character of the discharge, and that the water simply removes or dilutes it, so as to destroy its action, the same as it would with a caustic. We do not see why this explanation is not as true and satisfactory as that the matter from a soft chancre has specific qualities, and is capable of reproducing itself, under favorable circumstances, to almost any extent.

A very bad case of multiple chancres in a female, of an inflammatory type, was treated by us in the same manner, with the same satisfactory results, about the same time.

In the male, when the organ is sufficiently large or long, we have found its immersion in a tumbler or cup of water answered the same purpose.

We now adopt this plan in the treatment of all soft chancres that are troublesome, and are satisfied that if it is properly carried out they may often be cut materially short in their duration.

All are acquainted with the suddenness with which soft chancres often get well after long and varied modes of treatment. We believe this to be consequent upon a change in the character of the discharge, or in its irritating corrosive action, which allows of the natural healing of the wound. The same is practically effected by the dilution or removal of it by the water.

Irrigation, we have no doubt, would answer the same purpose, and could be arranged so as to subject the patient to far less inconvenience and discomfort.

We think, however, that the water should be at as high a temperature as possible in either case.—*Medical Record.*

RIGAUD ON THE TREATMENT OF STRANGULATED HERNIA.

M. Rigaud (of Nancy) read a note at the meeting of the Société de Chirurgie on June 9, on some points of the manipulative part of the operation for strangulated hernia. It is impossible, he said, to lay down invariable rules for this operation. Those which anatomists have established—to divide the integuments layer by layer—are defective; for the latter have undergone such modifications that it is impossible to recognise them. The only indication which it is necessary to formulate, is to come down on the bowel without perforating it; it is only in its vicinity that prudence is necessary. M. Rigaud has therefore for some time adopted the following plan. When he has incised a certain number of layers, and he thinks he is in the neighborhood of the intestine, he abandons the bistoury, and tries to make a slight fold on the surface of the tumor by seizing it between the thumb and first finger, previously dried and covered with starch powder. If he feel a globular swelling below this fold, he is not on the intestine, and again has recourse to the bistoury. He afterwards again tries the above plan; and if, below the new fold he has made, he find a cavity instead of a globular tumor, he concludes that he is down on the intestine. Another way of assuring himself that he sees the intestine, is to touch it lightly with the bistoury; the muscular layer being provided with a large number of vessels, a somewhat large quantity of blood escapes from it. This wound is entirely without danger. These precautions greatly simplify the operation for strangulated hernia, and M. Rigaud lays great stress on them. This surgeon never employs chloroform, for the involuntary movements which the patient makes under the influence of this anæsthetic may cause perforation of the intestine. It is only the first stage of the operation which is painful; and that is so brief, that the majority of patients, sustained by the hope of speedy relief, support it well.—*London Medical Record.*

TREATMENT OF CZÆNA BY INJECTIONS OF CHLORAL.

M. Créquy reports the cure of an obstinate case of ozæna by the injection of a solution of chloral. He simply made a siphon of an india-rubber tube by putting one end to the injection and the other well up into the nasal cavity. The disease had resisted injections of tannin, phenol, corrosive sublimate, etc., but was cured in a short time by this method.—*Bull. Gén. de Therap.*

NOTICES OF NEW BOOKS

Cyclopedia of the Practice of Medicine. Edited by Dr. H. von Ziemssen, Professor of Clinical Medicine, Munich. Vol. III. *Chronic Infectious Diseases.* 8vo., pp. 672. New York: William Wood & Co.; 1875.

As this is the first of the series which has been sent us for notice, we have nothing to say of the previous volumes, or of the general plan and merits of the work. The first article, running through about 300 pages, is on Syphilis, by Prof. Christian Bäumler, of Freiberg. In this connection, those local venereal ulcers which lead to no constitutional symptoms are not taken into consideration, for the author adheres strictly to the dualistic theory of the nature of venereal sores. This theory, with suitable explanations, accounts for all the phenomena in a satisfactory manner, while the other, at the best, leaves many points unexplained. We purpose here only to notice some questions whereon writers differ. One of these relates to the history of the disease, on which the author dwells somewhat at length and refers to various authorities. The point at issue is particularly whether the disease was introduced into Europe by the followers of Columbus on their return from his first voyage to America. While he admits that there exists no authentic and express account of constitutional syphilis previous to the siege of Naples, in 1498, he quotes passages from earlier writers descriptive of symptoms similar to those of this disease. On such authority, he inclines to the belief that the malady existed in the East and in Southern Europe long anterior to this period.

To us, on the contrary, the evidence is not satisfactory. The symptoms of constitutional syphilis are certainly not less striking than those of leprosy, of which accounts have come down to us from a remote antiquity, so precise that we are at no loss to identify them with those of the disease so known at the present day. Besides, syphilis is not only hereditary, like leprosy, but in a much higher degree contagious; and there is no reason to suppose, on moral grounds, that syphilis would have been less prevalent in Europe and Western Asia before the spread of Christianity, or before the discovery of America, than subsequently. The fact that the disease then became very prevalent

in Europe, and for the first time attracted general notice—the earliest precise notice, in fact, which reaches us—establishes a presumption that the writers at the end of the fifteenth century were describing a disease new to themselves, which the vague testimony to the contrary fails to controvert in our mind.

As to the *materies morbi* of syphilis, the author rejects both the fungus theory of Salisbury and Hallier, and the corpuscular theory of Lostorfer, on the ground that the corpuscles are found also in non-syphilitic blood, and that other observers have not confirmed the existence of the syphilitic fungus.

The question of the possibility of infecting the lower animals has been settled only so far as regards two guinea pigs and a single kitten, in the author's knowledge. Numerous other experiments have failed, so that the conclusion practically remains that mankind alone are liable to syphilis.

The subject of the transmission of syphilis by vaccination possesses extraordinary interest at the present time, on account of the prevalence of small-pox, and some very interesting information is furnished from recent authorities. It is undeniable that a number of deplorable accidents have occurred, but we agree with the author, that they might have been obviated by proper attention to the method of vaccination. Evidence of this statement is afforded by the vaccination of 57 healthy children in the St. Petersburg Foundling Asylum, in the years 1865-7, from 11 children known to be syphilitic. Their immunity is attributed to the care of the vaccinator in avoiding mixture of blood with the lymph. This care should always be exercised, whether we are sure or not of the purity of the source of the vaccine; for, in vaccinating several subjects at the same time, one of them, being syphilitic, might infect those vaccinated after himself, unless the operator take pains to cleanse his lancet after each scarification, before applying it to the vaccine. The rule should be, to avoid the drawing of blood in opening the vesicle, and even to reject the first drop, as it may be mixed with serum; then to wipe carefully the lancet after each application of the vaccine, and after each scarification. The same caution, of course, should be observed in the use of any other form of vaccine. By such precautions, we think vaccination could safely be performed, without regard to the source of the vaccine; but at the same time, we hold that sources known or suspected to be

impure should be rejected, in order to avoid censure, if for no better reason.

With regard to the curability of syphilis, he speaks as follows: "We now know with certainty that a patient may recover entirely from syphilis, and that, too, in a comparatively short time; for the recurrence of cases of second infection, some years after first contracting the disease, has been abundantly proved. We know, also, that a spontaneous cure of syphilis may take place at any stage."

Nevertheless he is not in favor of leaving cases to nature in any stage. In the earliest recognizable stage he would endeavor to arrest the disease by destruction of the local lesion with caustic, and by a mercurial course. By such treatment he maintains, on strong authority, that the subsequent symptoms may be averted.

As prophylactic measures, he advocates the supervision of prostitutes by governmental authority, their regular inspection, their enforced seclusion when infected. He also recommends the frequent examination of soldiers and sailors, the latter especially before entering and leaving a port, and the punishment of persons who knowingly infect others. We fully agree that such provisions are highly desirable, and perhaps practicable under European governments, but doubt much that they could be made effectual in a country like ours, where opposition would certainly be encountered, not only from general impatience of legal control, but from a sort of religious idea, quite prevalent, that the regulation and toleration of prostitution implies an unwarrantable compromise with immorality.

The treatment of syphilis by the so-called method of *syphilization* is condemned as not only unsound in theory, but as tedious, annoying, and inefficacious—in all of which we fully concur.

Prof. Otto Bollinger, of Munich, contributes to the department of Infection by Animal Poisons. The subjects treated are Glanders, Anthrax, Hydrophobia, the Foot-and-Mouth Disease, and Infection by the Bite or Sting of Poisonous Animals.

As regards the nature of the morbid poisons in the several diseases, the author rejects the idea of a specific fungoid or animalcular cause in connection with glanders, hydrophobia, and the foot-and-mouth disease. In the first of these three the virus is contained in the pus and other corpuscular elements suspended in the animal fluids; in hydrophobia, in the saliva and froth and blood;

in the last, in the contents of the vesicles, the blood, and all the secretions and excretions.

On the other hand, in anthrax he maintains that the poison is represented by specific bacteria, which he regards as fungoid in their nature rather than animalcular. These are found in the blood in vast numbers—as many as eight or ten millions in a single drop.

The action of these bacteria is supposed to be that of preventing the oxygenation of the blood, on account of their excessive demand for oxygen in the process of growth in the blood; consequently animals affected with this disease die with symptoms of asphyxia, and the blood after death is found of a very dark color, with determination to the lungs.

It must be observed that the author uses the terms *anthrax* and *carbuncle* in a sense quite different from their common acceptation in our country. He means *charbon* or *malignant pustule*, and not the furnuculoid inflammation and sloughing of the cellular tissue, to which we apply the terms anthrax and carbuncle. As we have no other convenient term to apply to the non-infectious and less serious affection, it would seem preferrable that the infectious and deadly disease treated in this article should be styled charbon or malignant pustule, in which terms there can be no ambiguity.

As regards the origin of hydrophobia, he rejects the idea of its spontaneous production under any circumstances. Among dogs it is found more usual in males, and has been ascribed to want of gratification of the sexual appetite; but the truth is, that males preponderate among dogs in an equal degree, on account of the destruction of the females at an early age.

The liability of herbivorous animals has been established by experiments, not only to receive this disease by inoculation, but also to furnish an active virus.

The consideration of these four diseases in this volume has reference to the affections of both man and the lower animals, and is very particular and full, occupying more than 200 pages. On the other hand, the subject of Infection by the Bite or Sting of Poisonous Animals, is disposed of in about 20 pages, in which the insects and reptiles usually reckoned under this head all receive brief mention. Considering the great frequency of the latter affections, and the comparative rarity of the former, we

think undue prominence is given to one class to the neglect of the other. The reason is to be found, doubtless, in the fact that the author is a specialist, and has filled chairs in the Veterinary Schools of Zurich and Munich.

The last hundred pages of the text are occupied with articles on Diseases from Migratory Parasites, by Prof. Arnold Heller, of the University of Kiel. Under this head only three parasites are considered, viz., the Echinococcus, the Cysticercus Cellulosæ, and the Trichina Spiralis. The Tænia Mediocanellata is excluded, probably from the fact that it does not infest mankind in the larval state. The existence of the Cysticercus Tennicollis in man is not admitted, though this is asserted as an occasional fact by Aitken. These subjects are treated amply and lucidly, and are illustrated by about forty wood-cuts—the only ones in the volume.

S. S. H.

Transactions of the Medical Association of the State of Alabama. 28th Session, 1875. 8vo., pp. 360.

The beginning of this bulky volume, to the extent of 48 pages, is occupied with the minutes of this year's session, which took place at Montgomery, April 13th, 14th and 15th.

The address of the President, Dr. J. S. Weatherley, follows, his subject being State Medicine and Preventible Diseases, which was suggested by the fact that the State Medical Association of Alabama has been constituted by the Legislature as the State Board of Health. Under the head of Preventible Diseases he reckons, as is usual, the zymotic maladies, and also malarial and scorbutic complaints, and proceeds to estimate their ravages and to point at modes of repression. But he does not confine himself to physical diseases exclusively. He asserts his conviction that many of the moral maladies that afflict humanity are preventible by means addressed to the moral sense; and these, agreeably to the doctrine of evolution, will transmit their influence to future generations.

In the absence of the orator appointed for the occasion, and also of his alternate, Dr. George A. Ketchum was called on to supply the annual oration, which he did very acceptably by

reading an address on Medical Ethics, which had been delivered on a previous occasion.

Dr. E. P. Gaines contributes an able paper on Tuberculosis and Scrofulosis, in which he takes the ground that the two affections are quite distinct in their pathology, and finds himself in opposition to most authorities writing in the English language. The distinction drawn between the two may be briefly stated as follows: the former is characterized by the formation and deposit of a certain foreign product called tubercle, the latter by hypertrophy and inflammation of lymphatic glands, without any deposit of foreign matter. As evidence against their identity, the fact is adduced that tubercular consumption is not more common with scrofulous than with non-scrofulous subjects; also that, while tubercular phthisis is becoming more prevalent, scrofulous inflammations are diminishing in frequency. Attention is also directed to the faulty conformation of scrofulous children, as a contrast to the physical and mental development of those destined to fall a prey to pulmonary consumption.

In regard to the two commonly accepted forms of tubercle—the yellow and the miliary—he applies the term only to the latter, and quotes recent authorities to prove that the former is but a cheesy degeneration of products of inflammation in the localities where this substance is found. This view is in harmony with the doctrines of recent German pathologists, which are now rapidly gaining ground in our country.

An interesting article is contributed by Dr. W. D. Bizzell, of Mobile, on the Climate of the United States, considered with reference to Consumption and Pneumonia. This is divided into two parts, in the first of which he treats of the geographical distribution of the two diseases. The greater prevalence of the former in the more Northern and Eastern States is attributed to their lower temperature, this being the sole factor constantly different; while the greater prevalence of the latter in the Southern, and especially the Southwestern States, is attributed to their greater exposure to malarious influences. His position is fortified by statistics drawn from the last census, showing the rates of mortality from pulmonary consumption and pneumonia in the several States; and this is compared with their average temperature to illustrate the effect of climate on consumption, and with their relative malarial influences to illustrate the prevalence of pneumonia.

Dr. B., however, does not lose sight of the fact that relative humidity is an important factor in the production of pulmonary consumption, as evidenced most clearly in the contrast between Maine and Minnesota, which lie in about the same latitude, with a similar average temperature, but varying greatly in humidity of atmosphere.

The second and much larger part of the paper is devoted to Health-Resorts for Consumptives in the United States. We cannot follow him in his details of description and comparison of the many sanitaria, which have had their merits brought more or less prominently before the public for several years, but can recommend the paper to those desirous of information on these points. He is particularly commendable for discretion in advising that careful consideration be given to the condition of the invalid, in selecting a climate, and for the observation that benefit is usually derived from chosing a climate at contrast in such respects as temperature and humidity with the one where the disease was contracted.

Malaria, its Nature and Mode of Spread, is the subject of an article by Dr. Benj. H. Riggs, of Selma. His assertion that malarial diseases belong to the infectious class needs some explanation, but it is not given. He can hardly mean that these maladies are communicated from one individual to another, according to the ordinary acceptation of the terms contagion and infection; but that they are produced by living germs, which gain entrance to the organism in some manner and then set up morbid action.

Though observers cannot agree upon the natural history of these supposed germs, or whether they have in reality been discovered, the prevailing opinion in favor of the "germ theory" requires that malarial fevers be attributed to a cause of this nature, and probably vegetable rather than animal. Such is the opinion of Dr. Riggs.

A report is made on Recent Progress in Gynæcology, by Dr. F. M. Peterson. In regard to the injection of styptic iron salts into the cavity of the uterus, as proposed by Dr. Robert Barnes, he speaks adversely, on account of disastrous consequences which have been reported. The similar use of tincture of iodine is regarded as safe, and calculated to obviate danger of septicæmia. Transfusion of blood is a measure which he expects to become popular within a few years for hemorrhages in general, and *post-partum* hemorrhage in particular. In vaginal injections

it is recommended that no orifice be allowed at the extremity of the nozzle, in order to obviate danger of throwing the liquid through the uterus and fallopian tubes, and thus exciting metro-peritonitis. Normal ovariotomy, so-called, has been proposed by Dr. Battey, of Georgia. This is done to prevent impregnation, as a remedy for certain complaints which are not mentioned. The operation is not approved by Dr. Peterson. The treatment of myo-fibroid tumors of the uterus by hypodermic injections of ergotin seems to have produced favorable results in some instances. It is supposed to act by causing such contraction of the organ as to interfere with the nutrition of the tumor, and thus to lead to its disappearance. Allusion is made to the report of three fatal results from the repeated use of tents in dilating the cervix uteri, and the caution is made that they ought not to be used on successive days.

Dr. James Guild, in an article on Lithotomy, claims priority in the median operation. His claim can be allowed only as regards some details, for a median operation was devised in Italy more than 350 years ago, and called *apparatus major*, from the number of instruments used. A recent modification, quite similar to Dr. Guild's, is accredited to Mr. George Allerton, an English surgeon. It is quite possible that each may have worked out his plan quite independent of the other, and both have adopted almost precisely the same method.

The closing paper of the volume is a History of the Small-Pox Epidemic in the City of Mobile, 1874–5; to which are added Mortuary and Meteorological Tables for the year 1874—by Dr. Jerome Cochran, of Mobile. This occupies more than 120 pages, and treats the subject in all its phases, from statistics to a discussion of the nature of the variolous poison, together with a description of the measures used in the repression of the disease.

The general standard of the papers in this volume is high, and notwithstanding its bulk, it compares very favorably in quality with the published Transactions of other State Medical Societies. The medical men of Alabama in general, and of Mobile in particular, have cultivated a commendable *esprit de corps*, which might profitably be imitated by those of our State and city, and which enables them to exercise a commanding influence on the public within their appropriate sphere, and at the same time make valuable contributions to the annals of our science.

S. S. H.

Report of the Board of Health of the City and Port of Philadelphia to the Mayor, for the year 1874. 8vo., pp. 402.

A comparison of the sanitary systems of Philadelphia and New Orleans shows more differences than agreements, with the advantage in some respects on one side, in other respects on the other. It appears that the Board of Health at Philadelphia, in addition to having charge of the Quarantine, the Lazaretto, and the Municipal Hospital, have control of the street cleaning and scavengering of the city. The work is done by contract, under supervision of the Board, and the expense is provided for in the city budget. This we believe an improvement over the plan in use here, where no contracts are made, but the work is done by the Department of Improvements. On the other hand, there appears to be no system of annual house to-house inspection in Philadelphia, as here. This plan leaves nuisances on premises to be abated through private complaints, and consequently the larger proportion are not likely to come to light. Families will tolerate very offensive nuisances at home, to avoid expense, and people are reluctant to complain of their neighbors unless actuated by spite. These visits serve not only to discover nuisances, but also to gather a variety of important particulars about all premises in a systematic manner. Besides, familiarity with these domiciliary visits prepares people for concurrence in such sanitary measures as may be required in presence of infectious and epidemic diseases.

A large portion of the volume is occupied with vital statistics and explanatory remarks. The tables are greatly varied and carried out with minuteness, giving evidence of great industry on the part of the health officer and his assistants. A number of diagrams illustrate these statistics, comparing particulars with each other, and in some of them with meteorological observations also. These were designed by the Secretary of the Board, Dr. W. H. Ford, and exhibit the variations by the usual lines drawn through indicated spaces.

There are besides many useful recommendations on a variety of subjects of sanitary importance, such as street pavements, points in regard to water supply, sewage, inspection of food, intra-mural interments, etc.

On the whole, the volume offers many matters of interest, and

makes a creditable showing of the possible utility of sanitary boards in general, and of the real utility of that of Philadelphia in particular. S. S. H.

Capillary Bronchitis of Adults. By Calvin Ellis, M.D., Jackson Professor of Clinical Medicine, Harvard University. Pp. 36.

This is the seventh of the series of American Clinical Lectures published by G. P. Putnam's Sons. The point specially insisted on by the author is, that a too decided distinction is made by most medical writers between the capillary bronchitis of adults and catarrhal pneumonia. His position is that they are frequently associated, or that the former runs into the latter. He illustrates it by a description of some cases which occurred last winter under the eyes of his class at the Massachusetts General Hospital. As confirmation of his views, he quotes from Jaccoud and the German Lebert and Bühl. S. S. H.

The Relations of the Nervous System to Diseases of the Skin. By L. Duncan Bulkley, A.M., M.D. Reprinted from the "Archives of Electrology and Neurology" for November, 1874, and May, 1875. Pp. 45.

After some introductory remarks on the minute distribution of the nerves in the skin, the author proceeds to consider the connections between nerve disorders, both organic and functional, and cutaneous diseases With this view, he treats the subject first in a physiological and then in a pathological aspect. As examples of the former he instances the effect of the emotions on the circulation of blood in the skin, particularly of the face; local sweating in connection with neuralgia; itching, burning and pain dependent on eruptions; discolorations of certain parts of the surface during pregnancy, etc. The pathological observations in this connection are subdivided into—"(a) eruptions directly consequent on peripheral wounds of the nerves; (b) eruptions attending lesions of conducting nerves; (c) eruptions accompanying brain and spinal disease; (d) idiopathic nerve-lesions found *post-mortem* in nerves supplying diseased skin." These are illustrated by cases cited chiefly from other

authors, showing the connection between a great variety of cutaneous affections and lesions of the nervous system.

In a second part of this paper the author takes up its clinical and therapeutic features. A number of cases in his own practice are given as examples. The therapeutic indications are divided thus—"(1) to remove irritating agencies; (2) employ such measures as soothe already excited nerves; (3) secure a proper vitality and tone of the nervous system."

Accompanying this pamphlet is an article of four pages on a new antipruritic remedy. This consists of equal parts of camphor and chloral hydrate, which rubbed together become fluid, and then may be conveniently incorporated into an ointment. The formula recommended is:

℞—Pulv. Camphoræ,
Chloral hydrat. aa ʒj,
Unguent. aquæ rosæ ℥j. M.

This preparation probably relieves itching by its anæsthetic effect. The mixture of the first two ingredients undiluted is lately recommended as an application for the relief of peripheral neuralgia.

Dr. Bulkley is a frequent contributor to medical literature in the department of dermatology, and has gained a deservedly high position in that particular field. This paper fully sustains his acknowledged reputation. S. S. H.

The Pathology and Etiology of Pulmonary Phthisis, in relation to its Prevention and Early Arrest. By E. Darwin Hudson, jr., A.B., M.D., Professor of Principles and Practice of Medicine, Woman's Medical College of the New York Infirmary. Reprinted from the Transactions of the New York Academy of Medicine. Pp. 24.

In this paper the author adheres to the old terms of gray and yellow tubercle, but accepts the modern doctrine that the latter is not a neoplasm, but a metamorphosis of inflammatory exudations left by previous bronchitic or pneumonic attacks. Hence he classifies pulmonary phthisis as (1) tubercular, and (2) simple inflammatory, and holds that most cases belong to the latter class. He also inclines to the belief that true gray tubercular deposit is often an inflammatory development of the lymphoid

tissue of the lungs. This is in accordance with the view of Niemeyer, that miliary tubercles in the lungs generally result from the irritation set up by the cheesy infiltration left by chronic catarrhal pneumonia.

These doctrines subvert the ancient idea of the specific character of phthisis, though it is acknowledged that the scrofulous diathesis leads to increased liability to this cheesy deposit, instead of its expulsion in an earlier liquid stage, as would be the course in more vigorous subjects. But his statement that "modern etiology asserts that scrofula and tuberculosis are one in nature," must be taken with some reserve, for the scrofula of childhood by no means invariably ripens into consumption, of either form; and on the other hand, consumption, with or without tubercle, may exist in non-strumous subjects.

Another prominent cause of pulmonary phthisis, in the author's opinion, is pleurisy. This view is sustained by the citation of several modern authorities. Niemeyer avers that "tedious or imperfect absorption of empyema results in tuberculosis, or in chronic destructive pneumonia, the patient succumbing to the symptoms of consumption." The deposit acts as an irritant, and in the early inflammatory stage the author suggests that the irritation of the inflamed membrane by the act of respiration repeated 18 or 20 times in a minute, might lead to pulmonary hyperæmia and progressive consolidation.

He concludes that the predisposition to pulmonary phthisis results from a variety of depressing influences, rather than any peculiar diathesis, and that inflammatory attacks are the principal exciting causes, both in scrofulous subjects and in those previously sound.

Several pages are devoted to prevention and treatment, but these require no notice here. S. S. H.

The Physical and Moral Causes of Bad Health in American Women. By James E. Reeves, M.D., Wheeling, W. Va.

This essay was read before the American Public Health Association, at its second annual meeting in New York city, Nov., 1873.

After some introductory remarks, the author proceeds to consider the causes of bad health among the women of this country.

First he reckons the inheritance of a vitiated constitution; then errors of management in infancy, in respect to dress, feeding, etc.; then faults in the educational system, especially that of "cramming" the mind to the neglect of physical exercise—so common in schools for girls. The tyranny of fashion, early marriages, too often followed by wilful abortion to escape the cares of maternity, venereal disease traceable to previous transgressions of the husband, among other sources, also receive a share of attention.

The essay was first published in the *New York Times*, and is now issued in a small, neat pamphlet, for popular circulation. Its general dissemination and study by heads of families all over the country will have a salutary effect, for while the ideas are not new, their reiteration is necessary for any lasting effects on the popular mind. S. S. H.

Uronology and its Practical Application: a Guide to the Examination of Urine and its Diagnostic Value, with extracts from the works of the most modern investigators. By George M. Kober, M.D. Pamphlet, pp. 107, with an index.

This was originally published in the September, October, November and December numbers of the *Richmond and Louisville Medical Journal* for 1874. It has been prepared with great care, is complete enough for the use of the general practitioner, and will be found more convenient than larger works on the subject. S. S. H.

Annual Oration before the Medical and Chirurgical Faculty of Maryland, April 14th, 1875. By Joseph M. Toner, M.D.

The author treats chiefly of the medical history and physical geography of the State. Short biographical sketches are given of the principal medical worthies of its past. In connection with its geography, some valuable suggestions are offered in regard to the improvement of the sanitary condition of the Eastern Shore, which is noted for its malarious character. The point of chief importance is an efficient system of drainage. The paper is illustrated by a number of profiles, showing the elevations of various points on the most important lines of travel. S. S. H.

Sixth Annual Report of the State Board of Health of Massachusetts, for the year 1874. 8vo., pp. 379.

The first 25 pages of this report are occupied with business matters and others of local interest. The remainder consists of carefully prepared papers on subjects of great sanitary interest, contributed partly by members of the Board, and partly by scientific men who have studied these particular subjects thoroughly. This Board have not had the control of vital statistics, neither have they charge of any special sanitary system for the metropolis; but they take cognizance of matters affecting the health of the State at large, and examine cases of such importance as to affect the health of large communities, wherever located in the State.

The first paper is contributed by Henry I. Bowditch, M.D., Chairman of the Board, on Inebriate Asylums or Hospitals. He recommends the immediate establishment by the State of one or more of these institutions, and he would have the inmates classified as those who enter voluntarily for reformation, and those who are committed by judicial process for the prevention of abuses. He starts with the assertion that inveterate drunkards ought to be deprived of civil rights, specifying particularly deprivation of the right of suffrage. We believe that the time will come—in other words, civilization sufficiently advance—when the State will endeavor to repress drunkenness, not by interfering with the traffic in spirits, but by taking hold of the drunkard himself. And we are inclined to the opinion that the most feasible plan will be, not to treat him as an invalid or lunatic, but as one who is defrauding his family and society by reducing the former to want and imposing on the latter the burden of their support. When society are prepared to take this view of the subject, it will not be necessary to wait until the mischief is done, and the community saddled with the burden of pauperism, but the tendency can be recognized, and the remedy invoked, either by the family or by officers of the law. Interdiction on the ground of insanity is difficult, expensive and vexatious, requiring medical testimony, which is apt to be very conflicting; while proof of idleness, wastefulness, and failure to take care of property or support a family, can easily be made by those concerned, whether family or heirs. A guardian can then be appointed to administer his estate or take charge of his earnings,

as in case of a minor, an idiot or a lunatic; and, if incorrigible, idle or vicious, provision should be made to confine him at hard labor for the benefit of those dependent on him. If any plan of reform would be successful with the individual, we believe that this would be, and at the same time it would be advantageous in an economic point of view. Emancipation from such control and restraint should be provided for, on the production of suitable evidence. A plan of this nature we think would be more effectual in the repression of intemperance than moral pledges, which the weak cannot keep and the vicious will not take; or than sumptuary laws, which rather stimulate the perversity and ingenuity of the human mind to circumvent.

An able paper follows, on The Value of Health to the State, by W. E. Boardman, M.D. The subject is treated in a financial point of view, showing the cost of sickness in its various counts of loss of time and wages, the expense of medicines and medical attendance, the pauperism often imposed on a family through the illness or death of its head, and the shortening of life, which has its money value to the State when represented by productive individuals. Interesting tables of vital statistics are presented, and the cheerful statement is made that the mortality rates of Massachusetts is higher than that of any other State in the Union, except Arizona and Louisiana. To us, then, the palm is yielded of being the sickliest State and the wickedest city in the whole country.

A paper is contributed On the Transportation of Live Stock, by J. C. Hoadley, Esq., a member of the Board. This has reference chiefly to railroad transportation. The points involved are the safety, comfort and health of the animals, which all have a bearing on the quantity and quality of the provision for large centres of population remote from the sources of supply. Regulations are indicated for governing the space allowed each animal in the cars, the length of stages of travel in hours, periods of rest, and the supply of water and feed. Other points, less directly connected with the subject, are also taken up, so that the whole occupies more than sixty pages.

The Secretary of the Board, Dr. Chas. F. Folsom, furnishes an essay on Our Meat Supply and Public Health. He commences with some remarks on the value of animal food, as compared with other articles of diet. He concludes that most people use it when they can obtain it, and that it is conducive to bodily

vigor, and especially so to mental activity. Of these conclusions there can be no reasonable doubt.

Some remarks follow on the general effects of unsound meat, short of an actually putrid and totally inacceptable condition. He concludes that such food may be digested by persons in vigorous health, who can assimilate what is suitable and reject what is unfit for sustenance; while the sick and the feeble must not be subjected to this trial of their digestive powers, and caution should be exercised by all in presuming upon their tolerance.

Considerable space is given to the description of the various parasites contracted by mankind from eating flesh contaminated by their larvæ. The diseases incident to animals used for food are also spoken of, but rather as affecting their suitableness for meat-supply than in a pathological sense. The effects of terror, of exhaustion, and of deleterious food and drugs on animals, are also noticed. Recommendations are given for the inspection and management of animals previous to slaughtering, and also for improvements in the method of slaughtering. The paper throughout evinces great industry in research, and good judgment in the conclusions arrived at.

An article follows on the Brighton Abattoir, which consists of, I Report of Mr. J. N. Merriam, President of Butchers' Slaughtering and Melting Association; II. Regulations of the Association; III. Revised Sanitary Regulations of the State Board of Health; IV. Analysis of Pearl Butter; V. An Act to Incorporate the Butchers' Slaughtering and Melting Association in Brighton, and for other Purposes; VI. An Act Concerning Swine Slaughtering Associations.

Prof. Wm. Ripley Nichols, of the Massachusetts Institute of Technology, contributes an article on the Composition of the Air of the Ground-Atmosphere. His investigations were made on the artificial lands reclaimed from the "Back Bay" by covering the low flats with a layer of gravel or sand. It had previously been determined that the air contained in the porous ground near the surface contains considerably more carbonic acid than the atmosphere above the surface. His experiments showed that the foreign constituents of this air consisted almost exclusively of carbonic acid, there being no sulphuretted hydrogen and only a trace of ammonia, and therefore proved that this new ground is suitable for building sites, as the proportion of carbonic acid in the air of the ground is not excessive. Analysis

of the carbonic acid in close propinity to buried bodies showed much higher proportions of carbonic acid, while two feet above the surface, when the covering was sand or gravel, the carbonic acid was found to be very greatly diminished in most of the examinations.

The subject of Ventilation of Railroad Cars has also engaged the attention of the Mass. Board of Health, and a report is made by Dr. Theo. W. Fisher, of Boston, containing chemical analyses by Prof. Nichols, of the air in the cars under varying conditions as regards number of passengers and length of time from starting. The result showed a proportion of carbonic acid similar to that of the ground in the Black Bay two feet below the surface, and of course much greater than above the surface; also about twice that found in the air of public buildings, such as schoolhouses and places of amusement.

Some remarks are also made on the ventilation and heating of railroad cars. For the former purpose the author approves of the fan-wheel process, and for the latter, steam as the heating agent.

An elaborate paper on Cremation and Burial: an Examination of their relative Advantages, is contributed by Dr. J. F. A. Adams, of Pittsfield. The author gives a history and description of cremation, both in ancient and modern times. He speaks of intra-mural interments, and the causes which have led to their general abandonment in large cities.

In order to avail himself of varied sources of information, Dr. Adams addressed a circular of questions to about 500 medical men, the majority in Mass., the others in different States of the Union, and in England, Scotland, and Ireland These questions had reference to deleterious effects on the health of people dwelling in proximity to burial places, and also to the relative merits of burial and cremation. The answers give a low estimate of sickness attributed to this cause, and lower than the amount traceable to proximity to privies, stables, etc. The testimony in favor of cremation is small, in proportion to the whole, and mostly qualified or restricted to localities where burial in inconvenient. The author himself is of the opinion that cremation is not demanded in this country on sanitary grounds, inasmuch as the objections to burial may be obviated, even in our large cities, by the abolition of intra-mural interments, by the use of funeral trains on railroads, and of reception tombs in the winter season.

While we agree in these views with the author, we are of the opinion that the objections of all except the most intelligent class of people to cremation on religious and sentimental grounds would long remain a bar to its general adoption, even if the disadvantages of burial were greatly magnified.

The volume closes with a report on the health of a large number of towns in the State, and another on the sanitary condition of the State Prison at Charlestown.

S. S. H.

MEETING OF PHYSICIANS TO DISCUSS CARBOLIC ACID.

MINUTES OF MEETING.

NEW ORLEANS, Sept. 29th, 1875.

Meeting was called to order in University Building at 8 p. m.

On motion of Dr. Tebault, duly seconded, Dr. Armand Mercier was elected President of the meeting.

Dr. L. F. Salomon was nominated and elected Secretary.

The President then stated that the object of the meeting was to discuss the question of the use of carbolic acid by the Board of Health, and that at a meeting of the citizens of the Second District a resolution was passed authorizing the appointment of a committee of ten (10) physicians to invite the profession of this city to a meeting to discuss the following points:

I. Is carbolic acid a disinfectant?

II. Is carbolic acid an antiseptic?

III. Is carbolic acid a poison?

IV. Is it possible to disinfect the atmosphere of a whole city by carbolic acid or other means?

A communication from the Board of Health was read, stating "that whenever practicable they would use the pure carbolic acid, but as it was very costly, the impure would be used in its stead when they were unable to obtain the pure acid."

Dr. C. H. Tebault presented a communication from Dr. D. W. Brickell, in opposition to the use of carbolic acid.

Dr. Alpuente read a paper expressive of his views on the subject under discussion. He said that carbolic acid has no other effect than to coagulate albumen, and then must be brought in actual contact. Its effects last only as long as its actual presence exists. Read the experiments of Dr. Dougall on vaccine

matter, showing that the acid does not destroy its properties. Pure carbolic acid has a deleterious effect on human beings. He spoke of its toxic effects on animals. It is only a momentary disinfectant. It hides odors but does not destroy them. When its use is stopped the odor will return. Its effects are limited, and its application in one part of a town will not be of any benefit in disinfecting the atmosphere. It is not only not a disinfectant, but it preserves infection.

Dr. Tebault stated that he desired to prove by the records of the Board of Health that it is not a disinfectant; mentioned the circumstances of the bark Valparaiso. Carbolic acid cannot disinfect an entire atmosphere. It enters it in too diluted a state to do any good. A portion of Fourth District was disinfected ineffectually. Carbolic acid does not affect the atmosphere to the extent of one-tenth of one per cent. Pure acid does not do any good. Crude acid does, but to be of any benefit it must be used in such quantities as to prove injurious to respiration.

Dr. Henderson stated that as far as any practical benefit was to be derived from the use of carbolic acid, he could see none. In 1873 it was used very extensively on First street, but notwithstanding, four weeks afterwards he had several cases of yellow fever on that street.

Prof. Joseph Jones said—The question is, can we prevent yellow fever by the use of carbolic acid by the method adopted by the Board of Health? He thought not. Carbolic acid was first used here for that purpose in 1867. Every house was disinfected with carbolic acid and sulphurous acid gas, and notwithstanding the fever became epidemic. In 1870 the mortality was greatest in November, after the thorough use of carbolic acid.

Prof. Ernest Lewis said the principal object of discussion was whether carbolic acid is injurious to the sick as well as to those in health. In his hands, while health officer, it failed to produce any benefit. Its effects are very deleterious to the well, producing headache, dizziness, dimness of vision, etc., thus showing all its toxic effects.

Dr. Y. R. LeMonnier, of the Board of Health, stated that up to date it has had no effect in arresting the spread of the fever. He then gave the number of cases, deaths and recoveries.

Dr. Tebault moved that a committee of six (6, be appointed

to draw up a set of resolutions expressive of the sense of the meeting. An amendment was added by Dr. Logan, that the papers read be submitted to the committee. Seconded and carried.

The President then appointed the following committee: Drs. Tebault, Sabin Martin, Hampden Lewis, Henderson, Jos. Jones, and Logan.

On motion, the meeting was adjourned until Wednesday, Oct. 3d, at 7½ p. m.

L. F. Salomon, M.D., *Secretary.*

LETTER OF DR. WARREN BRICKELL.

New Orleans, Sept. 29th, 1875.

Gentlemen:—Through the columns of the daily papers I see that I have been selected as one of a committee of physicians to consider the subject of the public use of carbolic acid as a destroyer of disease germs. I regret that a previous engagement precluded me from participating in your discussion, but I cannot forego the general expression of my humble opinion on the subject.

1st. Will carbolic acid destroy disease germs?

So far as I have been able to inform myself on this point, I do not believe that an affirmative answer can be given, except in the case of the application of the acid itself to the dejections of the Asiatic cholera. This I have not proved personally, but we have high testimony in the affirmative, and for the sake of argument I am willing to grant it. But the immediately interesting question with us is—can the acid destroy yellow fever disease germs? Thus far we have no evidence that it can. We do not claim that these disease germs are in the dejections of yellow fever patients; indeed we have no knowledge whatsoever of them. We know not what they are, whence they come, nor whither they go. Experimentally, we know that carbolic acid, in substance, is destructive of organic life; we assume that these germs are organic, and we blindly hurl carbolic acid at them.

2d. For the sake of argument, let us admit the most popular theory—that yellow fever disease germs are atmospheric, that they float all around and about us, and that we inhale them and poison our blood and fall. What then? Can carbolic acid be made to permeate our atmosphere in such degree as to seize on and destroy them? Surely not. And why? Put commercial carbolic acid (such as we daily prescribe for our patients) on your hand; if it is a proper article it inflicts pain and is a discutient. But dilute it, as we do in our prescriptions, and you can wash your hands with it, or wash sore or abraded surfaces with it, or breathe it, or swallow it—all with impunity. In these

forms of prescription it is carbolic acid, but robbed of its escharotic power—its power to destroy organic life.

3d. Granting, then, for the sake of argument, that carbolic acid will kill yellow fever disease germs, where can we reasonably hope to successfully attack them? Surely not outside the room (or at farthest the house) in which a man has been sick with the disease. And to do this effectually, not only must the acid in killing strength be brought in contact with every *thing* in that room or house, but every cubic inch of air must be so saturated as that man cannot safely breathe in it.

How, then, can we hope to saturate the atmosphere of a city, or of any quarter of a city? Given the condition of absolute stagnation of the air, and space alone forbids the idea of saturation. Admit, as we must, the actually normal condition of constant currents in our atmosphere, and the idea of successful saturation becomes ludicrous. Currents of air are necessary to the conveyance of particles of any substance through the atmosphere, but the currents of air in space forbid the idea of fixation, and consequently of saturation. I can saturate a bowl of water with salt, but you cannot furnish me salt enough to saturate Lake Pontchartrain. We are told by competent authority that the vitiating results of the respiration of all human beings and all the domestic animals of London do not perceptibly alter the composition of the general atmosphere; how much carbolic acid will it take, then, to saturate the atmosphere of New Orleans?

4th. But to the facts in regard to experiment also in New Orleans with so-called carbolic acid. It seems to me they should be satisfactory to every fair enquirer. Within the past few years we have seen endemics of yellow fever at the old market on the river end of Washington street, and in the vicinity of the junction of Jackson and Magazine streets; in each instance so-called carbolic acid has been profusely used by the Board of Health, to the inexpressible annoyance or torture of the inhabitants of those localities; but the disease has steadily pursued its course until the cold weather of fall has come to end it. More; plenty of examples have been seen of absentees returning too soon in the fall to those foci, and in a few days dying of the disease. And this, notwithstanding the atmosphere was all the time more or less permeated by the odors of so called carbolic acid.

5th. And yet we must stop right here to inquire whether the Board of Health did really use carbolic acid in these experiments. Beyond a doubt they never have. They have used, and are still using, only a crude compound which most probably does not contain ten per cent. of carbolic acid proper; and they have been simply raising a monstrous stench with the naphthaline and empyreumatic oils, the result of the destructive distillation of coal.

The results of my inquiries lead me to believe that it would have been far cheaper for the Board of Health to have used

real carbolic acid, and then their experiments would have been legitimate More; then carbolic acid would not distress the people as does this inert stuff that is being distributed. I have no idea that it would do any good, but I do not believe it would do any harm beyond the waste of money which we might spend much more intelligently in efforts to improve our sanitary condition.

Most respectfully,

D. WARREN BRICKELL, M.D.

To the Meeting of Physicians on Carbolic Acid.

REMARKS OF DR. JOHN B. HENDERSON.

Mr. President:—I am called on to give an opinion with reference to the question, whether carbolic acid has the power, when used as a disinfectant, to confine or destroy the poison of yellow fever when introduced, or existing in any given portion of our city? I answer that carbolic acid possesses no such power. Carbolic acid has never arrested yellow fever in a single instance in this city; but the disease has spread, whenever introduced, notwithstanding the prodigal use of this agent, as a disinfectant by the Board of Health. I respectfully refer you to the year 1873:—there has been no dispute about the case of Jose Maria Avera, mate of the Spanish Bark Valpariso, at Pier No. 84; Fourth District, between 1st and 2d streets. The case of Avera was reported to the Board of Health, July 4th, 1873, and in a few days two other cases were reported on two Steamboats near the Bark Valpariso. (See report of Board of Health for 1873). The Bark, and two Steamboats, and neighborhood were taken in charge by the Board of Health, and treated with carbolic acid as a disinfectant. The fever notwithstanding the so called thorough disinfection with "Crude Carbolic" acid, (mixture of coal tar and carbolic acid), spread in the surrounding shipping and in the neighborhood on shore, in the same manner in which I have observed yellow fever to do, during the past 30 years, in New Orleans. The fever by the middle of August had extended from the Fourth District up and down to the 1st and 6th Districts, and by the first of September cases were reported all over the city—the fever continued sporadically until arrested by cold weather in November. I will say in justice to the Board of Health, that it made strenuous efforts to arrest the progress of the disease by the prodigal use of carbolic acid and coal tar (crude carbolic acid) as a disinfectant. The board of Health failed to arrest the spread of yellow fever; and the people said amen! when the Health Officers had ended their labors and retired to rest.

In my opinion carbolic acid is a failure as a disinfectant, and at the same time as used by the Board of Health of New Orleans *may act injuriously upon the well and the sick.*

This year my experience has been in accordance with that of

1873; the fever has not been circumscribed or arrested by carbolic acid disinfection, but has spread from the original focus near the old Basin, 2d District, and has been reproduced in the 1st, 3d, 4th, and 6th Districts. It will not probably affect a large number of people, because the strangers in our city are wanting.

REMARKS OF DR. FRANCOIS R. ALPUENTE.

To the Committee named at the last meeting of the Physicians of New Orleans:

GENTLEMEN:—I have submitted to you an analysis of the paper that I read last Monday before the Assembly, that you may take from it, if you find anything, whatever you may think useful in the question of carbolic acid.

I thought proper first to give the action of phenic acid on all organic matter after Liebig, that we might establish its action on albumen. Here I will only give his opinion on the action of carbolic acid on a skin deprived of its hair by a solution of lime. It becomes first white, then hard and transparent, but by remaining in water it becomes again soft, and does not putrefy.

This last assertion is denied by Mr. Lemaire, from the experiments of whom I drew most of my conclusions. He says, "that as soon as the acid shall be evaporated, the skin placed in water at a temperature of 20° or 23° will *enter rapidly* into putrefaction." This he advances from his own experiments.

From the above it is evident that phenic acid acts on albumen, coagulates it, and transforms for the moment its physical properties, but that unless an excess of acid is added, that the acid is evaporated and the albumen is again dissolved. Thus the action of phenic acid is but temporary; putrefaction will be arrested as long as this acid is used, but as soon as its use is discontinued and it evaporates, putrefaction will be renewed. An anatomical preparation, which had been for years in my office in a jar of alcohol, by the evaporation of alcohol entered into putrefaction; acid phenic was used by me to preserve it, but by accidental circumstances the acid evaporated without being renewed, and the anatomical preparation went again into putrefaction.

Dr. Dougall (half-yearly *Abstract of Medical Sciences*, January, 1874, p. 96), after submitting the lymph of vaccine to carbolic acid vapor contained in a jar, and inoculating it with success, says:

"These simple facts show that the *present extension* of carbolic acid as an *anti-zymotic* is a *serious* delusion. If a minim of vaccine matter is unaffected after being buried thirty-six hours in the heart of a carbolic tont of concentrated carbolic *vapor*, or after being mixed with the acid in the proportion of 1–50, for ten days, it is surely plain that the destructive action of carbolic

acid on *variolous* matter and other *zymotic* poisons must be null. As proven by the action of carbolic acid on vaccine lymph, it *conserved* both the physiological and physical properties of the antiseptic body; at least it does not *impair them. Thus the contagions which it is thought are destroyed are preserved.*"

Mr. Lemaire, in a similar experiment, vaccinated immediately after the immersion of the vaccine in carbolic acid, without a good result. The experimentation was tried on grown persons.

I have just presented facts which show that vaccine immediately under the effect of carbolic acid can not be inoculated with success, but that after a few days' dissolved in water it will become soft and transparent, and will be used with success in propagating vaccine, and that this acid is a preservative of the physiological and physical properties of the antiseptic, or zymotic. Thus the contagion which we think we are destroying with phenic acic we only previously preserve in the acid, until the day when we will think it proper to leave it to its own evaporation and to favor us with the contagion, which will now be renewed, revived, and demitoxicated, if I can make use of this expression, for intoxication is its effect on animals of all grades.

By many very interesting experiments of Mr Lemaire (which you find in the French paper which I send you), it is proven also that the regenerative or germinative poisons of vegetables are not also destroyed by their immersion in a solution at 4 per cent., but are only suspended, and that here also the physiological and physical properties are also preserved by this acid, to reappear when they shall be deprived of it.

A very important fact, which has been proven to Mr. Lemaire by experience, is that seed planted in a ground containing 2 or 3 per cent. of coal tar, after remaining in it 48 days without germinating, did grow in a good ground after having been washed in tepid water containing a small quantity of carbonate of soda.

If from the vegetables we pass to the animals, we find that its action is immediate on al microscopic animals. (See experiment of Mr. Lemaire).

Warm weather or heat will prevent carbolic acid from acting as properly on putrefaction; this is the natural action of heat in evaporating the acid and preventing its action—at least a continued action—but this preservation of putrid matter would be obtained if the acid was continually renewed. This shows how transitory is the action of carbolic acid and that it destroys nothing.

Its action does not stop at these microscopic beings, but extends to the highest order of animals, even to man. (See for experiments on animals).

On man phenic acid applied to the skin has a local action, but at the same time it is absorbed and produces symptoms of drunkenness; on dogs serious accidents, and in birds, death.

From post-mortem examination (see post-mortem examination cited in the French paper), it is evident that acid phenic acts on

the lungs. A dog died three days after the administration of carbolic acid, from pneumonia. Almost all the dogs to which acid was administered had a cough.

Acid phenic is a disinfectant, but only *temporary*. It acts only by excess of its odor, by which other nefarious smells are hidden, but they are not destroyed; but it does not only hide them but it preserves them, because it arrests for the moment the cause of their emanation; and they will reappear as soon as the acid is evaporated. If acid phenic is put in a privy not actually in use, the offensive smell will be destroyed, but as soon as the evaporation of the acid has taken place the offensive smell of the privy will return; the same thing will happen for putrefied meat or any other matter in putrefaction. If acid phenic is placed in a privy situated near another, it will be disinfected, but the offensive smell of the non-disinfected one will continue to annoy the persons that are in its zone of infection. In a house which I occupied I disinfected the privy situated in the rear of the house by throwing into it carbolic acid; the smell of the acid could be smelled all over the house, but shortly after the fecal smell of the privy annoyed my family again, and this came through the walls of a neighboring privy, touching the wall of separation in the yard.

Do not these facts prove that the action of phenic acid is a limited one; that its application in one part of a city cannot prevent the offensive smell from extending elsewhere. I think that I can even advance that the same smell hidden by carbolic acid, when it will have spread out of the limit of the acid, will be felt and recognized. It is thus, that passing several squares from a special small-pox hospital disinfected with carbolic acid, I could smell the offensive odor of variola.

I can not admit that phenic acid is not injurious to the health; for I consider its action on man the same as that of alcohol, producing first intoxication, and afterwards a special action on the nervous system—with this difference, that the action of alcohol is slow, whilst that of carbolic acid is prompt. See in my French observations on carbolic acid, the phenomena to which the animals are subjected when under the influence of carbolic acid, and compare them with those offered by a man with delirium tremens.

Learned chemists, and with them the non-chemical, have admitted that the offensive smells are only hidden, but not destroyed. It would be by substitution of odors that it would act. This I have already shown you. Mr. Lemaire says: "That the phenic acid does not disinfect as the chlorures, or the salts of zinc or of iron, which turn certain offensive bodies by double decomposition, or otherwise, into inodorous bodies; that by the phenic acid no *chemical* action on the odoriferous gas takes place; that for that gas to be destroyed it would take currents of air to sweep it away.

But where are they swept—where are they taken to? To any

part of the city, to several squares from the hospital of small-pox, as I have already said.

This, I think, is sufficient to prove that carbolic acid is not a disinfectant, and I have already established, by the experiments of Dr. Dougall, that acid phenic is not an antiseptic, but a preserver of contagion; have also concluded that acid phenic owns its temporary antiseptic property only by its action on albumen, which acquires its natural property of putrefaction as soon as divested of the acid. Remmenback had already attributed the same property to creosote.

Without entering into observation as to the existence or non-existence of these invisible bodies, these exhalations or emanations known as miasma, nor of their origin or nature, we are obliged to admit (*that, I know not what*) called miasma, whose disastrous influences act on man, animals, vegetables—in a word, on all living beings. However, from the experiments of Thénard and Dumas, and other celebrated chemists and physicians (see French paper), I am disposed to admit that they are emanations from organic bodies in decomposition, or emanations from unhealthy men, as happens in hospitals, or from exhalations of a great accumulation of men or animals.

From these experiments they are composed of animal matter, which putrefy rapidly, and which (after Liebig) resemble impure albumen.

We have seen that the most putrefiable part of organic matter is albumen, therefore there is nothing extraordinary that it should be that part of the animal matter which should be most spread in the atmosphere; acid phenic acts on it, concretes it, preserves it for a more or less time, without destroying its properties, and when these miasma, carried away by the wind, shall have lost their acid, then will they revive with all their impurity and their disastrous action in the place where they have been carried. If such are the facts, how is it possible to preserve a whole city from deleterious agents with phenic acid? It could be done only with an aspersion of the whole city, and that continued aspersion, and the remedy would be as bad as the disease, for acid phenic is dangerous to the health and life, either administered interiorly, or absorbed by the skin or by inhalation.

OUTLINE OF REMARKS OF PROFESSOR JOSEPH JONES, M D.

It is the duty of the physician to prevent, as well as to cure disease, and all questions relating to sanitary science should be discussed with calmness, deliberation and justice. In the discussion of any and every measure which relates to the prevention and control of yellow fever, which has at various times inflicted incalculable injury upon the maratime cities of insular, Central and North and South America, it would be well for the

guardians of the public health to consider the advice of a noble Roman to the Senate: "All who deliberate upon doubtful matters ought to be uninfluenced by hatred, affection, anger or pity. When we are animated by these sentiments it is hard to unravel the truth; and no one has been able to serve at once his passions and his interest." All facts relating to the origin, cause, and means of prevention of yellow fever, are of vital importance to the inhabitants of Southern cities. A correct knowledge of the laws which govern yellow fever can be obtained only by the accumulation of a large number of well-observed and undoubted facts, and the medical profession will sustain and encourage legitimate and efficient measures designed to limit or prevent the spread of this disease.

Whoever may be instrumental in the discovery and establishment of the laws which govern the origin and spread of this great scourge will certainly be entitled to the gratitude of the inhabitants of insular, tropical and sub-tropical America.

If it be true that the localizing causes of yellow fever, and the high death rate of certain cities in insular, tropical and sub-tropical America, be preventible, as has been publicly taught by Drs. Dowler, Fenner, Barton, Simonds, and other distinguished physicians in this and other cities, then it is of prime importance to the public welfare that the medical profession should calmly discuss every experimental procedure directed to the control or removal of the local causes of disease and death. It would be foreign to the present discussion to enter into any extended review of the great advances which have been made in sanitary science, but we may be permitted to allude to certain well established facts. Thus, during the middle ages, the characters of the epidemic fevers were modified, and their destructive tendencies intensified, and their external manifestations rendered more marked, by the neglect of all sanitary regulations in cities and private houses, and by the filthy habits and salt diet of the people. Every town was a fortress, and every house a castle, and the inhabitants, like the soldiers of a garrison, worked and slept with their arms, and always held themselves ready to resist attacks. Bands of robbers defied the power of the rulers, openly encamped upon the public roads, and plundered and murdered all who were not able to protect themselves by the force of arms.

The country was covered with forests, and undrained swamps and marshes, and the best lands were uncultivated. The walled towns were encompassed by large stagnant ditches, which were the receptacle for refuse and all sorts of decomposing filth; the streets were narrow, unpaved, undrained, uncleaned and unlighted; there was no provision for the removal of the town refuse, which was thrown into the gutters and streets, forming in dry weather a semi-fluid mass of corrupting animal and vegetable matter, and in wet weather, noxious bogs of filth. The houses were described as mean and squalid, without chimneys, the windows without glass, and the floors without boards. The floors,

says Erasmus, "generally are made of nothing but loam, and are strewed with rushes, which being being constantly put in fresh, without the removal of the old, remain lying there in some cases for twenty years, with fish bones, broken victuals, the dregs of tankards, and impregnated with other filth underneath from dogs and men."

From the absence of cotton and linen goods, and the scarcity of woollen garments, resulting from the slow production of cloths by the hand-loom, the personal habits of the people were filthy in the extreme. Combined with this, there existed ignorance as to the mode of raising and preserving vegetables, and improvidence and intemperance of living. For many centuries no more subsistence was produced in Europe than was barely sufficient for the necessities of the people. Consequently, every year of scarcity became a year of famine. The malarious, undrained state of the country, the crowded, filthy condition of the towns, and the filthy, degraded habits of the people, formed the necessary conditions for the origin and spread of contagious diseases, which almost annually desolated the more thickly populated cities and countries.

During the past two centuries, the great revolution which changes of diet, dress and habits, and the great advance of the arts of civilization, and the application in public and private buildings, and in cities and towns, of correct sanitary regulations, have banished many destructive diseases and mitigated the severity of others.

The plague which ravaged Europe for more than two thousand years disappeared near two centuries ago, and now only lingers in the more ancient and filthy Eastern cities; the labors of the agriculturist have banished malarial fever from large portions of the European and American continents; typhus or jail fever, the fatal scourge of the unfortunate prisoner, of the sailor and soldier, and of the inmates of the crowded hospital, and which in many of its visitations was scarcely less terrible than the plague, is now confined to the hovels of the poor, in certain oppressed and suffering countries, and is almost unknown amongst the better classes; many painful and fatal forms of disease, which formerly swelled the bills of mortality in the large European cities, have so completely disappeared that the names even are no longer in use; and small pox, which before the discovery of vaccination by Jenner, was infinitely more destructive of life than the plague itself, sweeping off whole tribes of savage and half civilized people, and destroying not less than fifteen millions of human beings every twenty-five years, exists only because of our neglect and folly.

The important question to be considered by this concourse of physicians is, whether the mode of "disinfection" at present practised by the sanitary authorities is capable of limiting and arresting the spread of yellow fever?

As carbolic acid (so-called) appears to be the chief disinfect-

ant employed, we propose to limit these remarks to this substance.

It has been admitted that the "crude carbolic acid" has been used by the sanitary authorities. As this is a mixture with varying proportions of carbolic acid (phenol, hydrate of phenol, phenylic alcohol, phenic acid, coal-tar creosote), and basic acid, and neutral organic bodies and water, resulting from the destructive distillation of coal, it would be of scientific interest to determine the beneficial or injurious effects of each separate ingredient.

It is well known that the coal tar mixed with the phenol in the so-called crude carbolic acid, includes the bases ammonia, aniline, picoline, quinoline, and pyridine, the acids acetic, phenic, rosolic, and brunolic, and several neutral hydro-carbons, as benzol, toluol, cumol, and cymol (liquids), and naphthalin, anthracine, anthracine hydride, chrysene, fluorine, retine, acenaphthene, and benzerythrine (solids).

We are as yet without accurate information as to the effects of the inhalation of certain of these organic compounds. Many of these substances are volatile at ordinary temperatures, and must be dissipated rapidly into the surrounding atmosphere when spread broadcast over the pavements heated by a tropical sun.

Neither do we propose to recapitulate the various facts which have been recorded by many writers, illustrating on the one hand the power of phenic acid or phenol (carbolic acid), to arrest decomposition when used in sufficient amount, and on the other hand the poisonous effects of this agent upon men and animals when inhaled or swallowed in sufficient quantities. Such facts are accessible to the profession, and some of the learned gentlemen have carefully considered these questions in the papers just presented.

It is believed that the objects of this discussion will best be promoted by a brief consideration of the

History of "Carbolic Acid Disinfection," and similar Sanitary Measures in New Orleans.

In this account the facts shall be drawn from the Official Reports of the Board of Health.

Carbolic acid appears to have been first used for the "arrest of yellow fever," as a "disinfectant," during the recent and memorable epidemic of 1867, under the direction of S. E. Smith, M.D., President of the Board of health.

In the preceding year—1866—yellow fever had prevailed to a limited extent: the deaths from this disease never rose above 7 per day, very rarely above three. Five deaths occurred in August, 56 in September, 89 in October, 31 in November, and 4 in December; total, 185. In 1866, the mortality was almost entirely confined to persons unacclimated, and recently from foreign countries or Northern States. The first case known to have occurred was that of a Frenchman, who died with black vomit

at the Hotel Dieu, under the care of Dr. Boyer, on the 10th of August. This man had not been out of the city for several months, save to hunt and fish. On the Sunday prior to his attack he had been on one of these excursions, and complained on his return of fatigue and weariness. It was a month before any other fatal case was reported. The Board of Health was unable to trace the introduction of the disease through the quarantine.

In 1867, yellow fever appeared in June; the first case died in the Charity Hospital on the 10th of this month. The Board of Health were unable to trace its introduction from without. The fever existed throughout July, in the city, and until near the middle of August, before acquiring epidemic proportions.

Every house where a case was reported as having occurred was, under the direction of the health officers, cleansed and fumigated with sulphurous acid gas and carbolic acid gas; the premises likewise were subjected to the provisions of the health ordinance, and the privies purified by the sulphate of iron. Notwithstanding these measures the disease became epidemic, an immense number of cases occurred, and 3107 deaths were reported as directly caused by yellow fever, in addition to 990 deaths caused by the various forms of paroxysmal and continued fever. The President of the Board of Health, Dr. S. A. Smith, affirmed that the action of the cause of yellow fever was never before more general upon the population. Very few of the susceptible escaped, yet the mortality from it was exceedingly small, estimated as to the number of inhabitants, and particularly as to the number of cases. The number of susceptible subjects was larger from there having been no epidemic since 1858, so that all children under 8 years were susceptible. Dr. Smith says: "The smallness of the mortality may be attributed in great part to there being little immigration from Europe, and from the large increase in colored people, in whom the tendency of the disease is to recovery."

In 1869, only three deaths were recorded as due to yellow fever—one in July and two in October.

1870. During the summer and autumn of 1870 the deaths from yellow fever, as reported by the Board of Health, numbered 587; but it is worthy of note that other forms of fever, chiefly malarial, caused 591 deaths; total from fevers in 1870, 1178. Of this number, 241 were recorded as due to pernicious and congestive fevers. The first death is said to have occurred on the 2d of June. The subject, an officer on the steamer "Agnes," had recently returned from a trip to Honduras, having touched last at Port Cavallo. He arrived May 16th, and died June 2d. No other cases of sickness occurred among the officers and men of the Agnes. According to the report of the Board of Health, the premises, bedding and clothing, were fumigated three times with chlorine, and no case occurred in that immediate vicinity in the Fourth District during the remainder of the year. The next case, in the First District, was at 186 Dryades street,

September 6th, an Italian from the French Market; September 7th, two cases at 481 Rampart street, both Italians; September 12th, one case on Girod street, near Camp. The first case reported in the Second District was taken ill August 14th, and died August 19th.

For a short time the disease appeared not to increase; an examination of the mortuary reports shows, however, that a number of Italians died soon after in the same neighborhood, but that the certificates state deaths to have been caused by some of the forms of malarial fever. Dr. White, the President of the Board of Health, affirmed that these should have been placed to the account of yellow fever.

The first case of yellow fever in the Third District occurred at 155 Piety street, and the second at 312 Lafayette street—both Italians.

The first case in the Fourth District was on Ninth street, September 30th, a butcher from the French Market, which proved fatal; the first case in the Fifth District, September 27th; the first case in the Sixth District, October 4th.

In the Second District, the disease was epidemic only in that portion included between St. Ann and Barracks streets inclusive, and the river and Rampart street. Another infected part of the city was in the vicinity of Girod street. In the district extending from the river to the Girod street Cemetery, and from Poydras to Delord, 62 cases occurred out of 134 reported in the whole First District.

A marked peculiarity of the disease, in its course, was the rapidity with which it increased in the first five weeks, showing its tendency to become epidemic, and afterwards the long period in which there was little change in the weekly mortality from it. The weather, for a month previous to the appearance of yellow fever in 1870, had been very warm and sultry, with daily rains, and close, unpleasant nights. After the disease had made some progress, the weather became exceedingly dry, and at the period when the disease was at its maximum, the weather became quite cool, steady north winds prevailing, with hot sun and increasing dryness. There was no rain for six weeks. It has been urged that the unusual course of the disease was due mainly to these climatic causes.

According to the published statement of the President, all cases that came to the knowledge of the Board of Health were treated by the free use of such disinfectants as chlorine, sulphurous acid, carbolic acid and lime.

Dr. Albers, who had charge of the Second District, in which 399 deaths occurred, out of a total in the entire city of 587, says:

"In every instance, when a case of yellow fever took place, the house where it occurred, also its immediate neighborhood and premises, were disinfected, by setting free chlorine and sulphurous acid gas in the rooms where death had taken place. The

gutters of the yard were sprinkled freely with copperas and carbolic acid, and the carbolo-hydro-chloric of iron used as a permanent disinfectant about the sinks, privies and vaults. The streets and gutters of that portion of the district where the disease prevailed were also disinfected, September 14th, by distributing five barrels of lime throughout that particular locality, and following it up on the 15th by distributing two barrels of carbolic acid, containing 100 gallons, on the same ground. As this appeared to have the desired effect—to check the disease from spreading—and the quantity being barely sufficient to give the infected locality a small quantity all around, 200 gallons more were applied on the 19th, 200 on the 20th, and 200 on the 22d. As it evidently," continues Dr. Albers, "appeared to check the disease at the time and arrest its progress, the disinfection by carbolic acid was repeated on the 24th, 26th and 27th. The duty was invariably performed at night, to enable the antiseptic properties of the carbolic acid to exert its full influence before the heat of the sun should evaporate it."

It is evident from the preceding statement, that Dr. Albers used about one thousand three hundred gallons of carbolic acid in this infected district in the course of twelve days, and without arresting the disease in the month of September, or in the succeeding months of October and November.

According to his own statement, 210 deaths occurred from yellow fever in this "*disinfected*" district in September, 165 in October, and 20 in November.

How much carbolic acid was used in the month of October we are not informed, but it is evident that the disease, as usual, declined as the season progressed and the weather became dryer and cooler. And it is still further worthy of note that the highest mortality in the Second District occurred on the 27th of September, viz., 22 deaths, immediately after the most liberal and energetic use of the carbolic acid.

In the city generally, the monthly mortality by yellow fever was as follows: August, 3; September, 231; October, 242; November, 106; December, 5; total, 587. In other words, the heaviest mortality occurred in the month of October, after the thorough installation of the "carbolic acid disinfection."

1871. The first case of yellow fever reported died in the Charity Hospital, August 4th; the second case, August 20th, after five days' illness; third, September 5th, after six days' illness. In July 1 case, 1 death; August, 2 cases, 2 deaths; September, 37 cases, 9 deaths; October, 53 cases, 22 deaths; November, 33 cases, 19 deaths; December, 2 cases, 2 deaths. Total cases reported, 114; total deaths, 54; the enormous mortality being reached amongst these sporadic and "*disinfected*" cases of 47.3 per cent., or one death in 2.1 cases. The disease was chiefly confined to the Fourth District, and it has been claimed that its limited spread was mainly due to the liberal use of carbolic acid. Sporadic cases, however, appeared in various sections of the

city, and the disease, as in numberless other years, in this and other Southern cities, in which neither carbolic acid nor any other disinfectants were used, showed no disposition to spread. The fact that in certain Southern towns the disease exhibited a tendency to spread, did not indicate anything more than what had often occurred before in the history of yellow fever, on the Atlantic and Gulf coasts.

1872. The epidemic of this year, if it could be called such, was still more limited, only 83 cases and 39 deaths having been officially reported. The monthly deaths were as follows: August 1, September 5, October 24, November 7, December 2. On the other hand, the so-called congestive fever destroyed 165.

The disease was widely scattered over the city, commenced late in the season, and showed no tendency to spread; 17 cases were reported in the First District, 4 cases in the Second District, 1 case in Third District, 59 cases in Fourth District.

The mortality of these "disinfected" cases was in like manner great, reaching near fifty per cent.

1873. The first case of yellow fever which occurred in 1873 was traced to the bark Valparaiso, which, after a so called thorough disinfection and fumigation at the Quarantine Station, arrived in New Orleans June 26th. The first case occurred on the 4th of July, and died on the 8th. Of the 226 deaths by yellow fever only 68 were Americans. Of the 388 cases and 226 deaths, the monthly record was as follows: July, 8 cases, 3 deaths; August, 40 cases, 19 deaths; October, 135 cases, 79 deaths; November, 22 cases, 17 deaths.

The President of the Board of Health states that the above were all that were reported to the Board of Health, "though probably 10 per cent. of all the recoveries were not reported. Many physicians did not report their cases until the strongest evidences of dissolution were apparent."

If this statement be true, as it undoubtedly is far within the actual bounds of the cases not reported, and if at the same time it be affirmed that the disease was limited and arrested by the "carbolic acid disinfection," why, it may be asked, did yellow fever not spread from those centres where it was not reported, and in which no disinfection of any character was practised?

These facts, on the contrary, show in the clearest manner that the limited nature of the epidemic was due to the peculiar conditions of the climate and population. One essential element was wanting—strangers, unacclimated persons from Europe and the colder regions of America.

It is worthy of note, that in 1873 the various forms of fever, exclusive of yellow fever, caused 537 deaths, of which number congestive fever caused 246 deaths, and the so-called malarial fever 109 deaths. The total deaths from fevers in 1873 numbered 763

The following is the record of deaths from yellow fever in New Orleans during the carbolic acid disinfection.

1867	3107	deaths.
1869	3	"
1870	587	"
1871	59	"
1872	39	"
1873	226	"
Total deaths from yellow fever	4021	"

If 1867 be excluded, we have 914 deaths caused by yellow fever during a period of 5 years. The disease evidently formed no lodgment in the city in 1869, and if the three deaths credited to that year be excluded, we have a total of 911 deaths from yellow fever in 4 years, during which time the so-called "disinfection by carbolic acid" has been carried on, upon a larger scale than ever before in the history of medical science. If to this number be added those cases which were undoubtedly yellow fever, but reported as pernicious and so-called congestive and malarial fever, it will be fair to add at least one-half more, giving at least 1361 as the mortality due to this disease under the so-called "carbolic acid disinfection," and the "period of the limitation and arrest of the disease."

The following are well established facts in the history of yellow fever:

1st. Yellow fever may prevail in one or more cities, and at the same time be entirely absent from other cities in the same zone and subjected to very nearly the same hygienic conditions. The mere absence of yellow fever from a particular city, whilst it is prevailing elsewhere, proves nothing as to the mere sanitary condition and measures of the city enjoying the immunity. One of the most essential elements for the origin and spread of the disease is the influx of strangers and immigrants, and an unacclimated population.

2d. It is not probable that a wide-spread epidemic of yellow fever would ever arise in a city in the tropical and sub-tropical regions in which the vast proportion of the inhabitants are acclimated and have been subjected to the action of the poison of yellow fever.

3d. Yellow fever has been entirely absent from New Orleans during long series of years, as from 1717 to 1796, 1803, 1805, 1806, 1807, 1808, 1810, 1813, 1814, 1815, 1816, 1821, 1859, 1860, 1861, 1865.

4th. In New Orleans yellow fever has often prevailed to a limited extent, and caused only a limited number of deaths annually, when no "carbolic acid" nor any other agents were used for purposes of disinfection; as in 1818, yellow fever caused 115 deaths; 1822, 808; 1824, 108; 1825, 49; 1826, 5; 1827, 109; 1828, 130; 1829, 215; 1830, 117; 1831, 2; 1832, 18; 1833, 210; 1834, 95; 1836, 5; 1839, 17; 1840, 3; 1842, 211; 1844, 148; 1845, 2; 1846, 100; 1851, 16; 1856, 74; 1857, 199.

The great epidemics occurred in the following years, and caused the following mortality: 1817, 800; 1819, 425; 1829, 900; 1832, 442; 1833, 1000; 1837, 1300; 1839, 800; 1841, 1325; 1843, 487; 1847, 2259; 1848, 850; 1849, 737; 1853, 7970; 1854, 2423; 1855, 2670; 1858, 3889; 1867, 3087; 1870, 587.

5. Similar facts have been observed in other cities, as Charleston, Norfolk, Va., Baltimore, Md., Philadelphia, New York, and Mobile, as were fully illustrated by statistics laid before the concourse of physicians.

REMARKS OF PROF. E. S. LEWIS, M.D.

The subject under discussion, or carbolic acid disinfection as at present carried out, may be considered under two heads.

1st. As to whether it destroys the germs of yellow fever and prevents its spread; and secondly, as to whether its use is not injurious to those sick with the fever, and to the delicate with inherited or natural tendencies to diseases of the brain, heart, lungs, and urinary organs.

Taking into consideration the first division of the subject, I will state that its use, or rather abuse, is not of very recent date in the history of our Boards of Health; for as far back as 1867, at which time I was health officer, not only under my supervision were yards, privies, and gutters thoroughly disinfected, but by means of a pump it was also thrown over the floors, walls and ceilings of the houses, with the hope that the germs might be destroyed and the fever arrested. It had no effect whatever; the disease soon extending to every part of the city in the most rapid manner—under the "genius epidemicus," if you will—which favored the rapid propagation of the yellow fever germs; and if since then no epidemics have occurred, it is unquestionably because the necessary conditions have not been present. It has at no time, however, been rooted out of the city, and if my memory serves me right, this is the first year since the great epidemic during which I have not had cases under treatment. If, then, carbolic acid is such an effective agent in the suppression of yellow fever, why should the disease not stop short of the first cases, when upon its first appearance such extraordinary measures are adopted for its arrest? It should not extend beyond the focus of infection; and yet we hear of its existence in different localities presenting all the requisites in the way of numerous foci of infection for its epidemic spread, excepting the most necessary—that which I stated was formerly designated as the "genius epidemicus," or "constitutio pestilens."

I do not question the usefulness of carbolic acid as a purifying agent in arresting fermentative processes in decomposing vegetable and animal substances, but to accomplish this, there must be contact of the acid in a state of solution, and not in a vaporous condition. This is the statement of Gubler, the Professor of

Materia Medica and Therapeutics in Paris, but I will quote his own words on the subject of carbolic acid disinfection.

Of this agent he says: "It possesses astringent properties like tannin. It is not a true disinfectant, for it does not destroy the products of organic decomposition nor suppress the fœtor arising therefrom. It simply masks the putrid odor by substituting its own, which is not agreeable. It does not suspend putrid fermentations except where used in large quantities, and probably through its coagulating action over albuminoid materials, particularly those acting the part of ferments, solutions of $\frac{1}{100}$ to $\frac{1}{200}$ dilution being sufficient to destroy them.

"It is without action on the infusoria of the blood (Danion). Bacteria and vibriones resist the action of creosote, on which their germs can even develope (Ester and Bechamp). Furthermore, we know from the experiments of Lemaire that pectic, sinapisic, and amygdalic fermentations are not at all arrested by it.

"I would therefore conclude that this substance does not influence the phenomena of fermentation except by a chemical action of tanning, or if we like better, of mummification of microscopic beings; from which we can readily understand its efficacy in destroying the organisms of the two kingdoms. It can be used to disinfect wounds, furniture and restricted parts of houses, but it is difficult to understand its use in a state of vapor to purify large spaces, such as garrets, barracks, hospitals and dissecting rooms." And I will add here, much more difficult to disinfect the atmosphere of a large city, or if that is not the object, to destroy the germs of disease that may be on or near the surface of the earth.

Another author, Prof. Ringer, of London, remarks as follows: "Its destructive influence over the low forms of animal and vegetable life has led to its being considered a disinfectant, but no satisfactory proofs exist of its capability to destroy the contagious elements of disease."

In my opinion its efficacy is as questionable and as irrational as the following suggestion of an author of the 17th century, enthused with the parasitic theory of the origin of diseases, that the people should sally forth in the infested districts, and by sounding horns and firing cannon expel the invaders which he likened to a cloud of locusts.

The second proposition, as to whether its use is injurious or not to the community, will now be considered.

In the first place we have met together to night, not so much to discuss the efficacy of carbolic acid in arresting the spread of yellow fever, for if that were all, we could offer no reasonable objections to its use as a legitimate experiment in the interest of science, but our individual experience has unfortunately brought to our notice many instances of its deleterious action, where even life itself has paid the forfeit.

Such cases have been reported in the preceding meetings,

held in the Second District, and it cannot be wondered at, that such serious opposition to its use should be manifested by the disinterested members of the medical profession. Numbers of persons living on those streets where this toxic agent was thrown, have been affected in various ways with giddiness, nausea, vomiting, diarrhœa, a sense of suffocation; in other words, with manifestations of its poisonous action.

Let us now compare these symptoms with the accounts of its toxic actions and we find them identical, and differing only in degree; for we read in Stille's work that an atmosphere of carbolic acid is speedily fatal to animal life; the autopsies of such as succumb revealing congestion of the brain and its membranes, of the alimentary canal and of the lungs.

Waldenström has called attention to the irritation of the urinary organs which carbolic acid sometimes occasions, even when externally applied. Now, taking into account the effects of this noxious substance upon the body in a normal condition, I contend that far from arresting the spread of yellow fever, it would conduce rather to its extension by destroying the "equipoise of the organism," by which its susceptibility to the action of the poison would be increased; whilst to the sick its effects are in the highest degree pernicious. Who can say whether the fatal epidemic of Memphis was not owing to the combined action of the two toxic agents, or that the malignant type of the fever which has appeared in New Orleans sporadically since 1867 does not owe its virulence to the same cause. It cannot be otherwise, when we know that in yellow fever there is a natural tendency to congestions of the very organs which are most affected by carbolic acid—the brain, stomach and kidneys; and as in a healthy state of the body we have evidences of such congestions in the symptoms already described, after its inhalation, how much more characterized must they be when the susceptibility is increased by disease. Those opposing this view might state that its diffusion in the atmosphere sufficiently dilutes it to prevent such effects; but I will state that carbolic acid is a most powerful poison, even when largely diluted, as many reports of deaths from its use will attest. Its volatility renders it easy of absorption, and through the cutaneous and respiratory surfaces it finds an easy entrance in the body. As an example of its toxic action, I will cite a case reported in the *Journal of Pharmacy and of Chemistry* published July, 1874, Paris. It is headed, Extraordinary Death from the Inhalation of Carbolic Acid. "Mr. Capel, an English chemist, was suffering for fifteen days with toothache. He shut himself up in his room, and a few hours after was found dead on the floor. Dr. Metcalf, who was called in, thought that Mr. Capel had fixed an elastic tube ten feet in length to a large bottle of carbolic acid, and had then sat down on a chair, placing the extremity of the tube in his mouth for the purpose of allowing one drop to fall on the tooth, but the volatile poison overcame him, he became giddy and fell;

the poison continued to flow in his mouth, and soon the movements of the heart ceased, and he died. The jury returned a verdict of death from the accidental inhalation of carbolic acid as a remedy for toothache."

"Mr. Macnamara dressed an abscess of the axilla, which he had opened, with a poultice containing this substance, and a few hours after the infant who had been nursing became affected with a copious diuresis, and its clothes were covered with stains of a deep inky color."

From its great volatility, and from its rapid absorption by the skin, Stille remarks that "carbolic acid" may become a mortal poison, and should be used with great circumspection.

These few instances cited, and the many others reported in various journals, prove that this powerful substance is used too rashly in medicine and in surgery, and our Board of Health—no doubt actuated by the best of motives—would do well to bear in mind that individual susceptibilities can make of its vapor, in a state of atmospheric dilution, a fatal poison to many.

REMARKS OF Y. R. LeMonnier, M.D.*

Member of the Board of Health, Lecturer on Pathological Anatomy and Histology, Charity Hospital Medical College, Visiting Surgeon Charity Hospital.

Is carbolic acid a disinfectant? Is it a preventative of yellow fever? Has it done any good towards preventing or arresting an epidemic of yellow fever? If so, where are the proofs?

Mr. President:—The excessive sprinkling of the streets of our city with CRUDE carbolic acid lately, for the purpose of arresting the march of yellow fever, has so incensed our population on account of its deleterious effects, that I consider it my duty, as a member of the Board of Health, to make a few remarks.

1st. What is *crude* carbolic acid? It is a heterogeneous substance derived from coal. It contains, among other things, naphthaline, a substance of a very disagreeable odor, consisting of hydrogen and carbon. It is inflammable, and of a bitter, pungent taste. Carburretted hydrogen we know to be an impure gas, unfit for respiration. Besides this, there are various other substances, as disagreeable to the smell as naphthaline. From 20 to 25 per cent. only of this substance is carbolic acid. This heterogeneous substance does not mix with, nor dissolve in water. It remains on the streets where it has been deposited to be destroyed by the slow combustion of the rays of the sun. In the meanwhile, these disagreeable and mephitic gases are constantly arising from the soil, poisoning the atmosphere and causing headaches, sick stomachs, etc.

I am satisfied, Mr. President, that if this *crude* carbolic acid

*NOTE. This paper was read before the Board of Health of the State of Louisiana, on the 2d of October, 1875, and before the meeting of physicians, at the University Medical Building, on the 6th of October, 1875.

was done away with entirely, and only the *pure* acid employed (one part to 50 or 100 of water), that the inhabitants would not be inconvenienced and the experiment continued.

Before discussing the question whether or not carbolic acid is a preventative of yellow fever, I think it proper to say a few words on its physiology. From the experiments of Lemaire and Waldemar Hoffman on animals and man, the result was that carbolic acid is a violent poison of the nervous system, having a marked effect on respiration, secretions and excretions, whether it be used inwardly or outwardly. In a somewhat concentrated solution ($^1/_{500}$ to $^1/_{300}$) it kills the germination of the inferior vegetables. The prolonged use of the drug in small doses, say L. and H., produces a diarrhœa, and the animal dies exhausted. I have had the proof of this in one case of yellow fever in which the drug was taken inwardly. The fever continued its usual course, the patient having had diarrhœa, which was stopped when the use of the drug was discontinued.

From the experiments of M.M. P. Bert and Jolyet, it was proven that when the acid was taken in poisonous doses (60 to 80 grains), the animals were seized with convulsions, accompanied with titubations sui generis, due to the effect on the spinal marrow. In fatal doses (120 to 180 grains) the animals (dogs) were killed instantly, without convulsions. In small doses, it may be administered without danger for several months.

But carbolic acid has its adherents, and among them we see men of the highest authority. In fact, some see in this agent a universal panacea, and would have it employed as a curative means in all infectious or contagious diseases—cholera, small-pox, measles, yellow fever, etc. This same idea was entertained, some years back, in regard to camphor. Would that this hypothesis were true! It is pleasing and seductive. But is it positive that it kills the germination of the inferior vegetables? The experiments of M.M. Bert and Jolyet do not prove it. Experimenting on the bacteriæ of vaccine virus and the pus of small-pox, they conclude that the pure aid, placed in contact with the bacteriæ, kills, but if diluted to only 1-10th its strength, it is powerless.

Albumen has been found in the urine of carbolized patients. The celebrated surgeon Lister uses this drug, in some cases pure, in others diluted 1 to 4 in oil. For him, there is nothing superior to it as an antiseptic. He is one of its most fervent adherents. In my wards at the Charity Hospital, I have for the last four years made a free use of carbolic acid in dressing wounds with a very good result. Latterly I have used spirits of camphor almost exclusively, and the result is as satisfactory.

In France, some authorities (Bouley and others) approve very much the use of the acid as a disinfectant and curative agent, intus et extra, in the treatment of the cattle plague. On the other hand, later reports coming from England are most unfavorable to its use—some authors going as far as to say that more cattle died by its use than would have perished without it.

Dr. R. Lightfoot, of England, reports a case in which, on three consecutive occasions, his patient was so affected by the application to her wound (resection of the elbow), of a diluted solution of carbolic acid, as to show symptoms of an intoxication, such as chills, small and irregular pulse, cold skin and collapsus. The carbolized wash being discontinued, these symptons ceased. Dr. L. reports other cases of poisoning, but to a milder degree, and in particular uncontrollable sick stomachs, which he could only account for by a carbolized intoxication. Is not this what has happened to our citizens from an abuse of crude carbolic acid?

The result of these preliminary remarks, Mr. President, is that, knowing the danger which might arise from an abuse in the use of pure carbolic acid, and especially the crude one, I am decidedly opposed to sprinkling the streets of New Orleans with the *crude* carbolic acid, which *cannot be diluted.*

Do not understand me, Mr. President, to say that I am opposed to any experiment. Such have never been my views. I am from the modern physiological school, that of experiments, appreciate the valuable services which it has rendered to humanity within the last twenty years, and never hesitate to sacrifice an animal (may it not displease members of the "Cruelty against Animals Association") when any benefit *might* be derived for the good of humanity. But when an experiment on such a grand scale as the sprinkling of the streets with *crude* carbolic acid is on the *tapis*, we must be sure first that we will not make "the sick worse and the well sick." And unless we are sure of that from the start, I cannot for a moment approve such an experiment.

The next question, Mr. President, is, "Does carbolic acid prevent the breaking out of yellow fever?" The fact that we, this year, have had it in the city, and have had it every year since it was first used in 1869, is a negative answer. I think the Board never pretended otherwise.

3d. Does it prevent its spread? The fact that this year, as on former occasions, after breaking out in one place it has done so in other localities, again gives us a negative answer. Besides it has again broken out in the same house and on the same squares, after a thorough disinfection of the premises. See list of yellow fever cases of this year.

4th. Does it prevent the distemper from becoming epidemic? Here, Mr. President, is the great question, and this seems to be the belief if not the conviction of a majority of the Board. Mr. Bayley very complaisantly states facts, which he considers *conclusive beyond a doubt*, that, since 1870 that the crude acid has been sprinkled about the streets, and the diluted pure acid in the houses, *we have not had an epidemic.* How does Mr. Bayley account for the absence of an epidemic in the following years, when crude or pure carbolic acid as a disinfectant was unknown?

In 1823 we had 1 case of yellow fever in Charity Hospital.

1824	"	167	cases	"	"	"	"
1825	"	99	"	"	"	"	"
1826	"	24	"	"	"	"	"
1827	"	372	"	"	"	"	"
1828	"	290	"	"	"	"	"
1829	"	435	"	"	"	"	"
1830	"	256	"	"	"	"	"
1831	"	3	"	"	"	"	"
1836	"	6	"	"	"	"	"
1838	"	22	"	"	"	"	"
1840	"	100	"	"	"	"	"
1845	"	1	"	"	"	"	"
1846	"	146	"	"	"	"	"

The above number of cases are those admitted in the Charity Hospital exclusive of those in the city, and yet no epidemic.

In 1850 we had 97 deaths throughout the city, and no epidemic.

In 1854 we had an unknown number of deaths throughout the city, and no epidemic.

In 1857 we had an unknown number of deaths throughout the city, and no epidemic.

In 1859 we had 92 deaths throughout the city, and no epidemic.
In 1860 " 19 " " " " " "

There, Mr. President, is a number of years—19—taken at random, during which we had yellow fever, but no epidemic, and *no carbolic acid* used. Add to these the six years from 1869 to 1874 inclusive (and I might say 1875, for we will have no epidemic this year), with yellow fever and no epidemic, but *carbolic acid* used. This makes a total of 26 years with yellow fever and no epidemic, *whether carbolic acid was or was not used.* What does this prove? That there is something in common with these 26 years which prevented the fever from becoming epidemic. That something, was the "medical constitution;" it was not of an *epidemic* nature, and therefore we had no epidemic.

Now, it will be said, "But since the use of the acid we have had *no epidemic.*" That is true; but alas! this does not prove that we will not have any more. I hope we never will.

No, Mr. President, let us not be deluded by a false hope. Let us, however, continue the use of *diluted pure* carbolic acid—inasmuch that authorities from across the Atlantic report good results in cholera epidemics—or the use of all means at our disposal to check or mitigate this terrible enemy of mankind (yellow fever); but let us use these disinfectants in such a manner that if they do no good they will do no harm.

Let us not forget what our predecessors have said; let us profit by their experience. On pages 5 and 6 of the Report of Board of Health for 1829, Drs. E. H. Barton, Y. R. LeMonnier,

Sr., and T. G. Browning, Committee, say: "It will be perceived that the mortality from the class of *fevers*, the great outlet of human life in the South is small, constituting about 14.58 per cent. of the entire mortality, of which more than half (or 55.30 per cent.) is from *yellow fever*, and is embraced with it, as they both essentially belong to the place and differ but little. Whether we shall ever get rid of the latter, is a problem impossible to solve with the lights at present before the profession; *we don't know its cause* (*causa sine qua non*). That all fevers, this inclusive, will be more rare as the laws of general and personal hygiene are applied to communities and individuals, we know, from the results of actual experience, and therefore there is no doubt, as these improvements progress, yellow fever will, as already remarked by professional men, lose its individuality and become blended with ordinary fevers; once very distinctly marked, now many cases puzzle even the most experienced in its diagnosis; formerly clearly an acclimating fever (probably the only acclimating fever known), now so indistinct are its features, often, that many of the profession believe it can be taken over and over again, and that even those 'to the manor born' are subject to it. In tropical countries, all unacclimated persons are subject to it at levels below 2500 feet above the level of the sea, and particularly in the cities. In the West Indies, where civilization and refinement have progressed with the advancement of the age, we believe it is rare out of the cities. In Mexico, on the contrary, in its semi civilized state, where the grossest personal habits prevail with the mass, the residents of the "tierras frias y templadas" are constantly subject to it when they descend below the limits above indicated, into the "tierra calienté," or warmer regions. With us, then, there is every hope that, with the progressive improvements which are in accordance with the enlightened period in which we live, and which, of course, the public will adopt as soon as they clearly perceive them, we doubt not that yellow fever will follow in the train of all the other sanitary ameliorations. * * * * most probably owing to the successive improvements in the city, and particularly to the clearing and draining in the rear."

Are not these predictions verifying themselves every day? Do we not see the disease becoming more and more amenable to treatment? Do we not see more persons to-day recovering fro a the disease, after having had black vomit? Let New Orleans be raised a few more feet, its streets covered with square blocks, and the swamps between it and the lake cleared and inhabited, and proper *drainage* established, a copious, free and easy supply of water obtained, and you will see how healthy she will be. Yellow fever then will most probably be either unknown or less harmful than remittent fevers to-day.

On the subject of sewerage, the distinquished Dr. Southwood Smith says that "in every district in which fever returns frequently and prevails extensively, there is *uniformly bad sewerage*,

a bad supply of water, a bad supply of scavengers, and a constant accumulation of filth."

The next and last question, Mr. President, is, "An epidemic existing, does it arrest it? The experiment at Memphis has conclusively proven its impossibility, The fact that it does not stop our endemics would have brought us to conclude, *a fortiori*, that it was powerless against an epidemic.

From the preceding lines I conclude, Mr. President, 1st, that so far carbolic acid has done nothing against yellow fever, either in preventing its development, arresting its spread, or warding off an epidemic. What has happened since its use has happened before. 2d. The march of diseases depends on the "medical constitution" 3d. So far, the future health of New Orleans depends on proper sanitary regulations, as predicted by our predecessors. 4th. The use of crude carbolic acid should forever be set aside, as experience has proved that it positively does harm. 5th. Though, from the above facts, it is proven that carbolic acid has never done any good in yellow fever, the experiment might yet be continued with the pure acid diluted to its 100th or 50th part. 6th. Lastly (though the least when compared to health), in this our state of city financial poverty, the pure acid, being the best and cheapest, should above all be used. One gallon of pure acid, diluted in 50 gallons of water, cost $2 95, Fifty gallons of the crude acid, at 50 cents per gallon, cost $25.

REPORT OF COMMITTEE.

The committee appointed by Dr. Armand Mercier, at the meeting held in the central building of the University of Louisiana, September 29th, 1875, met in accordance with the appointment of the Chairman, Dr. Tebault, on the 1st of October.

The following members of the committee were present: Armand Mercier, M.D., C. Hamilton Tebault, M.D., John B. Henderson, M.D. Sabin Martin, M.D, J. H. Lewis, M.D., Joseph Jones, M.D..

The committee respectfully submit the following propositions, for the consideration ot the meeting of physicians to be held in central building of the University of Louisiana, October 6th.

1st. Carbolic acid, as used for purposes of "disinfection," by the Board of Health in New Orleans during the years 1867, 1870, 1871, 1872, 1873, 1874 and 1875, has failed to arrest smallpox, scarlet fever and yellow fever.

2d. Carbolic acid, as used for purposes of "disinfection," by the Board of Health in New Orleans, has in several instances proved injurious to the inhabitants of the "*disinfected*" districts.

3d. The facts observed in New Orleans, during the practice of carbolic acid "disinfection" upon a larger scale than ever before in the history of sanitary science, sustain the view held by high authorities, that it is impossible to disinfect the atmosphere of

an entire city, or even of a circumscribed area, as of two or more squares.

Cases of yellow fever have occurred in succession, at long intervals, in houses and localities which have been most thoroughly subjected to the so-called "carbolic acid disinfection." Instances have been observed where unacclimated individuals, returning from the country before cold weather had put an end to the disease, and entering those districts of the city in which carbolic acid had been most lavishly employed as a "disinfectant," have been attacked by yellow fever.

4th. Yellow fever has followed its usual course, increasing up to a certain period, and then declining with the fall of temperature and ceasing with the appearance of frost. No connection has been traced between the decline and cessation of the disease and the amount of carbolic acid used for purposes of "disinfection."

5th. The absence of wide spread epidemics in 1871, 1872, 1873, 1874 and 1875, is believed to be due, not to carbolic acid disinfection, but to the following causes:

1st. The great epidemic of 1867, and the serious epidemic of 1870, during which years a large proportion of the population were afflicted with the disease, or subjected to the influence of the yellow fever poison.

2d. The sporadic nature of the disease, and the small tendency to spread which it has exhibited during the years specified, no essential difference having been observed between its mode and rate of spread in "disinfected" and "non-disinfected" districts.

3d. The cessation of emigration and the diminution of commerce, resulting from various causes.

The preceding points appear to be sustained by the accompanying papers.

At a meeting of physicians, held in the central building of the Medical Department, University of Louisiana, October 6th, 1875, the preceding resolutions were presented by Dr. Armand Mercier, and were adopted.

CORRESPONDENCE.

DANVILLE, KY., October, 1875.

To the Editor of the N. O. Medical and Surgical Journal.

DEAR SIR:—That most subtle enemy of the human race known by the indefinite term *malaria*, has been unusually rife in this portion of the southwest during the present autumn. To the heavy rain-fall of the summer months, and the rank vegetation in consequence, the prevailing type of disease is being accredited.

More than the usual number of cases of typhoid fever have also been reported, and since the well-known tendency of malaria to complicate by its presence every form of disease has been observed, we heard much of *typho-malarial fever.* Under this condition of affairs quinia, of course, has been of almost universal application, and its specific or antidotal powers have been well illustrated.

It is in this character of disease that we can obtain the best results from the use of quinia, as advocated by Liebermeister, in his recent admirable treatise on typhoid fever in Ziemssen's Cyclopædia of the Practice of Medicine. He advises the use of the remedy in large doses to obtain its anti-pyretic influence, maintaining that in this way no larger quantity is used in the aggregate than when administered in tonic doses. By a large dose the temperature is promptly reduced, and the system so impressed as to remain under its influence for several days. In a typical case of typhoid fever occurring in the practice of the writer during the present season, the anti-pyretic effect of quinia was beautifully illustrated. The patient, a robust man, 29 years of age, gave a morning temperature of 107° F. Thirty-five grains of quinia were administered at once (twenty grains being given per enema) with the gratifying result of a reduction to 102° F. in six hours, and the thermometer never marked a higher temperature from that time until convalescence was established than 103° F.

It may be claimed that the effect of the remedy in this instance was entirely due to the malarial element mingled with the disease (of the existence of which there was no positive evidence); but, from our limited experience, we are inclined to accept the testimony of the eminent German referred to, as to the influence of the drug upon fever when given in anti-pyretic doses. The effect in this instance was marked and prompt, and exerted a favorable influence throughout the remaining course of the disease.

In malarial regions, the physician frequently finds it necessary to introduce quinine into the system through some other channel than the stomach when that organ is so disturbed as to reject everything introduced. It is by no means uncommon, either, to find that the stomach will not tolerate the remedy just at the time when its influence is most essential to the patient's welfare. In such a case recently in our care, the stomach and bowels were so irritable, and the indications for the exhibition of quinine so

imperative, that we were compelled to resort to the hypodermic method. On account of the irritating nature of this drug, when introduced in solution beneath the skin, a formula which will insure immunity from abscess has long been a desideratum with the profession. In the case referred to, the remedy was prepared after a formula which we have used several times, and in no instance has abscess followed, or any irritation additional to that observed after the injection of a pure solution of morphia. The formula is that of Dr. F. D. Lente, of New York, as given by him in the *N. Y. Medical Record* for October 1, 1874, and is as follows:

℞—Quiniæ sulphatis, grs. L (50),
Acidi sulphurici, - ♏vj,
Acidi carbolici, - ♏ij,
Aquæ distillat, - ℥j.

The quinia should be placed in a mortar and rubbed up thoroughly, and the strong sulphuric acid distributed over it and rubbed until well mixed; the water should then be added cold, and the whole placed in a porcelain dish over a lamp, stirring with a wooden spatula until it comes to the boiling point. When cold add the carbolic acid, and shake well in a bottle. It should then be filtered carefully through the best filtering paper. In administering the remedy after this method it is necessary to make several distinct punctures, ten or fifteen minims being injected at each point.

The question is often asked if the continued exhibition of quinine in large doses does endanger the sense of hearing? The physiological effects of the drug fully justify such a suspicion; and if we are not mistaken, medical testimony is quite conflicting on this point.

In view of this fact, we have been pleased to observe that at the late meeting of the "American Otological Society," at Newport, a paper entitled "Experiments on the Effects of Quinine on the Ear" was read by Dr. D. B St. John Roosa, probably the highest authority in this country on the affections of the ear. He detailed the results of experiments on a number of healthy persons (including among others Dr. W. A. Hammond), in which quinine was administered in large doses. It was ascertained that the entire intra-cranial circulation was affected, and the ear as well as the eye invariably became congested. In no instance has any disease of the ear been observed to follow the

exhibition of the drug in these experiments, nor has any impairment of hearing resulted in the individuals. It is stated that the paper elicited much discussion, and the opinions expressed were somewhat divided. It seems to us, that the experience of general practitioners throughout the South and West would go far toward settling this mooted and important point.

During the hot days of August and September, acute dysentery prevailed to a considerable extent in this vicinity. In former times (not a great many years ago) this disease was accompanied with much greater mortality than at present. There was a marked reduction in its fatality when the old treatment with calomel, opium, and acetate of lead, was supplanted by the more modern use of a saline purgative, following its action with decided doses of opium. The more recent treatment, and that generally adopted here, is followed by better results than the saline treatment, and consists in the use of ipecacuanha in non-emetic doses. That this is by no means a modern plan of treatment, the old synonym, *radix anti-dysenterica*, testifies; but since its revival a few years since, it has probably won more lasting favor than it has ever before enjoyed. So far as we have been able to observe, we consider it *the treatment* for acute dysentery. In fact, this plan of treatment is so implicitly relied upon by the profession here, that only a short time since we heard a physician of learning and extensive experience declare that so striking had been its results, he had come to regard ipecac in acute dysentery almost as much of a specific as quinine in intermittent fever.

The successful application of this remedy to the disease depends in very great part upon the manner in which it is administered; indeed, we are confident that a careless or improper administration of the drug, with a disregard of certain essential precautions, will account for the unsatisfactory results obtained by many practitioners. It may not be amiss in this connection to describe the proper method of its administration. The stomach should be as near empty as possible, its sensibility somewhat obtunded by a dose of morphia given hypodermically, and a sinapism placed over the epigastrium. These precautions observed, the ipecac should be given in the form of *the powder*, from thirty to sixty grains being taken into the mouth, and barely enough water given to wash it down. The use of the tincture or infusion will not be followed by such results as the powder, which

form should invariably be used in the treatment of dysentery, and fluids should, as far as possible, be abstained from by the patient.

In most violent cases of this dread disease, after pursuing this plan, the tenesmus and bloody mucoid discharges will, in from twelve to twenty-four hours, be superseded by painless fœcal evacuations.

With the return of the charming days of autumn comes the reassembling of medical classes in the various schools throughout the land. As to whether the demand of the public is equalled and not exceeded by the supply of the schools, seems to be receiving much attention from the medical press and medical instructors at the present time. That the supply will adapt itself to the demand in this as in other affairs of life is most probable; and it is to be hoped that the demands of the public will at an early day beget a more uniform standard of requirements for graduation on the part of the numerous schools of this country. We are pleased to observe that the medical class of the University of Louisiana will have several members from this State during the coming winter session.

I am, Sir,

Very respectfully,

ALUMNUS OF THE UNIVERSITY OF LA.

To the Editor of the New Orleans Medical and Surgical Journal:

In the May number of the *Journal* was published a petition, signed by a large number of practising physicians of New Orleans, praying the Board of Health to make a modification of the quarantine regulations enforced at the Mississippi Station. The reply of the Board, defining their position in regard to Quarantine, has not been published in your pages; but it may still be proper to inform the medical public that the law requires a definite course to be pursued.

In regard to the following statement in the petition, "After many years of experiment it has been clearly proven that quarantine does not protect this city from yellow fever," it may be observed that it does not admit of clear demonstration, one way or the other. Without claiming that quarantine affords complete protection, it may asserted that no yellow fever infection reach-

ing the city through the Mississippi Quarantine, either in 1874 or in 1875, has obtained a foothold in the city, nor even reached the city, except in a single instance in 1874, through neglect of disinfection at the Quarantine.

The Board of Health has given such careful consideration to the communication upon quarantine, received from sixty-three physicians of the city, as is due to their number, long residence, experience and general high reputation.

This communication does not definitely state whether by quarantine is meant detention merely of vessels, crews and passengers for a greater or less period of time, or a system of quarantine including among its measures inspection, detention and disinfection, nor does it define what is meant by protection of the city from yellow fever; evidently protection may be either complete or but partial.

Without discussion of these points, the Board of Health declares its position in reference to the subject matter of said communication as follows:

1. It is not clearly proven that quarantine does not protect the city from yellow fever. The presence of yellow fever may sometimes be due (a) to the survival of the poison during winter, and its increase and manifestation during the subsequent summer, or (b) to defective methods of administration, and not to radical error in the principle of a quarantine system. Moreover, either by logical result or fortunate sequence, during the twenty years of quarantine just closed, only three epidemics of yellow fever have occurred, while in the twenty years antecedent and just previous to the establishment of quarantine, eleven epidemics occurred.

2. In reference to a quarantine consisting merely of detaining for a greater or less number of days, the Board stated in its annual report for 1873. "It is evident that although the ten days now required by law may be a sufficient period of time to decide whether crew and passengers will be attacked with yellow fever, as regards rendering the vessel harmless to the community, time alone is an element of no value."

Were the recommendations of the communication adopted, passengers on Havana steamers could reach New Orleans from that port within the usual period of incubation of yellow fever—two to six days. It is generally admitted that the chief danger to a city lies in the transportation of yellow fever poison by holds of ships, cargoes and baggage, and that the disease is rarely, if ever, propagated from person to person. The presence, however, of a few cases of yellow fever in this city in June, July and August, would absolutely destroy its fall trade, which is of many more times value than its whole summer trade with yellow fever ports.

In the view of the facts now on record, and as at present understood, the Board of Health is fully persuaded of the great advantage to this port of a system of quarantine, which includes inspection, disinfection of vessels, and at least such detention as shall secure the city against the introduction of cases of yellow fever contracted in foreign ports.

As is generally well known, during several years past the Board of Health has endeavored with a fair degree of vigor and persistence to arrest the spread of yellow fever, and destroy its cause in its force of infection, whether on premises, in dwellings, or in holds of ships, and with some apparent success.

It is its purpose to continue these attempts, and if sufficient success be achieved, will promptly recommend to the General Assembly such modifications of the quarantine laws as is found to be compatible with the safety of the port and State.

The law of 1855 makes it the duty of the Governor to issue proclamation declaring any place where there shall be reason to believe a pestilential, contagious or infectious disease exists, to be an infected place, stating the number of days of quarantine to be performed; this proclamation to be made upon the advice of the Board of Health.

It is the duty of the resident physician to give timely notice to the Board of Health of the necessity of such proclamation.

Whatever may be the "zeal" of the members of the Board of Health in reference to quarantine—whatsoever may be the views held in their private capacities—as sworn and honest officers of the State, they must obey and carry out the law in its spirit to the best of their information and ability. The Board must err, if at all, on the side of the safety of the health and lives of the people, much as they may deplore any consequent injury to commerce.

It is the opinion of the Board that the continued prosperity and health of this city are inseparable; that it cannot expect to enjoy the numerous advantages which arise from a prosperous permanent population until its good health is a well established and generally recognized fact.

C. B. White, *Pres. Board of Health.*

Moss Point, Miss., Sept. 24th, 1875.

Dr. S. S. H.:—Dear Sir; I have been anxious to write and give you a description of the fever we have prevailing here, and hope you can afford me some light on the subject.

First, if it is yellow fever (and every physician who has seen it calls it so) we must give up the theory that yellow fever has a continuous temperature. I have seen quite a number of cases, and they present all the symptoms of yellow fever with that exception. For instance, in my own case my temperature varied

from 104½° to 99¾°—lowest generally in the morning. Twice when it was below 100° I took quinine; at both times the fever rose rapidly, and all the symptoms were aggravated. In all the cases that recover, the fever lasts from 3 to 6 days, and when it once goes entirely off, it never returns unless from some imprudence. Another peculiarity is, that generally on the second or third day an eruption makes its appearance on the body and arms—some on the face. This, if I had seen it in only a few cases, I would call "sudamina," which it resembles. If so, why is it so constant? We find it almost invariable. In some of the fatal cases I have not observed it. In all the cases that I have had an opportunity to observe closely, I found this variation in the temperature; yet we have such symptoms as suppression of urine, albumen, black vomit, congested eyes, and even the peculiar odor of yellow fever, and in almost every case there is irritability of the stomach with tenderness, some yellowness of the skin, but not so marked as last year. I will remark here also, that this variation in temperature has no regularity; for instance, it will vary from a half to two degrees several times in a day.

Can this be yellow fever with malarial complication?

As to treatment, that of yellow fever seems to be most successful; still there is a large per cent. of deaths. Those cases that take calomel act more kindly than those that simply take oil. Mr. C., a gentleman of this place, on last Sunday was feeling badly; had some fever. That night at 12 o'clock, temperature 101½°; 6 o'clock Monday morning, 100½°; Monday evening (6 o'clock), 101°; did not see him through the night; Tuesday morning (8 o'clock), 102½°; one hour and a half after, 102½°. I left him quiet, skin acting well, and had been ever since I first saw him. He became delirious in a few minutes, which increased so much that they had to hold him on the bed, and three-quarters of an hour from the time I tested his temperature last he was dead. He was a quite fleshy person. Saturday night he had taken a blue pill. Sunday night he took a dose of castor oil, which acted kindly; took nothing more save iced water, and once or twice orange-leaf tea. Vomited some (not black) in the commencement. Tenderness all relieved by mustard. He did not have a symptom that was not favorable when I saw him last.

I saw another case, a young lady, who died in the same way. Dr. M'L. told me her case was very much like the above. I only saw her in the last of it. I only mention these facts to show

you how deceptive some of these cases are, and how rapidly they may terminate fatally.

Dr. M'L., who has had more opportunities of observing this fever, has just told me that his experience coincides exactly with my own; and so does that of the other physician of this place.

The variableness of temperature is the pretext upon which Dr. L. claims that it is *not* yellow fever. S. A. M.

COLUMBUS, TEXAS, Sept. 29th, 1875.

Professor S. M. Bemiss, New Orleans:

DEAR SIR—I had quite recently an extraordinary obstetrical case, the details of which may furnish material for a paragraph.

Mrs. H., an English woman, aged about 26 years, advanced to the eighth month of her second pregnancy, called me on the the morning of the 6th inst. Found the patient suffering from a Pernicious Intermittent, and in the midst of the third paroxysm. A vigorous application of the usual remedies carried her through the cold stage, though it was not succeeded by much fever, nor did it endure long, passing off with a moderate perspiration, a somewhat feeble pulse, and considerable irritability of the stomach. Prescribed quinine, however, in 2 grain doses every two hours, which was tolerably well borne through the night and until ten o'clock next day, when her stomach revolted, and I immediately administered 5 grains hypodermically. This carried her past the critical hour without the recurrence of the chill. She had some fever directly after noon, and by 3 p. m. was half comatose. I saw her a few minutes before 4 o'clock and directed soap-and-water enema, after the administration of which, the nurse informed me she was losing some blood from the vagina. I returned to the room, and upon examination found the head of the fœtus, covered with the membranes, well down against the perineum, though there had not been the slightest complaint or manifestation of a labor pain or uterine contraction during her entire illness. The parts were quite relaxed—even destitute of ordinary tone—and some little hemorrhage oozing from the vulva. Being apprehensive of severe passive hemorrhage (the pulse being rather small, compressible, and 110 to the minute) I sent immediately for my instruments, and an hour and a half later applied the forceps carefully and removed the *fœtus*, *membranes*, *placenta* and all, perfect. There

was but little hemorrhage, the uterus speedily contracted to dimensions normal to the circumstances, and I began to feel hopeful for a favorable issue. Prescribed a strong brandy toddy, f℥ij every hour, but the stupor became deeper, attended with hiccough, more feeble and slower pulse, until 4 o'clock next morning, when death closed the scene without a struggle.

The fœtus was delivered dead, and had apparently been so for several hours. The husband was confident he *saw* it move about 10 hours before delivery—18 hours before the death of the mother. The secretion of urine was normal in quantity, "high colored," with a slight tinge of bile until the half coma that preceded the delivery nine or ten hours; after that period it was presumed to have passed involuntarily, as the bed linen was stained with and smelt of it. The emergency of the case and other demands prevented my examining it, though I doubt not it contained albumen in considerable proportion, as I have frequently found in other urine of similar appearance.

Yours truly, R. H. HARRISON.

EDITORIAL.

State Medical Convention.

The subjoined account of the organization of a State Medical Society in Arkansas is taken from the *Daily Arkasas Gazette* of October 13th.

In response to a call to the medical profession of Arkansas, containing two hundred and twenty-two signatures of physicians, all graduates of the profession of medicine, engaged in the arduous duties of its practice, and representing a majority of the counties of the State, there assembled yesterday morning (October 12th), in the United State Circuit Court room in Little Rock, at 9 o'clock, a very creditable number of delegates and representatives.

The convention was called to order by Dr. H. P. Crute, of Chicot county, who moved that Dr. John Kirkwood, of Pulaski county, be declared temporary chairman, which motion was unanimously adopted.

Dr. John Kirkwood, on taking the chair, stated the object and purposes of this convention in a few eloquent and appropriate remarks. He compared the exigency that had called together this assembly with the late political movement that finally resulted in the establishment of the present excellent State government with peace and quiet throughout the State. He addressed

himself feelingly to each physician, eulogised the profession, of which he was the oldest member present, urged the importance of continued exertion to keep themselves familiar with the advances in all the collateral sciences. His remarks were eminently judicious, pertinent and instructive to the members of the convention, and after taking the chair he was loudly applauded.

Dr. P. H. Ellsworth, of Garland county, was, upon motion, elected temporary secretary.

Dr. P. O. Hooper, of Pulaski county, moved that the chair appoint a committee of three on credentials, which motion was adopted, and the following members appointed by the chair, viz.: Dr. D A. Linthicum, of Phillips; Dr. C. S. Gray, of Washington, and Dr. R. G. Jennings, of Pulaski.

Dr. R. G. Jennings, of Pulaski county, moved that the chair appoint a committee of five on permanent organization, which motion was adopted, and the chair appointed the following gentlemen: Dr. Drake McDowell, of Garland; Dr. H. P. Crute, of Chicot; Dr. R. H. Jenkins, of Monroe; Dr. F. W. Burke, of Phillips, and Dr. E. T. Dale, of Miller.

A communication, purporting to bear the signatures of two of the original signers of the call was here received, and read to the convention, in which their names were desired withdrawn. The chairman instructed the secretary to comply with their wishes, no comment being made upon this procedure.

The call, with the two hundred and twenty-two names attached, was read, and upon report of the committee on credentials, was adopted in full. [The names are here omitted, as we have not space to insert them.]

Upon invitation extended by the chairman to any physician who had not signed the call, the following gentlemen came forward and attached their signatures, viz.: Dr. J. S. Shibley, of Sarber County, and Dr. C. H. Stanfield, of Dorsey county.

The committee on permanent organization reported the following names as officers of the convention, viz.:

For President—Dr. D. E. Byrd, of Phillips county.

For Secretary—Dr. E. T. Dale, of Miller county.

For Assistant Secretary—Dr. J. G. Eberle, of Sebastian county.

This report was unanimously adopted, and these gentlemen declared duly elected.

A special committee, consisting of Dr. E. H. Skipwith, of Pulaski, and Dr. J. S. Shibley, of Sarber, was, upon motion, appointed to escort the president elect to the chair.

Dr. D. E. Byrd, upon taking the chair, thanked the convention for the honor conferred.

Dr. W. B. Welsh moved that a vote of thanks be extended to Dr. John Kirkwood for his efficient services as temporary chairman. Carried.

Dr. E. R. DuVal, of Sebastian, moved that a committee on constitution and by-laws be appointed.

The president appointed Drs. A. Dunlap, J. A. Stinson, A. L. Breysacher, J. W. Davis, G. G. Baker, and W. W. Bailey, and upon motion, R. G. Jennings was added.

Upon the retiring of this committee; Dr. E R. DuVal read letters from sixty medical gentlemen, regretting their inability to attend the convention.

Upon motion of Dr. J. H. Lenow, the convention adjourned until 2 p. m.; at which hour the committee on constitution and by-laws reported, which was received and adopted section by section.

Dr. R. G. Jennings presented a charter for the society.

Upon motion, the convention adjourned sine die.

The State Medical Society meets this morning at 9 o'clock.

Received Too Late.

The following books and pamphlets have been received too late for critical review:

From the publisher, Henry C. Lea, Philadelphia, the Third American Edition of Taylor on Poisons ("from the third and thoroughly revised English Edition"). 1875.

From R. G. Eyrich, Bookseller and Stationer, 130 Canal street, New Orleans, the Second Revised and Enlarged Edition of H. C. Wood's Treatise on Therapeutics, Materia Medica and Toxicology: J. B. Lippincott & Co.; 1876. This work has received an extended and favorable notice in one of our previous numbers. The early demand for a new edition shows that it is highly appreciated by the profession. From R. G. Eyrich, Lectures on Diseases of the Nervous System, by Jerome K. Bauduy, M.D., Professor of Psychological Medicine and Diseases of the Nervous System, and of Medical Jurisprudence, in the Missouri Medical College. J. B. Lippincott & Co.; 1876.

From the authors—Scarlatina Statistics of the United States, by Thomas C. Minor, M.D., Cincinnati, Ohio; Statistics of Mortality from Pulmonary Phthisis in the United States and Europe, by Wm. Gleitsman, M.D., Baltimore.*

OBITUARY.

Died, in this city, on the 4th day of October, Mrs. M. F. B. LAYTON, wife of Dr. Thomas Layton.

* Dr. Gleitsman has just established a Sanitarium at Asheville, N. C., for the cure of pulmonary consumption. My colleague, Dr. Chaille, has visited and carefully inspected this institution, and considers it complete in its arrangements, and likely to prove of the highest utility in serving the ends for which it is designed.

METEOROLOGICAL REPORT FOR NEW ORLEANS.

Table I---September.

Day of Month.	Temperature.			Mean Barometer Daily.	Relative Humidity—Daily.	Rain fall—inches
	Maximum.	Minimum.	Range.			
1	89	76	13	30.101	76	.00
2	90	75	15	30.060	73	.00
3	90	75	15	30.015	71	.00
4	87	77	10	30.000	73	.00
5	89	77	12	30.067	75	.00
6	90	76	16	30.085	70	.00
7	92	77.5	15.5	30.030	65	.00
8	93	78	16	30.029	67	.00
9	94	80.5	11	30.125	72	.00
10	91.5	78.5	13	30.125	68	.00
11	91.5	77	10	30.025	71	.00
12	87	77	8.5	30.015	78	.11
13	85.5	73.5	12 5	30.071	75	.00
14	86	75	12.5	30.038	65	.14
15	87.5	79	7	29.906	82	.00
16	86	78	10.5	29.875	80	.00
17	88.5	78	7	29.747	83	.40
18	85	65	9	29.710	73	.00
19	74	59.5	15.5	29.900	52	.00
20	75	63	13	30.049	54	.00
21	76	60	15	30.173	47	.00
22	75	60	17	30 235	53	.00
23	77	61	21.5	30 154	70	.00
24	82.5	68	10	30.112	86	.70
25	78	69	. 9	29.9 4	91	5.42
26	68	63.5	5	29 956	86	.18
27	69	62	7	29.985	81	.00
28	76	65 5	10.5	30.128	75	.00
29	74	65	9	30.167	81	.00
30	82	66	16	30.040	77	—
Mean..	83.25	71.18	12.07	30.028	72.03.	Total. 6.95

Table II---October.

Day of Month.	Temperature.			Mean Barometer Daily.	Relative Humidity—Daily.	Rain fall—inches.
	Maximum.	Minimum.	Range.			
1	80	66	14	30.046	62	.00
2	73	60	13	30.232	55	.00
3	76	62	14	30.264	81	.00
4	78	69	9	30.163	87	.21
5	80	69	11	30.090	91	.24
6	83	71	12	30.015	82	.00
7	79.5	71	8.5	30.119	72	.00
8	76	60	16	30.145	54	.00
9	78	60.5	17.5	30.069	59	.00
10	77	62.5	14.5	30.019	66	.00
11	79.5	63.5	16	30.071	66	.00
12	79	58.5	20.5	30.259	51	.00
13	71	57.5	14	30.255	55	.00
14	77.5	58	19.5	30.141	70	.00
15	68	62	6	29.994	61	.31
16	68	51.5	16.5	30.125	55	.00
17	71.5	53.5	18	30.210	51	.00
18	78 5	59	19.5	30.179	58	.00
19	64.5	51	13.5	30.285	51	.00
20	70	50.5	19.5	30.251	61	.00
21	73	54.5	18.5	30.204	66	.00
22	75	58	17	30.097	72	.00
23	77	61	16	30.030	74	.00
24	81	62	19	30.020	78	.00
25	82	65	17	30.044	76	.00
26	73	66	7	30.166	61	.00
27	74	57	17	30.210	59	.00
28	80	59	21	30.154	78	.00
29	82	71	11	30.098	84	1.15
30	68	61	7	30.256	52	.00
31	68	54 5	13.5	30.331	57	.00
						Total.
Mean..	75.52	60.79	14.73	30.147	66.00	1.91

Mortality in New Orleans from August 30th, 1875, to October 31st, 1875, inclusive.

Week Ending	Scarlet Fever.	Malarial Fevers.	Consumption.	Diarrhœal Diseases.	Yellow Fever.	Total Mortality.
Sept. 5.....	5	11	22	1	3	138
Sept. 12.....	6	16	11	8	4	140
Sept. 19.....	3	24	12	8	3	129
Sept. 26.....	7	27	22	8	9	139
Oct. 3.....	7	20	20	7	7	129
Oct. 10.....	5	20	15	5	7	114
Oct. 17.....	4	12	15	6	2	104
Oct. 24.....	6	17	13	7	4	123
Oct. 31.....	3	5	15	5	3	116
Totals.....	46	152	145	55	42	1132

THE

NEW ORLEANS

MEDICAL AND SURGICAL JOURNAL.

JANUARY, 1876.

ORIGINAL COMMUNICATIONS.

THE PHYSIOLOGY OF DYSENTERY.

BY S. S. HERRICK, M.D., OF NEW ORLEANS.

In the July number for 1875 of the *American Journal of the Medical Sciences*, is an interesting article by Prof. Austin Flint, on the Natural History of Acute Dysentery. In 1872 he determined to study this subject by keeping hospital cases under observation without any active treatment, in order to watch the natural course of the disease. A brief clinical sketch is given of each of ten cases thus studied. A synopsis of the result is then compared with a similar synopsis of a series of 49 cases, which formed the subject of a clinical report made in 1853. These 49 cases were subjected to different modes of treatment more or less active, and of 30 that recovered the average duration was of 9 $^{5}|_{6}$ days. The mean duration of the 10 cases was 11 $^{1}|_{5}$ days, with no fatal result.

In regard to the earlier series of cases, he observes: "These facts were considered to denote that the disease belongs in the category with those which involve certain processes (zymotic) within the organism, reproduced with difficulty after they are completed." He was confirmed in this impression by continued observation of fifteen of these cases for periods varying from one to thirteen years, no one of whom suffered a second attack.

The conclusions drawn from his study of the last series of 10 cases are stated as follows:

"(1) The disease in a temperate latitude tends, without treatment, to recovery.

"(2) It is a self-limited disease, and its duration is but little, if at all, abridged by methods of treatment now and heretofore in vogue.

"(3) Convalescence is as rapid when active measures of treatment have not been employed, as in cases actively treated.

"(4) Relapses do not occur in the cases in which the disease has been allowed to pursue its own course without active treatment.

"(5) Sporadic dysentery, in a temperate climate, does not eventuate in a chronic form of the disease; in other words, it does not lead to ulceration or other lesions of the mucous membrane of the large intestine, and it does not involve any tendency to complications or secondary affections."

These ideas are not commonly entertained in the profession, but they are not altogether new. In a medical address pronounced by Dr. B. E. Cotting, of Boston, in 1852, he remarked: "The natural history, progress and tendency of dysentery, if carefully re-investigated, would form no mean addition to our professional acquisitions. That this disease tends to recovery, and is actually recovered from, in a sufficient number of cases to inspire confidence in the treatment, under all varieties of practice, from the most heroic drastics to the most inappreciable doses; and that we often hear practitioners complaining that it is so very 'obstinate' or unyielding to remedies, in this or that season, are sufficient indications that it is self-limited, and defends itself, as best it may, against excessive medical interference. That, as in typhus, scarlatina, and other exanthems, a person having experienced one attack of this disease is thereby protected against a second, though not so certainly proved, is not improbable from recent observations."

The points which I purpose to notice at present are—(1) whether treatment has any marked effect in modifying the duration of sporadic dysentery; (2) whether it is liable to become chronic; (3) whether one attack affords future exemption from the disease. By way of introduction, a brief consideration of the nature of dysentery will be appropriate.

It is to be observed that both the writers referred to incline to regard it as a zymotic disease, which would imply a specific poison as the cause. At the same time it is to be noted that

they do not recognize more than one form of disease attended by such characteristic symptoms as tormina, tenesmus, frequent and scanty stools consisting mostly of blood and muco-purulent matter, and ulceration particularly of the large intestinal tract. Niemeyer regards *dysentery* as produced by a miasm, of some low vegetable form, flourishing outside the body under such favorable conditions as high temperature and abundant moisture, and also reproduced in the intestinal canal of those affected by the disease. With this view it is propagated, like cholera, through the dejections of those suffering with it. Another bowel affection is termed by him *intestinal catarrh*, not attributed to any specific cause, but to whatever may produce a local hyperæmia and lead to disordered action and a flux. Under aggravated circumstances the symptoms may assume the character of true dysentery, and the disease naturally would be less connected with such conditions of temperature and moisture as attach to the specific malady. It obviously follows that the non-specific disease would tend less to assume either an endemic or an epidemic form than the specific, and that it would be more amenable to treatment.

On the whole the views of Niemeyer seem to me highly reasonable. Under such a supposition, ordinary sporadic cases, generally of moderate severity, such as occur more or less every year in all parts of the country, would belong to the non-specific type; while epidemic visitations, marked by aggravated symptoms and intractability, should be attributed to a specific cause. The distinction, indeed, would be quite similar to that observed between true Asiatic cholera and our ordinary cholera morbus. In reality dysentery, in an epidemic and malignant form, has not existed in this city for many years, and Dr. Flint states expressly that his two series of cases were of the sporadic form. Consequently it seems unlikely that they were produced by a specific cause, capable of self-multiplication.

Coming now strictly to the subject, experience in the treatment of sporadic dysentery has led me to an opinion quite at variance with that announced by Dr. Flint, as regards its efficacy. On account of the particular and circumstantial manner in which his observations were made, they deserve high consideration, and I regret that the record of my cases is confined chiefly to their complications and the duration of treatment. I have made a list of 77 cases, treated since the beginning of 1870, from which

are excluded those in which dysentery was not the main disorder, such as were not properly under my treatment throughout, and some others, seen only once, which may have had other treatment previously or subsequently. There are included 26 who were seen only once, who all recovered, and who are believed to have had no further medical advice, as most of them belonged to my *clientelle*. Twenty-one were seen twice, and it may safely be said of all these that marked relief was obtained between the first and second meeting. Sixteen are recorded as complicated with intermittent fever, and of course required quinine in addition to other remedies. The most protracted cases occurred during the past summer, one having been under my care for 26 days and the other 18 days. Both of these cases had been neglected for several weeks before my advice was sought, but both have recovered. Only three other cases were protracted—one 12, one 13, and one 14 days. The first of these was complicated with intermittent fever, contracted in the country; the last was badly managed by its parents; the second was totally rebellious to every treatment I could devise, and died. Only two others died, both of whom were men more than 72 years old, one of whom had treated himself with domestic remedies for some time previously. The average duration of treatment in these 77 cases was 3.54 days; the duration of the disease can not be determined for want of data, but in most cases it somewhat exceeded the time of treatmeut.

The mode of treatment in uncomplicated cases has been rather uniform; and, with no claim for originality in medication, I have found it so satisfactory as to be disinclined to experiment with different remedies. The indications seem to be—(1) to correct that disorder of nervous function which is manifested by spasmodic action of the muscular structure of the intestines, in the tormina and tenesmus; (2) to promote the natural peristaltic action of the bowels, and thus relieve them from the irritation of their contents, which become highly depraved from undue retention. The first indication is met by opium; the second by some unirritating laxative. The neutral salts are to be preferred, both as not being irritative and as diminishing the hyperæmia of the intestinal tract, through their osmotic action depleting the engorged blood-vessels. I am in the habit of combinng both in the same prescription, and, in a recent uncomplicated case, where proper regimen is observed, confidently expect to find marked improvement within twenty-four hours. In severe cases

it is necessary often to use opium by suppository or by enema, for the relief of the distressing tenesmus. The ipecac treatment has been resorted to in a few instances where early relief was not afforded by the above plan.

I do not purpose here to go into particulars of treatment, or to speak of complications. The point aimed at is to show that *medication* is actually needed, and that a suitable *method* is generally followed by speedy relief. A quantity of depraved fæcal matter is retained in the intestines, for want of the natural peristaltic action. There it acts as an irritant, and provokes spasmodic efforts at expulsion, which only aggravate the trouble. By controlling the spasm and restoring natural action, the whole derangement is in general speedily ended. Admitting that continuance of these spasmodic efforts will finally produce such exhaustion of the nervous supply as to compel their cessation, and admitting that then the irritating contents will excite such a flux as will sweep them from the body, is it not better to lead nature in the course which she must take to find recovery? Is it not, in fact, a cruel dereliction of duty to fail of extending the helping hand? I do not hesitate to declare that both reason and experience have brought me to the affirmative conclusion.

Dr. Flint does not admit any tendency of this disease to become chronic, or, as he defines it, to take on organic lesions. On this point I have to observe that three of the cases treated by me during the present season were of several weeks' duration before coming under my charge. In two I am satisfied there was some degree of ulceration, while the third recovered so promptly on the ipecac treatment as to leave great room for doubt.

As regards liability to secondary attacks, my observation is again at variance with that of the learned professor. The 77 cases referred to are represented by 72 individuals, one having been treated by me four times, and two others twice. Besides, since reading the papers of Drs. Cotting and Flint, I have made inquiries of many individuals, and find a number who have experienced more than one attack.

As dysentery exists here only under the sporadic form, the type of cases must be similar to those studied by Dr. Flint. If we accept the view of Niemeyer, on the duality of the affection, I am convinced that there is no reason to hope for future exemption from an attack of the sporadic, non-specific form of this malady. In regard to the other form, I am not prepared to

speak from actual experience. Niemeyer is silent on the point of recurrence, and it is not likely that he would fail to mention the exemption gained by one attack, if he regarded it as having any foundation. Even on the supposition that it is both zymotic and infectious, it would find congenial company with Asiatic cholera, from which nothing but a fatal attack gives one sure exemption.

TABLE OF CASES.

Name.	Age.	Date of Treatment. Commenced.	Ended.	Result and Remarks.	Days under Treatment.
L. McI.....	About 21 years	March 1, 1870	Mar. 12	Recovered. Comp. Feb. Int.	11
Mrs. T. B. (c.)	Adult.	June 1, "	June 1	Recovered.	1
Mrs. H.....	" " "	" 12, "	" 15	"	4
Mr. J. H. C....	21 years	August 21, "	Aug. 24	"	4
C.....	4 years	October 25, "	Oct'r 29	" Seen twice.	4
Mrs. H. (c).....	About 30 years	" 30, "	Nov'r 1	"	3
J. K.....	Adult	Novem'r 20, "	" 23	"	4
Mrs. B.....	"	Decem'r 6, "	Dec'r 17	" Comp. Feb. Int.	12
T.....	2½ years	" 20, "	" 20	"	1
T.....	3 months	" 28, "	" 29	"	2
Philip W	Adult	May 2, 1871	May 3	"	2
Mr. F.....	73 years	June 6, "	June 9	Died.	4
J. W. (c).....	4 years	" 22, "	" 23	Recovered.	2
J. T	72 years	August 1, "	Aug't 6	Died.	6
—— M.....	15 months	October 21, "	Oct'r 22	Recovered.	2
Mrs. P.....	About 30 years	Novem'r 10, "	Nov. 13	"	4
Mr. R.....	" 50 "	" 12, "	" 15	" Comp. Feb. Int.	4
B.....	8 months	" 23, "	" 28	" " " "	6
T.....	3½ years	January 22, 1872	Jan. 22	Recovered.	1
W.....	3 years	April 26, "	May 9	"	14
Joseph B.....	50 years	May 4, "	" 6	"	3
C.....	2 years	" 5, "	" 6	"	2
Mrs. B.....	45 years	" 14, "	" 16	"	3
" S.....	About 30 years	June 13, "	June 15	"	3
" F. (c).....	" 20 "	August 16, "	Aug. 17	"	2
J. H. K.....	25 years	October 14, "	Oct'r 16	"	3
—— C. 2.....	30 months	Novem'r 20, "	Nov 22	"	3
Mrs. D. ?	18 years	Decem'r 11, "	Dec. 12	"	2
" D. § 2.....	18 years	April 13, 1873	Apr'l 13	"	1
" B.....	25 years	May 12, "	May 14	" Seen twice.	3
R.....	2½ years	" 21, "	" 21	"	1
Miss S.....	11 years	" 23, "	" 24	"	2
Mrs. W.....	About 32 years	" 26, "	June 3	" Comp. Feb. Int.	9
J. D.....	" 18 "	" 31, "	May 31	"	1
Miss D.....	" 18 "	June 9, "	June 9	"	1
Mrs. C.....	" 35 "	" 27, "	" 27	"	1
Mr. S.....	" 32 "	July 26, "	July 28	" Comp. Feb. Int.	3
R.....	4 years	August 12, "	Aug. 12	"	1
Mrs. W.....	About 45 years	" 20, "	" 20	"	1
" H.....	" 32 "	Septem'r 1, "	Sept. 1	"	1
Mr. H.....	" 38 "	" 16, "	" 17	"	2
C.....	20 months	" 30, "	" 30	"	1
M.....	2 years	Octobor 13, "	Oct. 13	"	1
Miss L.....	About 18 years	" 17, "	" 18	"	2
Mrs. M.....	.....	Novem'r 8, "	Nov. 8	"	1
P.....	10 years	March 30, 1874	April 1	" Comp. Feb. Int.	3
T. J. (c).....	About 37 years	April 7, "	" 19	Died.	13
—— C.....	4¾ years	" 20, "	" 21	Recovered.	2
—— C.....	22 months	May 22, "	May 22	" Comp. Feb. Int.	1
Mrs. B.....	About 20 years	June 12, "	June 13	"	2
" L.....	" 40 "	July 21, "	July 23	"	3
J. M. (c).....	" 40 "	August 3, "	Aug. 3	"	1
C. T. C.....	28 years	Septem'r 9, "	Sept. 9	"	1
—— S. (c).....	9 months	" 17, "	" 19	" Comp. Feb. Int.	3
—— H. (c).....	4 years	October 8, "	Oct. 8	"	1
—— M.....	7 years	" 24, "	" 27	" Comp. Feb. Int.	4
J. B. J. (c) .. .	About 40 years	Novem'r 10, "	Nov. 10	"	1

TABLE OF CASES—Continued.

Name.	Age.	Date of Treatment. Commenced.	Ended.	Result and Remarks.	Days under Treatment.
Mrs. L.....	About 45 "	Nov'r 27, 1874	Nov. 27	Recovered.	1
H	18 months	Decem'r 15, "	Dec. 17	" Seen twice.	3
J. M.....	About 19 years	Janu'ry 11, 1875	Jan. 18	"	8
J. B. J. (c) 2...	" 40 "	" 19, "	" 19	"	1
D. B....	" 40 "	" 29, "	" 30	"	2
J. B. J. (c) 3...	" 40 "	Febru'ry 18, "	Feb. 18	"	1
W P. (c)	" 30 "	March 9, "	Mar. 10	"	2
Mrs. W.....	" 60 "	April 15, "	April 15	"	1
O (c)....	2½ years	May 31, "	May 31	"	1
" H.....	About 32 "	June 10, "	June 10	" Pregnant.	1
J. (c)....	6 months	" 18, "	" 20	"	13
" McM.....	About 50 "	" 22, "	July 8	" Chr. before seen.	8
" M.....	" 35 "	" 24, "	June 25	" Comp. Feb. Int.	22
Mr. T. T.....	" 40 "	July 9, "	Aug. 3	" Chr. before seen.	6
Miss C.....	" 33 "	August 31, "	Sept. 1	" Comp. Feb. Int	2
Mrs. F. (c).....	" 30 "	Septem'r 17, "	" 18	" " " "	2
S. (c)....	3½ years	" 24, "	" 25	" " " "	2
—— McArdle..	1¾ years	October 5, "	Oct. 12	Recovered. Feb. Int. Seen only twice	8
Mrs. Wh.....	About 21 "	" 9 "	" 16	Recovered. Feb. Int. Dysen. for 2 mos. before treatment.	8
J. B. J. (c) 4...	" 40 "	" 10, "	" 16	Recovered. Feb. Int.	1

OBSERVATIONS UPON THE URINE IN YELLOW FEVER.

(No. 2.)

BY GEO. M. STERNBERG, M.D.,
Brevet Major and Assistant Surgeon U. S. A.

While my "Observations upon the Urine in eleven non-fatal cases of Yellow Fever at Fort Barrancas, Fla., in 1873 and 1874," were being put in type for the September number of this *Journal*, the following additional observations were being made at the same place.

The patients upon whom these observations were made were all adult males (enlisted men of the United States Army), and were treated in the Post Hospital at Fort Barrancas.

The treatment was mainly expectant. In nearly all of the cases a full dose of ol. ricini and a hot mustard foot bath were given immediately upon the patients being admitted to the hospital. The oil commonly produced several free evacuations from the bowels, and the urine was, as a rule, passed at the same time. This is the cause of the small number of observations upon the urine recorded upon the first day of the disease. Blanks occurring in Table No. 1 on subsequent days are mainly due to the same cause, the urine being passed with the stools. I must refer the reader to the September number (1875) for an explanation of the accompanying tables, Nos. I and II.

TABLE I.

Observations upon the Urine in Sixteen Non-Fatal Cases of Yellow Fever, at Fort Barrancas, Fla., in 1875.

Day of Disease.	FIRST.			SECOND			THIRD.			FOURTH.			FIFTH.			SIXTH.			SEVENTH.			EIGHTH			NINTH.			TENTH.			ELEVENTH.			TWELFTH.		
CASE.	Am	S G	Al.	Am.	S G.	Al.	Am.	S G	Al	Am	S G	Al	Am.	S G.	Al	Am.	S.G.	Al	Am.	S.G.	Al	Am.	S.G.	Al.	Am.	S.G.	Al.	Am.	S G.	Al	Am.	S G.	Al.	Am.	S.G.	Al.
No. 1....	8	23	....	8	23	....	8	20	A	14	20	A	34	20	A	26	23	A	26	17	A	32	12	A	22	12	A	12	19	A	....	....	....	....	....	....
No. 2....	....	....	....	5	28	....	4	25	A	22	23	A	28	24	A	32	18	A	18	22	A	4	24	....	24	9	....	50	....	....	62	3	....	24	10	....
No 3....	....	....	....	....	....	....	24	25	....	12	20	....	19	25	....	8	27	....	8	25	....	20	25	.	....	....	....	....	....	....	....	....	....	....	....	....
No. 4....	....	....	....	11	20	....	31	23	....	20	21	A	20	20	....	28	21	A	20	20	A	15	21	A	....	....	....	....	....	....	....	....	....	....	....	....
No. 5....	....	....	....	12	25	....	17	17	A	26	20	A	19	20	A	24	18	A	6	15	A	....	..	A	8	14	A	7	12	A	....	....	....	....	....	....
No. 6....	....	....	....	....	....	..	15	25	....	35	15	....	19	22	A	21	21	....	14	17	....	22	15	....	24	14	....	24	9	...	....	....	....	....	....	....
No. 7....	....	....	....	18	25	A	24	22	A	12	23	A	34	25	A	12	21	A	17	25	A	10	32	A	5	39	A	....	....	....	....	....	....	22	19	....
No. 8....	8	23	....	8	30	....	17	26	A	2	29	..	16	26	....	16	25	....	16	30	.	12	22	....	15	18	....	13	16	....	17	16	....	16	15	....
No. 9....	....	....	....	10	30	....	8	29	....	20	27	A	16	24	A	15	25	....	12	25	....	12	25	A	8	20	A	30	14	A	....	....	....	....	....	....
No. 10...	....	....	..	....	....	....	37	21	....	30	21	....	26	20	A	20	21	A	28	26	A	17	20	A	28	8	A	30	12	....	....	....	....	....	....	....
No. 11...	....	....	..	....	...	....	16	29	....	6	26	A	8	25	A	20	25	A	16	24	A	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....
No. 12...	....	....	....	18	25	....	12	30	....	16	30	..	10	30	....	10	30	....	....	....	....	....	....	....	12	13	....	16	24	....	42	7	....	....	....	....
No. 13...	....	....	....	6	27	A	8	20	A	22	20	A	8	20	A	12	20	A	22	20	A	6	18	A	14	18	A	30	15	A	13	16	A	....	....	....
No. 14...	....	....	....	12	20	....	4	27	....	8	20	....	16	12	....	30	7	..	101	2	...	92	1	....	100	2	....	72	3	....	96	2	....	101	2	....
No. 15..	....	....	...	....	...	....	....	....	..	9	20	A	20	24	A	20	23	....	20	23	....	22	21	....	14	19	....	19	13	.	14	12	....	..	....	....
No. 16..	....	....	..	....	....	....	8	32	A	24	23	A	....	....	....	....	....	....	14	22	A	19	22	....	20	15	A	24	22	A	14	22	A	40	21	A
Average..	8	23	....	11.5	25	1-5	16	28	7-15	18	22	5-8	19	22	11/15	20	22	8-15	22	21	9-15	22	19	7-13	23	16	7-13	28	13	5-12	37	11	2-7	41	13	1-5

TABLE II.

	Amt.		S.G.		
Normal in adult male.....	50	×	20	=	1000
1st day of yellow fever.....	8	×	23	=	184
2d " " " "	11.5	×	25	=	287
3d " " " "	16	×	28	=	448
4th " " " "	18	×	22	=	396
5th " " " "	19	×	22	=	418
6th " " " "	20	×	22	=	440
7th " " " "	22	×	21	=	462
8th " " " "	22	×	19	=	418
9th " " " "	23	×	16	=	368
10th " " " "	28	×	13	=	364
11th " " " "	37	×	11	=	407
12th " " " "	41	×	13	=	533

It will be seen that the results arrived at vary in a very marked manner from those previously recorded. This difference is doubtless due to a difference in the type of the disease. In my first series of cases occurring in 1873 and 1874—with one exception (No. 11)—the duration of the initial fever did not exceed four days, and in four cases it was of the type I have elsewhere (*American Journal of the Medical Sciences*, July, 1875, p. 106) denominated *simplex*, in which the duration of the initial fever is but two days. A graphic delineation of the course of the fever in nine of these cases is given in the article referred to, viz., Nos. 1, 2, 3, 4, on Plate I, Nos. 9, 10, 11, 12, on Plate II, and No. 22 on Plate III. But the sixteen cases given in the present table were mainly of the prolonged type. In three only did the temperature fall to the normal at the end of four days, and in none at an earlier period. In the article referred to, I found from the study of a large number of temperature charts (136) that "in the simple type the temperature is higher on the second day than on the first, or there is a more or less marked exacerbation. In the quadruplex type, as shown by Dr. Faget's tables of cases from the Memphis epidemic of 1873, the temperature does not reach its acme until the third day; or if the acme is reached sooner, the temperature is maintained at this point until the third day, when defervescence commences" (loc. cit. p.

110). These conclusions are sustained by the temperature observations made during the recent epidemic. In a majority of the cases there was no chill, or but a very slight one, and the headache and fever marking the onset of the disease were of so mild a character as to throw doubt upon the real nature of the attack. In fact, there were numerous cases of the kind that have been denominated "walking cases," in which it was difficult to convince the patient when he applied for relief for a slight headache that he was sufficiently ill to take to his bed. The fatal nature of the malady soon showed itself, however, and these "walking cases" always proved serious, and often were quickly fatal.

In the type of the disease which occurred here in 1873, a distinct and often severe chill marked the onset of every case, and the first or second observation made, commonly gave the highest temperature reached during its whole progress. A majority of these patients were able to be out of bed by the eighth day, while in the epidemic of this year most of the patients were confined to their bed from twelve to fifteen days.

I do not think we can ascribe the reduction in the amount of solids excreted by the kidneys in these *non-fatal* cases to defective action of the excretory apparatus alone. The figures obtained are rather to be taken as representing the normal quantity of urinary solids produced in this type of yellow fever, modified to some extent, perhaps, by defective excretion in one or two of the more severe cases. (Refer to case 2, Table No. I—2d, 3d and 8th days.) I infer this from the fact that these non-fatal cases did not at any time present symptoms of uremic poisoning, and from a careful study of my tables Nos. I and II, in connection with the clinical history of the cases. The product of Am. and S. G. in cases characterized by the absence of albumen from the urine, and of all evidence of congestion of the kidneys, was no greater than the average obtained from the whole series. (See Nos. 3. 8 and 14, Table No. I.) Again, by reference to Table No. II, it will be seen that the product of Am. and S. G. is tolerably uniform from the 3d to the 12th day, and that this uniformity is preserved by a falling off in the specific gravity to compensate for the daily increase in quantity shown by the column headed Am. This uniformity in the product while the factors constantly change, is shown in a very marked manner in case 14, Table No. I. In this case the quantity of urine passed on the 7th day

amounted to 101 fl. oz., while the specific gravity fell to 1002. This excessive quantity and small specific gravity continue up to the 15th day of the disease, when the patient was considered convalescent and observations were discontinued.

To ascertain the product of Am. and S. G. in patients convalescent from yellow fever at a later date, I had the urine passed by sixteen convalescents on full diet, who had been out of bed from ten to twenty days, preserved and measured. The result was that the average of the sixteen cases gave Am. $\times$ S. G. = 491, a product but little in excess of that obtained during the continuance of the fever when the patients were in bed. The only exercise taken by these convalescents was to walk about the hospital and garrison.

While the figures in our Table No. II probably represent with sufficient degree of accuracy the full amount of urinary solids produced from the 3d to the 12th day in the prolonged type of yellow fever, it is probable that the reduced quantity upon the 1st and 2d days is due to defective excretion. This view is sustained by the fact that in nearly all the fatal cases death occurred from the 3d to the 5th day, and was preceded by suppression of urine. The product of Am. and S. G. in these cases fell from the outset and became zero from six to twenty-four hours before death.

In my previous paper I endeavored to ascertain what influence, if any, the degree of pyrexia has upon the production of the urinary solids during an attack of yellow fever. No definite results were obtained, and I am not able to throw any additional light upon this point after a careful study of the cases at present under consideration. In some cases characterized by a high temperature the product of Am. $\times$ S. G. was extremely low, probably from defective excretion. (Case No. 1.) Table No. II shows that the average product of Am. $\times$ S. G. was a little less on the 9th and 10th days, after the remission of the fever, than from the 3d to the 9th, during its continuance.

I have heretofore said nothing of the reaction of the urine in yellow fever. Daily observations were made both in the present series of cases and in that previously given, with the result often noted by other observers, that it is commonly found to be acid during the first four or five days of the disease. After this it has sometimes an acid and sometimes an alkaline reaction.

CARBOLIC ACID AND DISINFECTION.

A PAPER READ BEFORE THE MEDICAL AND SURGICAL ASSOCIATION OF NEW ORLEANS, OCTOBER 30TH, 1875,

BY J. L. CRAWCOUR, M.D.*

Mr. President and Gentlemen:—Requested by you to open the discussion on Carbolic Acid, it was a matter of some difficulty to determine in what way to treat the subject. To discuss the entire question would occupy the whole evening, and I have therefore determined to take into consideration only that portion which appertains to its use as an agent in limiting, or preventing the increase of what are called infectious, or contagious diseases.

To do this properly we must define what we mean by this term. By a contagious or infectious disease, I understand a malady which, when once introduced into the organism, tends to grow and propagate a disease similar to or identical with itself—this, spreading from individual to individual, or from house to house, without *apparent contact*, for contact there is, although to us invisible and almost inappreciable.

The proper term should be, not contagious, but spreading disease, for contagion in its strict sense implies visible touch, which rarely takes place in the diseases we are about to consider.

To understand in any way the preventive action of carbolic acid, we must investigate the modes by which diseases of the nature we are considering propagate themselves, and for this reason we must devote some time to what is called the germ theory of disease. What do we understand by this? No one can doubt that, when a disease which originally occurs in A, is produced in B, who lives near him, and from B is propagated to C, and so on in a long series, it can only be induced by the contact of a sensible although inappreciable something—inappreciable in the fact that in most instances it is invisible, tasteless, inodorous, and apparently imponderable. The fact of its being inappreciable by our senses is no proof of its non-existence; in many instances we can only know of existence by results. Let me borrow an illustration from chemistry, which, though coarse, will exemplify my meaning. How do we know there is such a substance as hydrogen? We can neither smell, see, nor taste

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it, and it is so light, that except in comparatively large quantities it is practically imponderable. An ounce measure of hydrogen no balance is sufficiently delicate to weigh, but we can readily prove its presence by the fact that when a flame is applied to the vessel supposed to contain it, it burns, or explodes, and produces water. In this case we can only know its existence by its results; similarly with oxygen, nitrogen, and many other substances. The particles which compose them are so attenuated that they elude our senses. The fact, therefore, as asserted by the opponents of the germ theory, that we are not able to show a disease germ in a visible ponderable form, is no proof of its non-existence. That such a germ does exist is, in my opinion, proved by its effect. An atom of small-pox or vaccine virus we can isolate; an atom of diphtheritic, typhoid, yellow fever, or scarlatinal poison, as yet, we cannot; but inasmuch as each produces its similar in a large number of those exposed to its influence, it undoubtedly proves that such a poison germ must exist; and certainly, if we allow the existence of such a substance in small-pox, we cannot reasonably refuse credence to a similar essence in other analogous diseases. We must therefore assume the existence of germs which may produce disease, and we are bound also to assume that they are not only organic, but organized, for the evidence of our senses proves that they grow; and that which grows must have life. In defence of their invisibility, we must remember that when we see a substance—a cell, for example—we see it only after a period of existence; it must already have been evolved from a something smaller, and this from something smaller still; the primordial atom we can never see. Even in inorganic substances, the infinite divisibility of matter is such that a point can easily be reached which transcends the highest power of vision or tangibility. A living cell the millionth of an inch in diameter, must have already existed in a form still less; and small as it is, this must already, from the moment of its birth, contain all the potentialities of the full-sized organism. The primitive cell of all living matter, animal or vegetable, whether of bone, or muscle, or nerve, is identical; the ultimate cell of the spermatozoid is the potential of the future being. The ultimate germ of all diseases must in its very essence, therefore, be invisible and inappreciable except by the results it produces on those brought within and susceptible of its influence.

Taking for granted that these germs exist (that of vaccine virus we can isolate, and it is solid and ponderable), in what way do they produce disease? Let me again use a familiar illustration. If I introduce into a solution of sugar an atom of yeast (a living germ), the yeast, in order to increase, takes to itself food, and for this purpose appropriates certain elements of the sugar; it grows, and in growing changes the constitution of the sugar, producing that disturbance which in the living animal we should call disease. The sugar by degrees is changed into something else—alcohol and carbonic acid—the yeast still growing. At length no sugar remains; it is killed, and all further change ceases. No other amount of fresh yeast added will produce any further effect, unless a new patient—that is, more sugar—is brought in contact with it. In like manner the germ of a disease is introduced into the organism. Once introduced, it, like the yeast plant, grows at the expense of the blood, changing its physical and chemical condition, rendering it unfit to nourish the various organs of the body, evolving heat, thus causing the increase of temperature we denominate fever, increasing minute by minute, hour by hour, until the entire mass of blood is converted into a fluid containing myriads of particles identical with the original germs. The various phenomena produced by this condition we call disease. I will not take up valuable time by adducing illustrations which perhaps are known to all. The question for us to consider to-night is, first, whether we possess any agent which may destroy the life of these germs, and thus prevent their growth or propagation; and secondly, whether we can find this agent in carbolic acid.

There has been a large amount of confusion and some misconception respecting what are termed disinfectants and deodorants. The terms are by no means synonymous. A substance may be an excellent deodorant and not a disinfectant—at least in the sense in which I understand the latter, viz., an agent which limits or prevents the spread of contagious diseases; and again, an agent may be an excellent disinfectant and not a deodorant. Some few, but very few, may fulfil both indications.

Chlorine, permanganate of potash, charcoal, and a host of others are excellent deodorants; they are not disinfectants, because it has been proved by actual experiments that the lower forms of animal and vegetable life will not only live but flourish

in their presence. They destroy *dead* animal and vegetable matter, but will not kill the living.

The most prejudiced opponents of carbolic acid will not deny its power (even when highly diluted) of destroying all the lower forms of animal and vegetable life; and if the so-called zymotic poisons be, as I believe, organized things, they should certainly be subject to the same law.

As long ago as 1863, M. Lemaire proved that carbolic acid, even in very dilute solution, would arrest fermentation and stop putrefaction, and consequently he recommended it as a remedy in contagious disease. He also found that, when in strictly parallel vaccinations he used lymph mixed with carbolic acid, no vaccination occurred; with the unmixed lymph the usual result took place. Again: if vaccinated spots were immediately touched with carbolic acid, no result took place, although caustic solution of potash did not arrest the vaccination, showing the arrest was a vital and not a chemical effect.

Experiments on animals, from the control we have over them, and from the large scale on which the experiments may be tried, are much less liable to fallacy than experiments on man; and reasoning by analogy we may undoubtedly infer, that an agent which will check the propagation of spreading disease in animals will undoubtedly do so in the case of man. During the cattle plague which occurred in England in 1865, Mr. Crooks, F.R.S., was appointed by the Privy Council to investigate the disease and devise steps for its repression, and he instituted a series of experiments which incontestably proved the value of carbolic acid in checking the disease.

In the first experiment, air, from a cow shed in which were several animals in the last stage of cattle plague, was forced through two glass tubes in which cotton was placed, in the hope that some of the disease germs supposed to be floating in the air would become entrapped in the wool. One piece of the wool thus infected was exposed to the vapor of carbolic acid for half an hour, then, selecting two healthy calves, an incision was made under the skin of each and one of the pieces of wool inserted. The animal into which the infected wool which had been exposed to carbolic acid vapor had been inserted remained perfectly well; the other took the cattle plague and died in a few days.

Mr. Crookes also details the results of disinfecting the cattle

sheds: "For instance, an isolated shed in which several animals had died was used to try certain experiments in the way of disinfecting the place. The stench was very bad. The sick animal was first removed outside, the litter cleared away, and the floor washed with a two per cent. solution of carbolic acid. The walls, roof, rafters, etc., were whitewashed with lime water, plentifully mixed with carbolic acid. The doors and all ventilating holes were then stopped up with hay, and a pound of sulphur was burned in the middle of the floor. After the vapor of the sulphur was cleared away, the diseased beast formerly occupying the shed was tied up at one end, and a healthy animal was fastened near the door The size of the shed being only 15 by 9 feet was insufficient to prevent the animals touching occasionally. Directions were given to continue treating the sick animal as hitherto, and to give the healthy one an ounce of carbolic acid a day mixed with his food; the shed daily to be sprinkled with carbolic acid all over the floor and walls, and whitewashed as before, every fortnight. In a few days, from the closeness of the quarters, actual inoculation of the healthy animal with the disease might be said to have occurred, for the hind quarters of the healthy beast being soiled with the alvine discharges from the diseased one (on one occasion the former was seen to lick the part so smeared), absolute immunity was therefore hardly to be expected now. Put together on the 15th of January, the diseased one died on the 21st, and was replaced by another diseased animal; but it was not until a month had elapsed that the healthy animal showed any symptoms of illness--then only in a mild form, recovering in a few days. Now allowing nine days for the period of incubation, this experiment clearly shows that by the free use of carbolic acid, absolute immunity from contagion was insured, and that when the animal, under so severe a test, did succumb, the disease was deprived of its malignant character."

Another case is recorded by Mr. Crookes, in which the cattle plague was communicated to a herd of cows by the carlessness of a cowman, who, having attended a post mortem examination of some cows dead of cattle plague on a neighboring farm, went directly to another farm house and milked some of the cows. Every one of the cows the man touched died; the liberal use of carbolic acid prevented the others falling victims. "A crucial experiment of immense value was tried by Mr. Crookes on a grand

scale, on a farm the very hot-bed of cattle plague. The cattle were divided into two lots—45 in disinfected houses, 28 in undisinfected open sheds. The disease was communicated to each lot by direct inoculation with the virus. Only those actually inoculated of the disinfected animals fell a prey, while of those not protected by disinfection the whole were quickly destroyed; and as if to make undisputable proof doubly certain, and fix the eye of credit on the true cause of such results, a few weeks later, the remainder of these 45 disinfected animals being unwisely turned out to grass, and removed from the protecting influence of the carbolic acid, the plague attacked and killed the whole of them within a few days."

In an article read before the British Association by Mr. Wm. Hope, and published in the *Chemical News* of October 21st, 1870, we have similar testimony. I will give you an abstract of Mr. Hope's statement. He says: "At an experimental farm belonging to a company in which I was interested pecuniarily and scientifically, rinderpest broke out in the summer of 1867, among a herd of 260 or 270 cows. I sent for Professor Brown, from the Privy Council, who, after making his inspection, said he had found every symptom of rinderpest except one, and that was one of the later symptoms, generally, although not invariably, preceding death, namely, ulceration of the mouth. Next the dreaded ulcers appeared, and Professor Brown told me there was no means of cure known to science, that the disease was practically incurable, and that in the present instance there was no chance of saving a single animal out of the whole herd. At my request, Prof. Brown explained the progress of the disease and the difficulties to be encountered. Immediately afterwards I undertook the treatment of one-half of the animals. I got all the quicklime I could lay my hands on, with which I formed broad roadways all round the sheds and slaked it in situ. I then obtained the Report of the Royal Commission on the cattle plague, and specially studied the experiments of Mr. Crookes. I therefore telegraphed to Manchester for a barrel of genuine carbolic acid, and determined on combining the two treatments of liquid diet for the purpose of guarding against secondary symptoms with the chemical treatment recommended by Mr. Crookes. The result was that, while every animal that I did not take charge of died or was slaughtered, I succeeded in saving every single animal that I did take charge of." "What I wish to call the attention

of the Section to, is the fact that I saved the lives of these animals not by any medical treatment, properly so-called, of the animals themselves, but by an unremitting, ceaseless, chemical onslaught on the germs of the disease. I argued in my own mind that a theory such as the germ theory of disease could not in the nature of things be partially true: it must be altogether true or altogether false." Mr. Hope continues: "It is clearly more scientific to attack the germs producing disease with a chemical agent whose action is ascertained, than to exhibit in the inside of the patient a variety of organic or inorganic substances which, at the best, act only on the disease—that is upon the germ through the secondary agency of the patient himself. * * It has always seemed to me that this case of the chemical treatment of rinderpest upon so large a scale is one of the most entirely practical proofs of the germ theory of disease that has yet been obtained, and for this reason, I have ventured to communicate these details." "Perhaps I should communicate a further experiment that circumstances forced upon me, the chemical treatment of disease attacking, as distinguished from medical treatment of the patient attacked, in the next instance in the human subject. On returning late one Saturday evening I found my eldest child was laid up with a very severe attack of scarlet fever. The first step was to kill the germs which cause the pain in the thorax and the difficulty in breathing. This was effected by a gargle of one part pure carbolic acid to 200 parts of water. The effect was instantaneous and the result most encouraging. We attacked the germs in every direction. Cloths dipped in a 2 per cent. solution of carbolic acid were hung up over the bed and in different parts of the room. The same 2 per cent. solution was sprinkled over the bed-clothes, and over the carpet and furniture. A basin of the same was kept at the door of the dressing room, through which alone ingress and egress was permitted, so that the few persons admitted into the room might wash their hands in it before going to other parts of the house. During all Sunday and Sunday night the same treatment was incessantly kept up, and the patient took occasionally small sips of a solution as weak as 0.2 to 0.3 per cent.: the result was that on Monday morning the patient was fast approaching convalescence. When the peeling stage arrived the entire skin of the child was washed all over with a 1 per cent.

solution of carbolic acid, and he eventually made a perfect recovery without any ulterior symptoms."

My own experience coincides precisely with that of Mr. Hope. I invariably use carbolic acid in the treatment of scarlet fever, both internally and externally, and certainly my success has been greater than with any other system of treatment, and at the same time I am convinced that I have, in every instance, prevented the spread of the disease to others exposed to the infection. In fact, so strong is my confidence in the disinfecting properties of the carbolic treatment that I rarely isolate my patients, and have seen no ill effects from it.

Dr. Wm. Budd, in the *Lancet* of November 21, 1868, also bears similar testimony. He says: "By the employment of these disinfecting agents the contagion of scarlet fever, of hooping cough, diphtheria, and of many species of the same family, may be in a great degree, if not wholly, disarmed." In connection with this, it may be interesting to show the results of carbolic acid injected into the blood of animals suffering from cattle plague, so as to learn the quantity necessary to destroy the germs of the disease. When 26½ grains were injected, the animals died; when 52½ grains were injected, the same result occurred; and so on until 105 grains were injected, when the animals recovered. This was in the proportion of one part of carbolic acid to 10,000 of blood, this being a quantity sufficient to keep the blood (out of the body) free from decomposition for a long time.

In malignant pustule or charbon, a disease remarkable for its fatality, similar success results from the use of carbolic acid. In the report brought before the French Academy of Sciences, Mr. Bouley reported that every animal experimentally inoculated with the disease died; when carbolic acid was exhibited four out of five recovered. Some years ago a similar epidemic broke out among the plantations in our vicinity, and a friend and patient owning some plantations in Mississippi, wrote to me to know if I could devise any means by which he could be saved from the plague which was devastating his neighbors. I wrote to him that in the first place he should disinfect his stables by washing them thoroughly with carbolic acid and fumigating them with the same; that every morning, before his mules were taken from the stable they should be thoroughly sponged with water containing carbolic acid, and that the same should be done when they returned in the evening, and that they should drink only

water impregnated with the same acid. It was certainly something more than accident, that while all around him lost several and many all their mules, he escaped entirely, not losing a single animal during the entire season.

In many other diseases carbolic acid has also been used, not only as a curative but also as a preventive agent. Dr. A. Shiffman writes as follows to Dr. Quesneville at Paris. His letter is dated Valle Menier, Nicaragua, September 2d, 1869. "My dear doctor, at commencement of 1867 cholera spread rapidly in this country, and did not decline until it had decimated during fifteen months the 'pueblos,' one after another. I wrote to Mr. Menier, who sent me 600 bottles of liquid carbolic acid from England (Calvert's, with which I caused the corridors and interior of our houses to be watered every day (in proportion of a tumbler full of acid to a garden can of water), and we have had the happiness to be without a single case amongst our population, which is never less than 300; whilst at Mandaime, an Indian village half a league from Valle Menier, several inhabitants were each day interred. The period of my watering also coincides with the disappearance of intermittent fever, that dreadful scourge which attacks us four or five times yearly, and all the fleas, chigoes, flies, etc., prolific vermin which multiply indefinitely here, have also completely disappeared."

Dr. R. H. Bakewell, late medical officer of health for Trinidad, also says: "I largely used it (carbolic acid) as a disinfectant, and particularly for cases of yellow fever during the late epidemic in Trinidad. I had it used in all houses where cases occurred. My directions were simple enough: carbolic acid to keep the smell distinctly perceptible, and keep this up. *If this be done, I do not think any contagious disease can spread from the sick to the healthy.* I may also add, that I find it extremely useful in contagious dysentery and typhoid fever, to disinfect the evacuations."

M. Devergie, in *Comptes Rendus*, March 6, 1871, says: "Carbolic acid seems well adapted for the disinfection of rooms which have been occupied by persons suffering from infectious diseases; therefore we recommend its use in a crystallized state, or as a liquid, after having been dissolved in 20 or 30 times its weight of water, by sprinkling it on the floors, pavements and staircases, during the stay of patients in rooms and for a few days after their departure."

In intermittent fever it has also been used with benefit. Assistant Surgeon McManney thus writes to the *Madras Medical Journal*: "I administered it (Calvert's No. 1 carbolic acid) in 76 cases of fever of different types with marked success, and in no single case with bad results. I gave it in doses varying from five to twenty minims, and in those cases where I observed a tendency to relapse I at once increased the dose. Having had ample opportunity of judging of the effects of this remedy, and finding its success to have exceeded my expectations, I trust the information I have given will be sufficient to induce others to adopt it in similar cases."

I have already adverted to its use by Dr. Budd in diphtheria, in the *Lancet* of January 23, 1875. W. H. Kempster, medical officer of health for Battersea, London, gives the following testimony: "I use the carbolic acid in the form of a mixture, one minim to five of water with a drachm or two of syrup of orange, thus getting rid of gargles and the painful operation of swabbing the throat, the act of deglutition bringing the medicaments into contact with the fauces and other parts affected. I have lost but one patient out of some thirty or forty. It is as well to state that in all these cases, the characteristic exacerbation was visible, and they were not cases of ordinary cynanche."

About eight years ago, I was called to see a gentleman residing at the corner of Prytania and Erato streets. I found him suffering from small-pox in the discrete form. His family consisted of his wife, two children, and three servants, none of whom had been vaccinated. For some cause which I do not now remember, it was impossible to procure reliable vaccine lymph, and my object was not only to cure my patient but to avoid the spread of the disease to his household. I ordered him to take one minim of carbolic acid hourly in glycerine and water, to be sponged every three or four hours with a mixture of carbolic acid, glycerine and alcohol, the bed clothes to be sprinkled constantly with carbolic acid dissolved in alcohol, and shallow vessels containing carbolic acid to be placed in various parts of the room. Besides this, the acid was diffused through the room several times a day by means of an atomiser. In fact, the atmosphere was so impregnated with carbolic acid that it could be distinctly smelt at the opposite side of the street.

The face was covered constantly with a linen cloth which had been dipped in carbolic oil, apertures of course being left for the

mouth, eyes and nose. My patient recovered without a bad symptom or a mark, and not one member of the household (all unprotected) took the disease, although, as can well be imagined, it was impossible to isolate them, as all the nursing was done by the patient's wife.

Since then I have employed the same treatment in many other cases of the same disease, in all, with one exception (an infant of three months) with the same success, and in no case have I ever had to reproach myself with the deformity produced by pitting. Another advantage is the destruction of the fœtor so characteristic of this disease; the air is perfectly pure, and the physician is guaranteed from spreading the disease among those he may subsequently visit.

In the yellow-fever of 1867 I employed a similar treatment, and without arrogating a success superior to that of my confrères, I am certain that I had gained an immense advance over my experience of former epidemics.

The experience of any single practitioner is necessarily limited, but I am positive I have seen immense benefit from its use in phthisis when employed in the form of atomized liquid, and invariably recommend it. I have used it also with great benefit in whooping cough, and in fact it is my sheet anchor in every infectious or contagious disease. In the after treatment of the puerperal state I always use it, the nurse being directed to syringe the vagina twice a day with warm water containing about one-twentieth of carbolic acid. Whether due to this or not I cannot say, but I am glad to state that my experience of puerperal fever, except in consultations, has been remarkably limited. In an association of this kind, containing so many accomplished surgeons, it would be absurd to speak of the brilliant success achieved by the antiseptic school of surgery, more especially exemplified in the cases reported by Lister, and I need but advert to the subcutaneous injection of a two per cent. solution into the joints in cases of effusion and white swelling, just introduced by Hueter, and successfully carried out in so many instances by our associate, Dr. Lœber.

Some years ago I had a case which exemplified remarkably the benefits of antiseptic conservative surgery. A man was brought to my office suffering from a severe comminuted compound fracture of the thumb, produced by machinery. The laceration of the soft parts was so great that there seemed no

resource but amputation; but after consultation with Dr. Howard Smith, I determined to try what was then new to me, the effect of carbolized applications. The thumb was put into as good apposition as possible—put on an appropriate splint, and dressed with carbolized glycerine. Improvement rapidly ensued, and the result was a good, useful thumb, and I am positive that the benefit was due exclusively to the antiseptic applications. There is one application of carbolic acid which is not generally known as it should be, and that is its use as a local anæsthetic. We owe this to Surgeon Bill, of the United States Army. He found that when pure carbolic acid was applied to the skin, by means of a brush or glass rod, a slight burning ensued which lasted for a few minutes, followed by such a complete state of anæsthesia, that such minor operations as opening abscesses, operations for onychia, etc., could be performed without the slightest sensation. In fact it was equal if not superior to the ether spray. I have made use of this knowledge, and always with benefit.

With regard to the vexed question as to the influence of carbolic acid in preventing the spread of yellow fever in this city, it seems to me that no one who is not blinded by prejudice can have a doubt. All authors agree in considering yellow fever as strictly contagious. Aitken defines it as a "specific fever of a continuous type, occurring, as a rule, once only during life, and propagated by contagion." Macdonald, in Reynolds' System of Medicine, says: "It is difficult to witness the spread of the disease from one individual to another, and its virulence becoming more intensified by the unavoidable crowding of the sick, without recognizing the important part which the evacuations and excretions of the human body must take in the matter." And again: "We are in want of proof of the spontaneous development of yellow fever independently of infected places or persons." And again: "It may be considered probable that the primary zymotic poisons owe their origin to the development of the humbler and more minute, add therefore more subtle, forms of animal and vegetable life." We who have witnessed the fearful epidemics of 1853, 1858, and 1867, know what the usual course of yellow fever is. When it once commences it tracks its way from house to house, from street to street, until arrested by want of victims or the timely advent of frost. Within the past six years disinfection by means of carbolic acid has been attempted, and is as

yet only imperfectly carried out. What has been our experience? A few isolated cases have occurred; they have been restricted to the localities in which they originated. When yellow fever raged as an epidemic last year at Shreveport, free communication existed with this city. Did an epidemic take place here? No! A few cases occurred, but the spread was completely prevented. I believe that a few thousand gallons of carbolic acid emptied into the streets of Shreveport would have stayed the pestilence and saved hundreds of valuable lives. This year yellow fever broke out at Pascagoula, Barrancas, and several other points in our vicinity. An efficient quarantine was an impossibility. Disinfection by means of carbolic acid was used freely in this city, and from August until November only eighty cases have been recorded: at the places mentioned no disinfection was attempted, and at each of them the disease has raged as an epidemic. Can we doubt, in the light of our past experience, that without the free use of carbolic acid, we would have had a desolating epidemic? The Board of Health; members of whom are present, have shown by their maps how the disease has been prevented, and I honestly believe, that if the system of disinfection now inaugurated be kept up, and be even more rigidly employed, we will never see another epidemic in New Orleans, and that the day will come when yellow fever, like the black death, the sweating sickness, and many others, will be to us but a name and a relic of the past.

INNOCUITY OF CHLOROFORM IN MIDWIFERY.*

BY J. C. FAGET, D.M.P.

"We must not confound coincidence with sequence."—SIMPSON.

As could be expected, objections of all kinds, even religious and moral, have been made to the treatment of pains in child-birth by chloroform. But we have here to consider only the medical objections, as the others have been responded to by theologians and moralists.

Those in which we are concerned, have also been refuted from the outset, and by Simpson himself. But time only could prove the real value of many of these refutations. Now,

*See Vol. III., page 188, of this Journal.

however, that more than 28 years have passed while anæsthetics have daily been experimented over the whole world, we can pronounce final judgment upon its worth in midwifery. No doubt the accidents which have occurred in the hands of surgeons, and particularly of dentists, have tended largely to prevent the rapid spreading of their use in accouchements. It is easy, however, to recognise the great difference between surgical and obstetrical cases. In the former, complete anæsthesia must be brought on rapidly and without interruption, *previous* to any pain; whilst at the same time there is no reaction in the organism of those operated upon and rather depression of forces. In cases of parturition, on the contrary, there are intense pains returning from time to time; and furthermore, in such cases *surgical anæsthesia* is not required; as the doses of the anæsthetic must be proportioned to its effects on the pains, and these pains incessantly recurring, excite the vital forces of the organism.

But before further explanation, let us examine the plain facts, or rather the *results of general experience.* In order to do this it will suffice to consult the English and French authors of the last twenty years. The writings of Simpson on this matter are, in our opinion, clear and conclusive; but as the inventor might be suspected of being carried off by his predominant idea, we shall in preference consult a great obstetrical authority in Great Britain, Churchill, who had availed himself of the eighteen years' experience elapsed since the first application of anæsthetics in obstetrics, when his work was published in 1865. In this edition we read at page 375: "Now let us see what has been the result of the employment of chloroform in midwifery. It has been now used extensively in Great Britain, in America, and on the Continent, and we have accounts of *many thousand* cases, in which it has been used. From which it appears, 1st, that in obstetrical practice *no death* has occurred, which can be fairly and directly attributed to chloroform, when administered by medical men. In the cases brought forward by Mr. Gream and Dr. Ramsbotham, there is no evidence proving that the death did not result from the circumstances of the labor, and no ground to attribute the accident to this agent * * * 4th. In the great majority of cases, chloroform does not interfere with the labor, except by suspending all voluntary exertion, if the insensibility be complete. Where the dose is given milder, although great relief is afforded,

the patient will not become insensible, and will be able to exert considerable force * * * 5th. That the dose can be so graduated as to afford some degree of relief, so that, in *natural labor*, a certain amount of suffering may be spared without producing insensibility, or incurring the risks, whatever they may be, of a full dose * * * Whether many fatal cases have occurred, *not recorded*, I cannot say * * * We cannot allow any weight to such supposition."

By referring to the works published is Paris about that epoch, we may read, 1st, in the work of Joulin (1867), at page 642: "In a word, thousands of cases have been reported, and not a single death during confinement has occurred under the influence of chloroform when administered by a physician." 2d. At page 940 of Cazeaux and Farnier: "Although the number of women submitted to inhalations of chloroform is already considerable; (in 1867 it amounted to millions!) not one case can be mentioned in which sudden death may reasonably be ascribed to this 'agent'."

Again, an Englishman who has become a distinguished and highly experienced accoucheur in Paris, Dr. Charles James Campbell, formerly chef de clinique obstétricale de la Faculté, and afterwards an obstetrician of great renown in the highest classes, during the last thirty years, published last year, 1874, a "Mémoire sur l'anæthésie obstétricale" in which he writes at page 19: "The happy fact that for the last 25 years, *not a single case of death* in midwifery in the whole world has been attributed to the employment of anæsthetics; this fact, I say, when compared with the sad truth that cases of death due to chloroform, *in surgery*, are not absolutely rare, would almost suggest the possibility of a certain *immunity* against *intoxication by Chloroform* for the woman in labor."

As to myself, this *immunity* has long been demonstrated by clinical observations, and I was convinced that chloroform could be borne *during pains generally*, and particularly in labor pains, as Trousseau's experience has shown that morphia will be in some epileptiform neuralgias, in which it was administered in doses of 15 grains daily for weeks (*Clin.*, p. 52; vol. 2). I therefore consented several times, *in my earliest experiments*, to give chloroform during almost the whole duration of the most protracted labors of primipara. I have thus given it at times for

many hours in succession until pounds had been inhaled, and for all that no accident, nor any trouble that might excite the slightest uneasiness.

Once, however, after abundant and protracted inhalations, and during the last and most violent bearing-down pains of a first confinement, which besides had been long and tedious, I saw a woman throw up *black blood*, as is ejected in cases of cancer of the stomach. Dr. Touatre, the attending physician, and myself as his assistant, had given chloroform from the commencement, and kept it up regularly without interruption, relieving one another from time to time, to the last. The labor had been going on for over 24 hours when this happened, and at least three pounds of chloroform had been inhaled—caution being always taken that atmospheric air should be mixed largely with the anæsthetic.

Would the blood have been thrown up without the chloroform? I believe it would, as I was struck, several hours before, with the excessive capillary congestion of the whole body, and especially the face and neck, whenever the pain would recur, the congestion always increasing as labor was progressing, while the skin and mucous membranes of the patient were extremely fine and delicate; and surely chloroform did not increase the intensity of the bearing-down pains. Fortunately the head of the child was at the lower straight when the blood was thrown up, and I was able to apply the forceps at once and deliver immediately. This was without the least sequela; a dose of oil given the next morning carried off the black blood which had reached the bowel. The lochia were normal, and no milk fever followed. The child was lively and appeared in no way to suffer from the effects of chloroform, although it was so copiously administered to his mother. I have since given chloroform to the same lady, with Dr. Touatre, during her second confinement. This time, however, labor lasted only a few hours, all going on regularly, without any accident and without any pain.

Analogous cases of *immunity* against intoxication by other substances administered in high doses, in peculiar circumstances, without any bad effect whatever, are known to all. Who is ignorant of the high doses of laudanum that can be given with impunity in *tetanus*, and in delirium tremens due to *chronic alcoholic*

intoxication, or of the large doses of *quinine* required in certain *pernicious attacks* from paludal intoxication?

In the same way the tolerance of the organism for chloroform during labor is a fact established to-day by the accumulation of millions of *cases* of invariable immunity. Explanation of such facts, however ingenious it may be, will still be an hypothesis; but the fact remains, and survives all criticism. Dr. Campbell proposes, however, an explanation which seems based upon observation. After reminding that Professors Claude Bernard and Gubler attribute to cerebral anemia the death of animals destroyed by chloroform, he writes at page 20: "May it not be that the bearing-down pains drive to the brain intermitting flows of blood in sufficient quantities to excite the circulation of the nervous centres, and avoid the danger of complete anemia."

Let it be what it may, the innocuity of chloroform in parturition when the woman is healthy is an acquired fact. As an additional proof, Dr. Campbell has published statistics of his obstetrical practice for the last 25 years in Paris. From 1849 to 1873 he had 1500 cases of accouchements—942 with anæsthetics, and 558 without. Out of the 558 cases 6 died; while out of the 942 cases with chloroform only 5 died—2 of puerperal fever, 2 of diphtheria, and 1 of eclampsia. And about this last case the author remarks: "I must observe that chloroform was given as a remedy for eclampsia." As to the other cases, diphtheria and puerperal fever are surely sufficient causes of death. It follows then that there has been no death in the extensive practice of Dr. Campbell which can be ascribed directly to chloroform. I can say the same of my own practice, however small it may be compared with that of Dr. Campbell. During the last eight years I have administered chloroform over 200 times, mostly in natural labor, and always with the most happy results.

I saw, however, a primipara die about fifteen hours after her confinement, to whom I had given chloroform in moderate quantity at the termination of labor; but she had been sick previously, and was yet very ill with bilious remittent fever, against which no treatment had been directed, and she died of her former disease. Being extremely poor, and wishing particularly to have chloroform during her confinement, she dreaded to appear indiscreet in calling me too soon, and only sent for me in

the middle of the night when the labor pains had fairly commenced. Upon my arrival I found her feverish; but attributing this heat to the labor which had already lasted some time, I gave chloroform at once, moderately and slowly. The dilatation was complete and in about one hour the child was born, whilst the pains were considerably lessened. The expulsion of the placenta presented nothing particular; the womb contracted regularly and promptly; but I noticed that the loss of blood was rather abundant, and the liquid thinner and darker than usual, with the pulse quite depressible. I administered stimulants and stayed with the patient; but what was not my surprise in the morning to find her with most decided jaundice, which was not perceptible by candle-light. I prescribed 20 grains of sulphate of quinia and cinchona wine. A few hours afterwards she had rested and was better. But in the afternoon, although no hemorrhage had occurred, she had cold sweats and syncope, and twelve or fifteen hours after confinement she died. Had hemorrhage occurred in such conditions, I would have thought that the patient was affected with *bilious fever with hemorrhagic tendency*, or *fièvre bilieuse grave;* but nothing could have convinced me that chloroform had in any way aided in producing hemorrhage.

Hemorrhage, however, is an accident that might be liable to occur especially at the time that the after-birth is expelled, and which I have always dreaded more than chloroform itself. And for a great while, in spite of experience or reasoning, I could not keep from giving some ergot towards the end of labor for fear of flooding. The truth, however is, that since I have been giving chloroform in almost every case, I have met with only one case of serious hemorrhage, and it was due to *adhering placenta*, which I had to tear off. With my hand at the bottom of the womb, which was contracting irregularly and slowly, I had torn several adhesions, at the same time that I could feel over my forearm the blood gushing out. And when I wanted to bring the placenta down, I could feel the *uterus following*, as if it would be *everted* were I to continue, and I had to break more adhesions, which increased the flooding. Death was very near when at last I felt energetic contractions coming on, and the placenta and my hand were forced out of the womb. There was some *inertia*, and yet I had given ergot to induce pains on

account of the after-birth. Chloroform had been given for hours during the labor, and had afforded great relief; but when I introduced my hand the patient was almost free from its effects, and I had to give a little more to enable me to operate, as the introduction of the hand would have been very difficult and slow without it. I have confined this same lady twice since, with chloroform, and with complete success, excepting the after-birth, which, although not adherent, was each time accompanied with tendency to *eversion*, which required great care to be avoided.

The unfounded fear of hemorrhage consecutive to the employment of anæsthetics in confinement prepossessed Simpson himself, and in his first essays he would mix tincture of ergot with chloroform for inhalations. We read at page 531 of his "Second Series"—"He had certainly been afraid of its producing hemorrhage, but experience had not justified his fears. In one case * * there had been severe flooding * * It had happened, however, that the labor was so rapid that he had not time to reach the house before the child was born * * Had inhalations been practiced, the hemorrhage would doubtless have been ascribed to it." Yet as Simpson himself said, "we must take care not to confound coincidence and sequence."

The following, also, from Simpson is most explicit: "My mind has never been entirely free from the dread of hemorrhage after the use of anæsthetics. I am not sure that I have seen it more frequent since chloroform has been in use. And I am sure that I saw women have hemorrhages in previous confinements without chloroform, who had *no hemorrhage when chloroform was used*. This is extracted from the "Dictionnaire Encyclopédique des Sciences Médicales," from an article by Professor Pajot, the "Anæsthérie Obstétricale," in which we also read at page 497: "We have not, since the year 1853, had a single obstetrical operation of any importance, unless formally contra-indicated, without anæsthetics. For nearly three years all our operations at the Clinique des Accouchements, in Paris, have been practiced with chloroform. Since the first admission of anæsthetics into practice, we have either assisted, or taken part, in the operations practiced by our teacher, Mr. Paul Dubois. In some personal cases, the women have been kept *insensible* for one or two hours (*repeated applications of the cephalotribe*), without any accident that could reasonably be attributed to chloroform."

Therefore, if hemorrhage, or any other accident whatever, is not excited by anæsthetic doses of chloroform, kept up for several hours in succession, in order to secure *general insensibility* in women undergoing obstetrical operations, is it not evident that there is no occasion, *a fortiori*, to be pre-occupied of *hemorrhages* or other accidents, in *normal labor*, when inhalations are simply *anodynic*, i. e., intended not to destroy general insensibility, but simply *to mitigate labor pains*. In such cases it is clear that inhalations can be continued indefinitely without fear of accidents.

We shall confine ourselves to those few remarks, intending to be more extensive in a third article, on *Anodynetocia*, or the art of mitigating pains in confinement, in which we shall also bring out the advantages resulting from it.

P. S. On the point of closing this article, the following case comes under my observation as an additional illustration: A young woman whom I had confined of her first four children, and to whom I was in the habit of giving chloroform as soon as the labor would commence, sent for me as usual, very early. This time I preferred resisting her urgent demands and not practicing inhalation so soon. The pains being energetic and close together, I examined her and found that the head of the child was retained by the perineum only. The womb being strongly inclined to the right, I applied both hands over it in order to bring it on the median line, and while she had a bearing down pain, I stretched both hands and pressed the womb downwards. Child and placenta both came out as a kernel pressed between the fingers. I was somewhat surprised at the rapidity of this practice, which was not entirely free from inconveniences: the womb, so quickly emptied and, as it were, by surprise, remained *inert;* so that it filled with blood, and syncope took place. I immediately lowered the head of the woman, pressed the uterus strongly, at the same time administering ergot, and all danger disappeared.

Is it not the occasion of saying, as in the case of Simpson: "had inhalations been practiced, the hemorrhage would doubtless have been ascribed to it." Thus we cannot too often repeat with the professor of Edinburgh: "We must take care not to confound coincidence and sequence."

PNEUMATOMETRY: ITS INTRODUCTION INTO MEDICAL PRACTICE—IMPORTANT TO MEDICAL EXAMINERS OF LIFE INSURANCE COMPANIES.

THE PORTABLE PNEUMATIC APPARATUS IN THE TREATMENT OF DISEASES OF THE RESPIRATORY AND CIRCULATORY ORGANS—ITS SUPERIORITY OVER THE PNEUMATIC CABINET.

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Those branches of medicine have become developed the most, in which we have been able to apply laws belonging to the resort of inorganic matter. It is physics exclusively, which up to this time has given to medicine the character of an exact science. In physiology it is the doctrine of respiration and circulation, or that part where mechanical laws are applicable, which may claim to rest upon a sound basis. In pathology again we have only a branch of ophthalmology, optics, which can claim a degree of exactness. During the last two decades a few men, foremost among whom is Waldenburg, of Berlin, have also introduced into the pathology of respiration and circulation mechanical laws, applicable and of great value, not only in diagnosis but also in therapeutics.

Pneumatometry was introduced by L. Waldenburg in 1871, as a diagnostical agent in practical medicine. "I may truly assert," says Waldenburg, "that pneumatometry in reference to exactness and practical importance can be compared with every other method of examination, and that in many diseases it gives us a subtlety in diagnosis which cannot be attained by any other method of examination. It is a pure, objective, physical method, the results of which can be expressed in numbers." The results of pneumatometry are not to be confounded with those of Spirometry. These two methods are based upon entirely different principles. The pneumatometric numbers, for instance, may be very high in one person whilst those of spirometry are very low, and vice versa. The vital capacity of the lungs measured by the spirometer depends chiefly upon the circumference and height of the thorax, whilst in pneumatometry the height of the thorax has no influence, and its circumference only an indirect one in the final result. Very powerful, healthy persons, with a great mobility of the thorax, give correspondingly the highest pneu-

matometric numbers, it being immaterial whether they are of small or large calibre, whilst in spirometry ceteris paribus, larger persons give a higher, smaller ones a lower number.

Pneumatometry is based upon the results obtained with a manometric instrument, called pneumatometer, which serves to mensurate the power of inspiration and expiration. The difference in the height of the column of mercury of both tubes under the action of expiration gives the measure of the *positive* pressure of expiration. In inspiration we obtain the *negative* pressure of inspiration. Respiration is effected under the application of a mouthpiece (mask), with the lips of the mouth widely open. The results obtained are not, as I mentioned before, to be confounded with those caused by aspiration and expulsion of air. The pneumatometric numbers result from three factors: 1, the power of the respiratory muscles; 2, the mobility of the thorax and expansion of the lungs; and 3, of the elasticity of the parenchyma of the lungs. The fundamental importance of pneumatometry in clinical diagnosis consists in the possibility of measuring the two different phases of respiration, inspiration and expiration, with a simple physical instrument, each for itself, whereby it is made possible on one side to ascertain the absolute deviation of inspiration and expiration from the normal state; on the other side, to compare their relative condition to each other. Pneumatometry has made it possible, for instance, to examine into the exact nature of a dyspnœa, to prove if it is inspiratory or expiratory, or a combination of both; further, we obtain with it in numbers the degree of inspiratory or expiratory insufficiency of respiration. Yet more: even when by no other method of examination, not by percussion or auscultation, we have been able to show the least existence of an affection in the respiratory tract, with pneumatometry we can prove every deviation of respiration from its normality, and detect the existence of a disease, even in its incipiency, the lightest forms of emphysema, an insufficient elasticity of the lungs, or an abnormal respiration, which will escape every other method of examination. In most diseases with dyspnœa, this is due to mechanical momentas having caused an insufficiency in respiration; so in phthisis, pneumonia, pleurisy, whereby the volume of the lungs has become diminished; in emphysema, whereby their elasticity has suffered, etc. From the obtained pneumatometric results, we may with

great probability establish the existence of a certain disease or classes of diseases, and herein lies the practical importance of pneumatometry in regard to clinical diagnosis. Of the main representatives of two great classes of diseases, emphysema pulmonum and phthisis pulmonum, the results of pneumatometric researches are striking. We are not only able to prove the existence of an emphysema with the utmost certainty in all cases, even in its incipiency, where no real disturbances are felt at the time, and where all other methods of investigation have proved defective, yet we can discriminate equally well the different stages of the disease from each other.

In phthisis we have, on the contrary, experienced that it is first the power of inspiration which suffers, whilst the power of expiration is either normal or accompanied with a normal state essentially greater than the power of inspiration. We may therefore use the instrument in dubious cases as a differential diagnostic means between the two diseases. In a great number of cases in which Waldenburg could not find with the help of auscultation and percussion, if bronchitis or phthisis, with or without emphysema, was present, he could decide the diagnosis at once in using his pneumatometer.

I will try to give here a short explanation of the pneumatometric results obtained, on healthy subjects as well as persons afflicted with emphysema and phthisis, to show how we apply physical laws to obtain general views for the pneumatometric diagnosis. The inspiration as well as the pressure caused by expiration, are to be considered products of different factors, some of which are of a *positive*, others of a *negative* value. These factors are, 1, the muscles of the thorax; 2, the elasticity of the lungs; 3, the resisting elements located *in* the thorax, the contents of the chest. In inspiration, we find in the power of the muscles the only positive factor, whilst the elasticity of the lungs and the other resistant elements present the negative factors. In expiration all three factors are of a positive value. If we now designate the power of the muscles of inspiration with m, and those of expiration with m/; further, the effect of the elasticity of the lungs, from the deepest inspiration to the common expiratory movement, with e, and to a forced expiration, e′, the resistant elements of inspiration with w, and those of expiration, w/, we are able to construct the following equations:

Inspiration after common expiration = m—e—w.
Inspiration after forced expiration = m—e′—w–|–w′.
Pressure of expiration..... = m′–|–e′–|–w—w′.

Since the pneumatometric results for inspiration are the same after a forced as a common expiration, it follows,

$$m—e—w = m—e'—w–|–w';$$
$$\text{therefore, } e = e'—w'$$
$$\text{or } w' = e'—e.$$

which means: the extent of the resistance in a forced expiration corresponds with the additional power of elasticity added to the forced expiration from the common. If we place in the above given formula for the pressure of expiration also e=e′—w, then we obtain pressure of expiration = m′–|–e–|–w, with which corresponds the inspiratory motion = m—e—w. From these formulas we may construe many other points of importance. So we will find that the sum of the power of inspiration and expiration corresponds with the sum of muscular power which is acting in a forced inspiration and expiration, and that the muscular power of a forced inspiration is by far greater than the muscular power of a forced expiration.

In reference to the explanation of the pneumatometric results obtained in emphysema and phthisis, we will find, that in emphysema the decline of elasticity of the lungs constitutes the essential momentum. A glance at the following,

Inspiration = m—e—w,
Expiration = m′–|–e–|–w,

shows distinctly, that the elasticity of the lungs acts depressing on expiration, but elevating on inspiration. If e is diminished x times, so that the coefficient of elasticity is e = x, inspiration will be increased x times and expiration decreased x times.

Inspiration′ = m– e–|–x—w = Inspiration –|– x.
Expiration′ = m′–|–e—x–|–w = Expiration—x.
Expiration′—Inspiration′ = Expiration—Inspiration—2 x.

or the difference between expiration and inspiration, compared with the normal condition, will be diminished hereby 2 x, that is the double of the diminished elasticity.

Is 2 x > expiration—inspiration, then we will have expiration′—inspiration negative, i. e., the pressure of expiration is smaller than inspiration, which we find exactly to be the case in emphysema.

Similar equations we may construe in phthisis, and we will find, that even previous to an essential weakness of the muscular power the pneumatometer indicates an insufficiency of inspiration. This will be fully explained by the increase of the elements of resistance. A lung with a comparative density of some of its parenchyma offers at inspiration a much greater resistance than a normal one. The more extensive the density, the greater the resistance. In addition we often have here the adhesions of the pleura costalis and pulmonalis. Whilst these elements of resistance to inspiration are recognized with the pneumatometer, we observe an increase of the pressure of expiration, but with the progress of the disease, find this also diminished, it becoming insufficient, though never so much as to sink to the measure of inspiration.

We observe from the foregoing that the numbers obtained by the pneumatometer are to be considered as products of different positive or negative coefficients, with which we obtain an illustration of different conditions of the lungs. We may not learn by it the presence of a certain disease directly, but it teaches us certain abnormal conditions, characteristic of pathological states, nevertheless of great importance in a differential diagnosis. Emphysema and phthisis are not the only diseases which on the pneumatometer will present abnormal types of respiration, equally so will most of the diseases of the respiratory tract, many of the heart, and some of the abdomen.

After what I have stated here, no doubt can exist of the great importance of the pneumatometer in the examination of diseases of the chest, and that pneumatometry will be assigned a superiority over spirometry and the mensuration of the chest.

I now will direct the attention of the reader to another novel improvement, to the *pneumatic treatment of diseases of the respiratory and circulatory organs* with the *portable pneumatic apparatus of Waldenburg*.

The variation of the common atmospheric pressure has been made use of, up to the latest time, as a therapeutic agent in a twofold manner. The sick are either transferred to *mountainous countries* or exposed to the influence of compressed air in the so-called *pneumatic cabinet*. Diseases which are brought under the action of the air in one or the other manner are nearly the same, and the results obtained bear equally well the same character. In both methodical treatments we have to recognize

as the main factor the atmospheric air, but in one instance the effects are produced with air in a diluted form, whilst in the other the air is compressed. It cannot well be denied, that the effect a mountainous country produces upon certain diseases must be attributed to the diluted air. Though the other factors, as, for instance, the purity of the air, humidity, different temperature, may also be of some influence, the main effect is to be attributed to the diluted condition, the small pressure the air exercised on the human frame. In the pneumatic cabinet we know the air is and has been exclusively used, and in a compressed condition. There might also be made use of diluted instead of compressed air, and interesting as the results would probably be, it has never been tried yet. Both of these agencies—a mountainous clime and the pneumatic cabinet—have still one thing in common, that they act on the *whole body* of a person; the person being exposed is either in a diluted or a compressed air; in one during a longer period, in the other lasting only a couple of hours at the time. The air besides acts not only on the outer surface of the body, but also inside, through the communication of the openings, mouth and nares, on the lungs, the total respiratory tract. There is no difference of pressure. Inspiration and expiration are equally under the same condition of pressure. Waldenburg, from the experience he had gained with the pneumatometer, saw the importance which would result from a separate action of air, diluted or compressed, during inspiration and expiration, so that the different phases of respiration, according to the disease, could be brought separately under a mechanical treatment, and this finally led him to the invention of his portable pneumatic apparatus (though Hawke, of Vienna, had already before him constructed a similar instrument). It would take too much space here to give an exact description of this apparatus. With that instrument we have it in our power to increase or decrease the pressure of the confined air, and to control its constancy during the session. We can press air into the lungs or draw air from the lungs. We know exactly in numbers the amount of air which at each inspiration or expiration is inhaled, or exhaled. We can calculate exactly the effect of the power we are making use of at the time. The weight of the whole atmosphere on one centimeter plain surface is equal on an average to 1033 grm. The surface of the inner cylinder ($r^2\pi$) is $(\frac{27}{2})^2\pi$ = circa 572.8 square centimetres. The pressure

of an atmosphere is calculated 1033 572,8 grm = 591,7 kilogrammes = circa 1183 pounds. According to this, we may calculate the pressure ef air corresponding with the number of weights, placed on top, or to the side of the instrument. For convenience sake we can construe a tabular form exchanging the 1183 with the round number 1200.

Pounds.	Pressure of Air.	Pressure of Mercury.	Pressure of Water.
1200	1 atmosphere.	760 mm.	1033 ctm.
1	$^1/_{1200}$ "	0,63 "	0,86 "
3	$^1/_{400}$ "	1,9 "	2,6 "

These numbers give the exact weight to be used in order to gain a certain pressure. The portable pneumatic apparatus fulfils all that science may expect from it, and it has proved to be in practice a valuable therapeutical agent. It may be used in four different ways:

1. For inspiration of compressed air.
2. For inspiration of diluted air.
3. For expiration in diluted air.
4. For expiration in compressed air.

Only the latter one has not been made use of yet. For the proper use of apparatus, its filling, etc., certain rules have to be followed, in order to have it act properly, which will be found out in the study of its mechanism. The apparatus, as newly improved, may also be used as a spirometer, and in having two of them combined, compressed air may be inspired, whilst the expiration can take place into diluted air. Waldenburg has also made an additional improvement for the proper application of a Wulf's flask, whereby compressed air may be inhaled previously saturated, or impregnated, with different substances.

Let us now consider—

1. *Expiration into diluted air.* It will be found that the quantity of air so exhaled is larger than the vital capacity of the lungs, measured with the spirometer, would indicate. The quantity of exhaled air corresponds to a certain degree with the degree of dilution of air in the apparatus; the exhaled air has to be considered as residual air, and we have not been able yet to remove this quantity of air by any other method. This exhaled air may, under certain circumstances, become very considerable. If the diluted air in the cylinder is equal to $^1/_{60}$ or $^1/_{50}$ of atmospheric pressure, and the vital capacity of the lungs of

3000 to 4000 ctm., this residual air may amount to from 500 to 1000 ctm., and in a more diluted air it may be increased to 2000 ctm. The highest number, we obtain of course in emphysematous patients, here, even with a vital capacity of the lungs of from 2000 to 3000 ctm. Waldenburg has seen cases under from $^1/_{50}$ to $^1/_{60}$ atmospheric pressure, to give 5000 to 6000 ctm. air. In emphysema we know that the lungs are extended beyond their normal condition, and that they are not able, from the diminished elasticity of their parenchyma, to contract to the normal position, even after the greatest exertion of expiratory power. The room for that portion of residual air is of more or less extent, according to the condition of the lungs; but it is clear that, by expiration in diluted air, they can yield more air than in a healthy state. This fact gives us a new method for a more precise diagnosis and prognosis. By the expiration in diluted air we obtain further an exchange of air in the lungs, the ventilation will be increased beyond its normal degree, and the lungs contract with each expiration more than it would be possible even by a forced expiration; the lungs occupy a smaller room than in a normal state. With the increase of the expired air, a larger portion of carbonic acid gas will be removed, and a larger quantity of air, respectively oxygen, enter, which is obtainable by no other means. The contraction of the lung, a decrease of its volume is another factor of importance. After the treatment has been persevered in for some time, a diminution of the thorax may be observed, by a direct measurement, during the act of expiration, but it will also be felt by the patient. Here is a therapeutical effect obtained which cannot be expected from any other treatment, not even from the use of the pneumatic cabinet. Another subsequent result of this treatment consists in the increase of the *vital capacity of the lungs* (that quantity of air which the lungs are capable to take in from the extreme position in expiration, to the deepest possible inspiration), and this vital capacity is composed of the air of reserve (that quantity of air which escapes after the common expiratory movement, to the deepest forced expiration); the air of respiration or common breathing air (that quantity of air which is displaced in the common inspiration and expiration), and the complemental air (which the lungs are capable of inhaling from a gentle inspiratory movement up to the deepest possible inspiration). The increase of the vital capacity of the lungs,

after a few weeks' use of the portable apparatus, we may set down at from 500 to 1000 ctm., a not uncommon issue, and the more encouraging, since previous to the use of this instrument we had no means of accomplishing such an effect. I repeat it here, neither by the use of the pneumatic cabinet, nor by the residence in a mountainous country, have we been able to obtain such wonderful results. The effect of the mountainous climate, and the use of the pneumatic cabinet, can only produce an expansion of the lungs and of the thorax, but are unable to diminish the capacity of either. If the enumerated results were the only ones obtained from the use of the portable pneumatic apparatus, it certainly would deserve to be called a valuable invention; but we know that there remain a number of other effects, which will increase its utility. Indirectly and directly, we have in the expiration in diluted air another factor to prevent the appearance of expiratory dyspnœa in different affections of the lungs. Through the increase of the vital capacity of the lungs and the power of respiration, we have obtained an increase in ventilation, by which the appearance of a dyspnœa of the highest degree is prevented.

The inspiration of compressed air in its effects has a certain analogy with the expiration in diluted air. The lungs and thorax become more expanded than under the deepest possible inspiration, the vital capacity of the lungs is increased and so the ventilation augmented; it produces an agreeable sensation in patients suffering from dyspnœa, the craving for air is diminished.

In inspiration of diluted air, the quantity of air inhaled at each inspiration is smaller than the vital capacity of the lungs. If the limit of dilution of air has been reached, which the power of inspiration is not any more able to overcome, the thorax will remain in the position of a coerced expiration, and apnœa be the result. By the inspiration of diluted air, the air in the thorax is less than its normal quantity; the difference of the pressure in regard to the external atmosphere is therefore increased. During the inspiration of diluted air the ventilation of the lungs is diminished. The presence of dyspnœa excludes the inspiration of diluted air. The muscles of inspiration gain power by the increased resistance to the inspiratory muscles and the methodical efforts to overcome the resistance. We have therefore, in the inspiration of diluted air, the best method for metho-

dical gymnastics of the respiratory muscles, a process with which certainly no other can be compared. If the vital capacity of the lungs will be increased by the inspiration of diluted air, this further experience has to decide. Theoretically we may assume that in the same measure as the muscles of inspiration gain power by the exercise of the lungs; the thorax must also be expanded. By the efforts of deepest inspiration the room for the complementary air is also extended, whereby the vital capacity of the lungs must necessarily become increased.

In addition to the different modes of application of the pneumatic apparatus, and its effects on the organs of respiration, I may mention here its influence on the *organ of hearing*. For instance, in inspiration of compressed air, whilst the opening of the Eustachian tube is not obstructed, a quantity of air enters it, of the density of the air in the pneumatic apparatus, which, in addition to the air already present in the tube, will drive the tympanum outwards. The same effect, in a somewhat higher degree, would be produced by expiration in compressed air. In the pneumatic apparatus we therefore have the means of regulating the power of pressure, and to continue its use in a constant measure, an advantage we have not been able to obtain with any of our known methods. Like in the Eustachian tube, the increased or diminished pressure of air may be used on the external auditory canal.

The Mechanical Action of the portable Pneumatic Apparatus on the Heart and on the Circulation of the Blood.

We have observed the effects of the various methods of application of the pneumatic apparatus on the lungs and respiration to take place with an exactness and a mathematical certainty, which would indicate that they must take place of necessity, because they are based upon physical laws. Like cold acts in diminishing the temperature, so a certain high pressure of air must act in expanding elastic walls, or diluted air, or a diminished pressure, in contracting them. Here we have a stern physical law to which all bodies, whether organic or inorganic, must submit. Neither nerves nor blood-vessels can cause an alteration in the end. We do not calculate with uncertain factors and indistinct influences, as in most of our remedies in medicine. Herein we may find the great significance of pure mechanical or physical remedies, with which the other dynamic

means cannot be compared. But it is not only the gaining of a new physical remedy; its farther great value lies in its adaptability, the facility of calculating in advance its mechanical effects by mechanical aid, and of measuring the degree of its action. As the thermometer proves the effect of applied cold, the pneumatometer and Spirometer the mensuration and measuring of the volume of the lungs, so does the pneumatic apparatus present to us in an unmistakable manner the effects of an increased and decreased pressure. Equally, as we have observed its effects on respiration, will we see, under application of purely physical laws, its mechanical effects on the heart and the circulation of the blood.

We know from physiology that the respiratory apparatus plays an important part on the mechanism of circulation. The lungs, enclosed in the thorax air-tight, are not, even in their position of expiration, contracted equal to their elasticity, but expanded. This is also the case, but in a far higher degree, at inspiration. The other organs equally enclosed in the thorax are constantly subjected to a negative pressure (caused by the tending ot the elastic lungs to contract), in a lesser degree at a gentle expiration, in a higher degree at inspiration, and more so at a deep inspiration. This negative pressure of the lungs causes a sucking in of the blood from the veins, and lowers in inspiration (as seen on the kymographion) the pressure in the aortic system. John Muller has already proved that during a long-sustained inspiration, whilst mouth and nares were closed, he could make his pulse disappear. If, after a deep inspiration, we cause a forced expiration, supported besides with a compression of the thorax by the arms, and close the glottis, we will observe a swelling of the veins of the neck. The impulses of the heart and the pulse decrease, and are nearly obliterated. In the experiment of Muller the obliteration of the pulse is caused by the considerable decrease of the action of the heart, in consequence of the dilution of air in the lungs and the enormously increased negative pressure; whilst on the contrary, in the second experiment the pressure in the aortic system is increased by the compression of air in the lungs; the flowing off from the veins is hindered, and is followed by the stand-still of the circulation. Donders has confirmed, that in the last experiment the pressure on the heart and the large vessels can be increased to from 67 to 85 height of mercury above the pressure of the atmosphere,

whilst in a normal respiration the pressure is lower than that of one atmosphere. From these experiments we may conclude, how greatly the compression and dilution of air in the lungs may act on the heart and circulation, so that the circulation itself can be interrupted or brought to a stand-still. "With the assistance of my portable pneumatic apparatus," says Waldenburg, "it is possible to study the physiological effects which compressed and diluted air (be it inspiration or expiration) exercise in their different degrees on the circulation, and to make use of them as a therapeutical agent." The effects of inspiration of compressed and diluted air and of expiration in compressed and diluted air on the heart and circulation of the blood, are, though of the highest interest, too manifold to find room here; equally so have I to dispense with the interesting experiments made on elastic membranes, the sphygmographical and stethographical observations made by Waldenburg, not to mention his indications and contra-indications for the application of his pneumatic method, including the mechanical and other remedies, as supports of his ingenious apparatus. A few therapeutic applications will nevertheless be given, closing the article with some remarks on the comparative value of the pneumatic cabinet.

Waldenburg says: "In all I have treated with the portable pneumatic apparatus about 500 patients, 175 of which number suffered from emphysema, mostly in connection with bronchitis or asthma; 220 from pulmonary phthisis, 42 from disease of the heart, 18 from pleuritis or empyema, and the balance from various other affections." Most all of these cases were treated at his office. He assigns weighty reasons why he did not classify the number of these different diseases as commonly, in so many cured, improved, or not improved, etc., and the reasons advanced by him must strike every practitioner as perfectly sound. In one word, it is simply impossible to apply such a classification, as every thinking physician will comprehend and admit. He only gives the results which he has observed to take place with some constancy, and notices such cases which had been long enough under his care to authorize him to render a proper judgment. I beg leave to refer the reader to his treatise, "The Pneumatic Treatment of Diseases of Respiration and Circulation: Berlin, March 31st, 1875." In his Casuistic, the enumeration of cases treated by him for emphysema, bronchitis and asthma, we meet with results which are highly encouraging, and at the close of

the register of cases treated by him, he has reference to the experience of others. Thus he says: "I call the attention of the reader to the cases treated by Sommerbrodt (*Berl. Klin. Wochenschrift*), who has obtained most excellent cures, and also to the remarkable cures published by Stack in the *Wien. Med. Wochenschrift.*

Of *phthisis pulmonum*, Waldenburg writes: "What we here may obtain from the pneumatic treatment is within more modest limits than with the other affections. Our action will always be of a symptomatic rather than a radical nature. An ulcerative process, or the reabsorption of caseous matter, will not be arrested by the simple application of the pneumatic treatment, yet what we may accomplish, even here, is sufficient to encourage us in our endeavors. The pneumatic treatment, and more so the inhalation of compressed air, counteracts the dyspnœa, relieves expectoration and coughing, increases the vital capacity of the lungs and the power of respiration, enlarges the volume of the not yet affected portion of the lungs and thereby compensates for the loss of the diseased portion. The organism gains time to suffer the disease better, whilst we may try to eliminate the noxious causes. Waldenburg asserts having obtained in many cases, even of doubtful issue, striking and durable cures. The most favorable were such where the disease was yet in the first pure inflammatory stage. "Here," he says, "is still a possibility that the compressed air, by the pressure on the capillaries of the lungs, may act directly anti-inflammatory. Not less favorable for the pneumatic treatment were those cases of phthisis, where the active inflammatory or the ulcerative process was in a retrogressive state, and where only the consequences, circumscribed atelectasic herths, coupled with bronchitis, were present. Here the dyspnœa is yet great, the cough, weakness and decrepit condition observable. In such cases the compressed air renders an important service. The dyspnœa will disappear, the cough diminish, the power of respiration increase. Auscultation and percussion and the inspection will prove, that portions of the lung have become active again, which could not be observed before. The least favorable are those cases with a subacute inflammation and a rapid progressing process of ulceration. Here the pneumatic treatment is not able to arrest the disease; likewise are such cases of miliary tuberculosis with caseous pneumonia, where I desisted from the application of the

pneumatic method in order not to bring the method into discredit. I may say, that I have improved a number of cases, and even cured some. Such cases do not form the majority; still they are relatively numerous enough to surpass what we are in the habit of hearing from cases of phthisis. That phthisis is curable fortunately cannot be doubted any longer, and from what others and myself have done, will cause the dogma, so discouraging to the practising physician and so paralyzing to his endeavors, of the incurability of phthisis, to disappear forever. In some cases a temporary symptomatic improvement was obtained; in other cases I was unable to obtain even any nominal improvement. Numbers I cannot give, and have to speak only in general terms; yet I have to lay some stress upon it, that the number of failures did not shine so prominently as we have been accustomed to see, and that the general results of the pneumatic treatment has to be considered as perfectly satisfactory.

Pleuritis. In pleuritis the remaining membranes, with partial compression of the alveoli of the lungs, offer to the pneumatic treatment the most favorable objects, and the results obtained by that treatment are equally highly satisfactory, like the results obtained in emphysema. "In all cases," says Waldenburg, "which I treated, the improvement and final cure took place without any exception, and in a comparatively short time (in a few weeks), whether the pleurisy had only recently been present or even a year had elapsed since."

Stenosis of Larynx and Trachea. Though the inhalation of compressed air acts here exclusively symptomatically, still, outside of tracheotomy we have no other remedy, and if in its use we merely gain time to use dilating instruments, where they are indicated, we should welcome a method which avoids the operation. In its further use, the pneumatic method has an excellent influence upon the compressed lungs, a secondary affection not seldom observed after a protracted stenosis of the respiratory canal.

Diseases of the Heart. "In diseases of the left ventricle, insufficiency of the mitral valves and stenosis ostii venosi sinistary," says Waldenburg, "I have seen from the inhalation of compressed, air partly clear palliative, partly most durable results." I have here again to cite the treatise of Waldenburg, where the reader will find the indications for the variety of the application of the pneumatic apparatus.

I will finish herewith the remarks I thought proper to make on an instrument which I herewith introduce into this country, and which promises to play yet an important part in medical practice.

In a comparison between the portable pneumatic apparatus with the pneumatic cabinet, Waldenburg has given an exhaustive literature, and described the effects and indications for the use of the pneumatic cabinet and of the mountainous climate. Impressed with the importance of the mechanical treatment of certain diseases of the respiratory tract and of circulation, the result of study and practical observations during my last stay in the capital of the German empire, I had resolved to get possession of the best suited apparatus for that purpose. I had the choice between the so-called pneumatic cabinet and the portable pneumatic apparatus invented and lately improved by Dr. L. Waldenburg, of Berlin. I had the pleasure of personally becoming acquainted with the distinguished doctor, and seeing and observing at his office the treatment of a number of patients suffering from different diseases of the organs of respiration and circulation, and to convince myself of the remarkable effects obtained, even in a short period, in diseases which had resisted the treatment ordinarily employed in such cases. I had also an opportunity to revisit and examine several institutions where the preference was still given to the pneumatic cabinet, though, as I will directly state, the objection against the portable apparatus was partially caused by the circumstance that the erection of the cabinets dated long before the portable pneumatic apparatus had been invented, and that there existed no real objections against the latter, or the objections were not based upon just and proper motives. The erection of a pneumatic cabinet costs a good deal more money than the portable pneumatic apparatus; still the price to be paid for it would have been of minor consideration, if there had been good reason for its superiority in medical practice. Fortunately there does not exist in this city and vicinity such a pneumatic cabinet, neither are there any other portable pneumatic apparatus, otherwise I would undoubtedly have to confront as an opponent the man who would consider himself injured by competition, and probably the introduction of the portable pneumatic apparatus would have to meet another inimical element with the ignorant masses, who believe in the invincible argument that what costs more must therefore

be the better. Now I am spared these oppositions, but how far I will meet with the encouragement of my professional brethren remains an open question. In judging of the intrinsic value of one or the other of these pneumatic instruments, I will have, as a matter of course, to apply to those sources from which an unbiassed impartial judgment may be expected—at least, where such a judgment is based upon experience or sound reasoning from facts stated. From what has been said here, there cannot exist a doubt of the efficacy and importance of the portable pneumatic apparatus; and if the pneumatic cabinet could not produce a more extensive field of application, and better results in proportion with its higher price, the dispute would easily be settled in favor of the former—the more so since in its application there is no necessity of an assistant, whilst the cabinet requires at least one assistant for its use. The main objection the advocates of the pneumatic cabinet raise against the portable apparatus is, that in the latter too small a compressing power only could be used, but this objection rests upon a great error. The manner of efficiency in both is totally different. Not to speak of the great care we have to take in using a high pressure, we act in the portable apparatus with the *difference* between the compressed air on the lungs, on one side, and the common pressure of the atmosphere, compressing the whole body on the other. That *difference* is the whole compressing and drawing power, which we make use of. In the cabinet, on the contrary, that differential power does not exist, since the compressed air is not acting simply on the lungs alone, but at the whole surface of the thorax. The internal and external pressure are of equal power; they balance each other, and we are able therefore to use a much higher pressure in the cabinet. A combination of both apparatus, as some have proposed, so that the person sitting in the cabinet might expire through a tube into the external air, no organism would be able to suffer without endangering life. Since in the portable apparatus, as demonstrated, the difference between the external and internal pressure has to be considered as the only factor producing mechanical effects, and which difference we find entirely absent in the cabinet, we might doubt that the cabinet really produced any effect at all; but this cannot be proved, and in examining into the matter more closely it will be observed, that in inhaling the compressed air of the cabinet, the diaphragm is pressed down,

and an increase of the vital capacity of the lungs, an enlargement of its volume, is thereby obtained. This is evidently a better explanation than Vivenot's, who thinks that the bowels would be compressed, whereby the cavity of the abdomen became diminished, and the diaphragm then could descend deeper. In regard to the mechanical effect of the cabinet on the circulation, the direct action on the heart, we have nothing but a hypothesis to offer. The increased pressure in the cabinet on all the vessels exerts an increased resistance to the entrance of blood into the same. With this corresponds the weak, small, nearly obliterated pulse. The greatest care is therefore to be observed in treating patients suffering from diseases of the heart. Another mechanical action of the pneumatic cabinet consists in the unequal distribution of the blood, its displacement from the more superficial to the deeper-seated blood-vessels. The mechanical action upon the organs of respiration and circulation, so evident, simple and pregnant in the portable apparatus, is in the same manner indistinct, complicated, and more hypothetical in the cabinet. The never-failing mechanical action is the strength of the portable pneumatic apparatus, but this we are missing in the pneumatic cabinet. Amongst other actions of the cabinet, we find some of a chemical or dynamic nature, which may be explained by an increased admission of oxygen in the compressed air, causing a not unimportant decrease in the frequency of respiration and of the pulse. Dyspnœa is lessened, or may even disappear. Herein we admit the superiority of the cabinet over the portable pneumatic apparatus. With the increased length of time the patient remains in the cabinet, there is undoubtedly an increase of oxygen brought into the system. Still we have it in our power to surpass the cabinet even here, in using oxygen, or a mixture of it and air, in the portable apparatus, which we can dispensate in a compressed state and in doses exactly regulated. If it should be true, as some physiologists assert, that oxygen in a compressed state cannot be absorbed in the lungs, then we declare our inability to explain the results obtained with the pneumatic cabinet, in reference to respiration and circulation.

We have compared as yet only the physiological effects of both these instruments, and any unbiassed mind will not hesitate to pronounce in favor of the portable apparatus, to acknowledge its superiority over the cabinet. Now let us leave theory aside and

consider both from a practical standpoint, in order to see if the scales will not incline on the side of the cabinet. With the portable apparatus we can use a number of therapeutics of different action, which we may apply in different doses, to be modified and combined with each other, according to the individuality of the patient. We may use compressed as well as diluted air, in inspiration and expiration, alternately and combined with each other. In short, we possess in that apparatus a great variety of therapeutics, with confirmed indications. What has the pneumatic cabinet to offer against that list? We have here a simple therapeutic agent, which cannot be modified, except with reference to time and pressure, and what do we see in regard to these two factors? In nearly all those institutions where I have observed the pneumatic cabinets in activity (and there are not many), one and the same compressing power and almost the same time was given to all the patients, with but little difference. Let us compare finally both machines in reference to certain diseases. *Asthma* and *emphysema* are those diseases in which, according to the testimony of such who favor the application of the cabinet, this has been considered the remedy par excellence, and few there are who will contradict it; yet these are the same diseases where the superiority of the portable pneumatic apparatus over the cabinet has been proved and established beyond question. The same may be asserted of *phthisis*. Though we will not enquire which of both methods applied in that murderous disease has to count the greatest triumphs, so much cannot be doubted, that whilst the portable apparatus permits the use of compressed, as well as diluted air, and here the use of the latter is of so great an importance, that the cabinet has since been used only with compressed air.

In reference to diseases of the heart, experience has shown the danger resulting from the use of the cabinet, as proved by Pravaz, Devay, Liebig, and others; whilst, as mentioned before, excellent practical results have been obtained here with the portable pneumatic apparatus.

I will close this article with the words of Waldenburg: "But the owners of pneumatic cabinets count still a large list of other diseases"—all said to be curable by the use of the cabinet (explained by the circumstance that the use of the cabinet has in many instances fallen into the hands of unprofessional men of unscrupulous characters, not quite as numerous in Europe as in

this country, but still there). Ref. "Here the portable pneumatic apparatus modestly retires, leaving the field to the cabinet for accomplishing wonders, whilst it is satisfied with the comparatively few diseases which can be cured or improved by it."

TRACHEOTOMY.

A PAPER READ BEFORE THE NEW ORLEANS MEDICAL AND SURGICAL ASSOCIATION.

BY D. C. HOLLIDAY, M.D.

The operation named above has in almost every instance superseded *Laryngotomy proper*, which is now almost exclusively confined to some peculiar anatomical conditions, which in the opinion of the operator may justify its performance in some specially exceptional cases.

Tracheotomy is an operation now *universally* conceded to be *useful*, *practicable*, and fully *justifiable*, in many obstructions to a free and sufficient passage of air through the natural air passages, such as may be occasioned by traumatic lesions, the sudden supervention of *direct* or *secondary* œdematous infiltrations, the presence of foreign bodies, etc.; but when spoken of in relation to the two most frequent causes requiring its performance, i. e., *croup* and *diphtheria*, although losing nothing of its practical interest, it becomes subject to opinions as varied, views as antagonistic, and advocacy as contradictory, as we find on any subject in practical surgery.

I fear, gentlemen, that in this paper I cannot aim at much that is either novel or original. This subject has given rise to so many exhaustive monographs in various languages and in all civilized countries, that any attempt at originality is only likely to result in plagiarism, the fruit of intention or ignorance.

The object of this paper, therefore, is simply to give a succinct, practical, and concise view of the present opinion of the medical profession on this operation—the most feasible, rapid, and safe way of performing it—and then to review, as far as we are able, he opinions of the many intelligent authorities, both in our own country and in Europe, who have endeavored by statistics carefully collated, and views corrected by vast practical experience, and a careful comparison of results, to clear up the many doubts

and difficulties which surround our subject, and judiciously to decide this frequently most perplexing question, *When* is the *operation necessary* and *advisable*, and even *obligatory*, and what are the conditions existent, or reasonably to be predicted, most favorable or unfavorable to its ultimate success?

Successful tracheotomy is of somewhat recent date—Andree's case in 1782, first in England; Bretonneau first in France, in 1825. Still we find but little success for many years marking its performance until our own time. Since the year 1850 the results have been far different—Trousseau at the lead of Parisian surgeons, followed by *Guersant*, Barthez, and others. The following statistics will call attention to the present view of the operation:

	Oper'ns.	Rec.
French.—Hôpital des Enfans Malades—operations in 12 years to 1863	1013	264
" St. Eugenie—Operations during 15 years	1261	299
" Private operations	154	71
German.—Germanic sources	277	125
" Wilm's Berlin, 10 years	335	103
English.—London Hospitals	170	57
American.—Principal cities	325	84
New Orleans.—Dr. Chas. Faget, 1; 1st series	15	3
" " " "	6	0

Reviewing the above statistics, which are simply an apercue of what is known, we may safely infer that the success attendant upon the performance of tracheotomy is fully equal if not greater than in many other surgical operations—now considered fully justifiable and frequently advisable.

Tracheotomy frequently arrests death otherwise inevitable, and snatches the sufferer as it were from the very brink of the grave; and the combined experience of the world demonstrates conclusively that it is an operation not to be neglected, and that no foolish fear of blame attaching to its unsuccessful performance should for a moment bias our judgment as to its necessity in any case which may present itself to us. There are a great many schools and teachers who are opposed to tracheotomy both in croup and diphtheria, and in many localities especially in our own country we find that the operation has fallen into disfavor.

This may truly be said to be the case in our own city, where

we have but few practitioners who are familiar by their own experience with its application. Our esteemed confrère and fellow-townsman, Dr. Charles Faget, has published a truthful statement of its performance in 20 cases, with *three* recoveries. The cases operated on by Dr. Faget were all of the gravest character, and these results compare favorably with the *commencement* of its performance in other countries. Let us hope then that by frequently discussing this most important subject, and bringing the minds of medical men to investigate the matter, we may render them more familiar with the details of the operation, and that a resort to it may be of much greater frequency, and it needs no prophet to predict that in a very few years we may not be classed among those who are especially derelict in duty; and that at some future day, not far distant, we may point to the statistics of tracheotomy as performed in New Orleans, when our successes may be counted by hundreds, and not by units, as at present.

The chief objections urged against the performance of tracheotomy are—

1st. The difficulties of determining satisfactorily when the operation should be performed and when not.

2d. The great uncertainty of success even under the most favorable circumstances.

3d. And the many contraindications to its performance.

The operation itself I shall merely cursorily review.

The use of *anæsthetics* is adopted by the majority of operators, given in moderation, and so as to insure perfect quiet at the commencement of the operation especially. This is the view in Germany, Great Britain, and the United States; in France the operation is frequently performed without it. A careful dissection is to be made in the median line from the cricoid cartilage downwards, until the trachea is exposed. Hemorrhage, (when it can be done) is to be arrested before the trachea is incised. Our confrère, Dr. Faget, here insists upon fixing the cricoid cartilage firmly with the forefinger at the upper angle of the wound, and then making the incision into the trachea and the free division of two or more of its rings, so as to avoid difficulty in the subsequent steps of the operation. No doubt this facilitates the operation appreciably.

After the tracheal incision, the introduction of a dilator, and trachea freely opened thereby. Here some authors recommend,

especially Hueter, the introduction of an elastic catheter (8 to 12) down to the bifurcation, and the sucking up of blood exuded and such portions of false membranes which may adhere to the eyes of the catheter. When the trachea is as far as practicable relieved of obstructions, the canula is introduced, which is Geo. Martin's original instrument, 1730, modified by Prof. Trousseau, consisting of a double silver tube, the inside one projecting a little, to facilitate its introduction: if attended with difficulty, a bougie may be used as a guide. The proximal extremity of outer tube should be suspended by movable joints in a perforated plate to be fastened around the neck by elastic bands or tapes. Where the canula in rare and exceptional cases produces so much irritation as to render its employment almost impossible, an elliptic piece has been removed from the front of the trachea and the use of the canula dispensed with. The size of this tube should be as large as can be conveniently used without touching the sides of the trachea. After the canula is introduced, and edges protected by oiled silk, the edges of wound to be drawn together by adhesive straps. The canula should be removed as soon as practicable, say usually from the 5th to 9th day, but it may be required to remain for weeks, or even months. The most assiduous attention will be required for the first 24 or 48 hours after operation, so that the many untoward complications and emergencies which may arise shall be intelligently relieved and skilfully remedied.

In many cases where *suffocation* is imminent, and no means of relief suggests itself, and when death appears almost absolutely certain, tracheotomy is advised.

Tracheotomy in diphtheria and croup: in the former, many authors consider the chance of *permanent* relief so slight, as almost to amount to its prohibition, whereas others, on the other hand, believe that the successes even in diphtheria have been frequent enough to justify its performance.

Again, the majority admit that the results of the operation in croup are much more flattering, and therefore that the operation is undertaken with far greater chances of success.

Admit the truth of the above predictions, and then a *differential* diagnosis between croup and diphtheria would be essential to give a comparatively correct prognosis. Aye! here is the rub; how are we to make this discriminating diagnosis? We have as yet failed to acquaint ourselves either from our own experience, which has been somewhat extended, or after care-

fully reviewing the opinions of many authors on this subject. A single recital of the conditions which may exist, and which are not considered as positively contraindicating its performance, will at once prove that it may, under any circumstances, be undertaken.

When dyspnœa is continuous and usually augmenting, with slow but progressive asphyxia, great restlessness, with no *violent* efforts at inspiration, respirations frequent and shallow, pulse small and rapid, face swollen, eyes listless, pupils dilated, skin livid and cold, often bathed in cold and clammy sweat, sensation dull, tips of fingers livid, nails blue, mucous membranes pale—here we presume exudation so general as to preclude due hematosis.

2. Paroxysmal apnœa with more rapid suffocation, and orthopnœa marked, general anxiety and agitation, respiratory efforts violent, inspirations noisy and stridulous, pulse small and frequent, face flushed, then cyanosed, veins swollen, eyes suffused and prominent, mucous membranes blue, *vesicular* murmur *absent*—still operation advised.

Death, we are told, has often occurred where during life auscultation revealed no condition to lead us to expect it, and where autopsy showed no pathological or anatomical lesions sufficient to explain it.

Again, we have the highest authorities affirming that even where vesicular murmur was *distinct* and pure *everywhere*, casts of false membranes, even down to the bifurcation of the trachea, have been subsequently expectorated. In cases apparently in extremis, where even breathing has ceased, the patient has been recalled to life by the operation.

Of course, gentlemen, these are extreme views in every sense of the word.

But they show distinctly, after summing up the whole testimony, that no positive rules for the performance of the operation can be given.

Suffice it to say, that every judicious practitioner will weigh carefully all the symptoms any case he may be called upon to treat may present, surround himself with every reasonable precaution, and then let his own judgment be the monitor.

In conclusion, let me say that my own experience leads me to look with doubt upon the great success of this operation, and this, I fear, is the opinion of many of my hearers: to these I

would say—let us reject prejudice, discard scepticism, adopt the published opinion of the medical world, profit by the enlightened experience of the age we live in; let us determine to operate whenever a reasonable chance of success exists, and ere long our successes will compare favorably with those who have already so far outstripped us.

ON THE USES OF THE BROMIDE OF POTASSIUM, QUININE, MORPHINE, STRYCHNINE, AND CAMPHOR.

READ BEFORE THE NEW ORLEANS MEDICAL AND SURGICAL ASSOCIATION.

BY J. S. HARRISON, M.D.

The question, "What is Truth," was once proposed by a Roman governor to one who claimed to be "The Truth" itself. This question, however, referred to moral and religious truth, and the great effort of the ages past has been to furnish a proper and correct solution of it—with what success the world must judge. Our business, however, as medical men, is to ascertain as nearly as possible, the true nature of all abnormal conditions of the human organism, and the therapeutical agencies that may modify and control those conditions. And to arrive at, or to approximate the truth, in regard to these things, should be the main object of all our investigations and observations in the wide and rich field of scientific and practical medicine. And every member of our profession, however humble his position in it may be, should be ready at all times to contribute his mite to the general stock of medical knowledge for the good of all concerned. And this consideration, more than any other, has induced me to prepare the present paper on the uses of some of the bromides.

As these valuable remedial agents have not as yet come into very general use, in the practice of medicine in this country, and having employed them somewhat liberally in my practice for the last two or three years, it occurred to me that brief notes of some cases in which they have been successfully used, might not be unacceptable to the profession, and especially to the junior members of it.

I. ACUTE RHEUMATISM.

In October, 1874, was called to see Mr. B——, aged 30 years,

a tinner by trade. He had been under treatment by a neighboring physician for a number of days, without obtaining any special relief. I saw the patient in consultation with this gentleman.

At this time his arms and legs were greatly involved, joints swollen and painful, so much so, indeed, that he could scarcely move them.

I advised the discontinuance of the calomel, Dover's powder, and colchicum, which the patient was then taking, and the substitution of the following combination.

℞.—Bromide of potassium, - ʒss,
Tincture aconite root, - ♏ij,
Syrup simplex, - - ʒviij.

Mix. Sig.—One tablespoonful 3 times a day, in connection with the free use of *strong lemonade.* Ordered the limbs to be gently rubbed with the chlorinated oil, and the bowels to be kept open by the use of saline cathartics. In four days the patient could move his arms and legs, with comparatively little pain; in a week, walked about his room, and in about twelve days was able to go to his place of business, several squares from his residence.

He continued the use of bromide of potassium for several days, but soon entirely recovered, and has not had the slightest return of the original trouble since.

Mr. D. W——, about 40 years of age, an intelligent lawyer, had suffered much and long from

II. Chronic Rheumatism.

The ankles and finger-joints were swollen, particularly at night, thus assuming a somewhat periodic, or intermittent character.

He was directed to bathe the parts in warm salt water every night, then dry them, and apply on flannel the *chlorinated oil,* (composed of sweet oil, spirits of camphor, and chloroform), and to take the following mixture.

℞.—Bromide of potassium, ʒiij,
Bromide of quinine, ʒss,
Bromide of morphine, gr. ij,
Syrup simplex, - - ʒviij.

Mix. Sig. One tablespoonful 3 times per day.

When he commenced this plan of treatment, it was with difficulty he could descend a short flight of stairs by the aid of his cane; in a few days, however, he found but little trouble in either ascending or descending the stairs. He expressed himself as greatly relieved. He left the city, however, in a short time after, with a promise that he would continue the treatment, and give the medicine a full and fair trial; but as I have not heard from him since he left, I am unable to report the result of the action of the medicine, but have no doubt he continued to improve.

J. A——, 33 years of age, occupation, steamboat pilot, was attacked about the middle of July of the present year, while on his usual trip up Red River, with

III. MALARIAL FEVER—BILIOUS REMITTENT.

He had taken, while on the down trip, largely of sulphate of quinine and blue mass, and had also been severely purged, but still continued sick and feverish. Before the attack he had been indulging freely for some time in the use of ardent spirits.

I saw him soon after he was brought to the city; found him exceedingly nervous and prostrated; still feverish; had slept very little for three nights; said he had not slept at all.

He was directed to take the following.

℞.—Bromide of potassium, ʒiss,
Chloral hydrate, - ℈j,
Syrup simplex - ʒiv.

Mix. Sig. One tablespoonful every two hours until quieted. After the second dose he went to sleep; slept quietly *for five hours*; awoke feeling greatly relieved and much refreshed, with moist surface and no fever. Two days after, he became restless with slight fever again.

The bromide was repeated twice with the same favorable result; the thirst, heat and dryness of surface, passed away. I feel it my duty, however, to say that during the two preceding days, he took every four hours a fever preparation, composed of liq. amon. acetatis, sweet spts. of nitre, and tincture of aconite root. After this he was ordered the following pill.

℞.—Bromide of quinine, ʒss,
Pil. hydgr., - gr. xv,
Pulv. pip. nigri., gr. v.
M?—Ft. pills xv.

Sig. One pill morning, noon, and night, for several days. During the treatment he was allowed the free use of ice-cold lemonade. He recovered rapidly, but continued to take one of the pills every morning for a number of days. He is now quite well.

In certain cases of

IV. Continued Fever,

and particularly where they assume a typhoid character, with sordes upon the teeth, great restlessness and insomnia, 15 or 20 grains of the bromide of potassium or ammonium dissolved in camphor water, given in the evening, as recommended by Dr. Wm. Moore, of Dun's Hospital, Dublin, will generally produce a most soothing and desirable effect; and this may be repeated during the night if necessary.

And I have thought that the same course might be pursued very profitably to the patient in *yellow fever cases*, attended with great restlessness, when it becomes so difficult sometimes to keep the patient quiet. I have used in a few cases of this kind 30 gr. doses of chloral, every two hours, dissolved in camphor, or mint water, until quietness and sleep ensued. Under similar circumstances, however, I should *now*, by all means, use a combination of bromide of potass and chloral in suitable proportions, given every hour, unless promptly rejected by the stomach, until the patient became quiet and sleep followed.

And doubtless the experience of the profession will bear me out in saying that few, if any remedies, are more efficient or satisfactory in their results in the general management of cases of

V. Delirium Tremens,

than bromide of potass in full dose, combined with a little chloral hydrate dissolved in syrup of orange peel.

In nearly all the cases of

VI. Syphilis,

requiring the salts of potass, I have for the last few months substituted the bromide for the iodide, with apparent advantage.

And where there is much prostration of the general system, as sometimes occurs in *secondary* and *tertiary* syphilis, also in the formation, opening and discharging of a bubo, if I use

potass at all, I invariably combine with it the *bromide of quinine* in some bitter infusion, so as to have the patient take at least 3 grains three times a day. And this preparation of quinine may be continued once or twice a day until the patient's general health is restored, or greatly improved. I have pursued this course in one case recently with apparently great advantage.

VII. In Cases of Neuralgia,

and especially of a periodic character, the bromide of quinine and the bromide of morphine will be found to answer a good purpose, both of which are soluble in simple syrup. The following is a very convenient prescription.

℞.– Bromide of quinine, gr. xvi,
Bromide of morphine, gr. ii,
Syrup of orange peel, - ℥ij.

Mix. Sig. One teaspoonful every hour or two until relieved. In many cases this combination will be found to give almost immediate relief.

VIII. In Cases of Chronic Intermittent,

which have resisted the use and power of the *sulphate* of quinine, and in which the paroxysms occur every *third day*, perhaps no remedy will be found to give greater satisfaction than the combination following.

℞.—Bromide of potassium, - - - ʒiiss,
Bromide of quinine, - - - ʒss,
Bromide of strychnine, - - gr. i,
Tincture of gentian, or good brandy, ℥viij.

Mix. Sig. One desertspoonful every 6 hours during the intermission.

An hour before the expected chill the patient should be required to take to his bed, take a cup of some warm tea, and remain quiet until the paroxysmal hour passes. After missing his chill for two other paroxysmal days, the medicine should be continued at least once a day for two weeks, and the result rarely fails to be a favorable one.

IX. Whooping Cough

is, in many cases, most favorably influenced by the use of the

bromide of potass and morphine. The size of the dose, of course, must be regulated by the age and general condition of the patient. Say for a child four or five years of age, of about the following strength.

℞.—Bromide of potassium, ʒi,
Bromide of morphine, gr. i,
Syrup simplex, - ℥iv.

Mix. Sig. One teaspoonful every 3 or 4 hours during the day. If the little patient should become too drowsy, the medicine should be discontinued for a few hours.

Sometimes *whooping cough* seems to be complicated with intermittent disease, becoming, as I have observed it in a few instances, a "*masked intermittent*," particularly in malarious districts or localities. Where we have reason to believe this to be the case, we shall find a combination of the bromide of quinine with the foregoing prescription to answer an exceedingly valuable purpose, in such doses as the special case may seem to require.

Under this treatment, the paroxysms of coughing become less severe, and in some instances the duration of the disease is sensibly shortened. To say the least of this plan of treatment, it is worthy of farther trial.

Bromide of Camphor.

My experience with this agent is very limited, but I can readily conceive how, in certain cases of nervous disorder, as in neuralgic affections of the head, spasmodic cholic in infants, hysterical paroxysms in delicate females, and the like, it will answer a good purpose. Dr. Joseph Scott, and other gentlemen of the profession in the city, have used this preparation much more extensively than myself, and speak of its curative agency in the highest terms. I employed it recently in the case of an infant three months old. The child seemed perfectly well during the day, nursed well, slept well, but about eight o'clock every evening was seized with what seemed to be cholicy pains, almost producing spasms. To relieve the little sufferer the following was ordered.

℞.—Sub- carb. bismuth, gr. xv,
Bromide of camphor, " ij,
Bromide of quinine, " ij.
M. Div. cht. 10.

Sig. One powder three times a day. The difficulty was obvi-

ated after the third powder, and the child was entirely relieved and has had no return.

Of all the bromides, these we have mentioned are perhaps the most valuable.

Dr. B. W. Richardson, of England, says: "Speaking generally, the bromine in these salts is *eliminative* and *sedative*, and it is the result of experience," continues he, "that the bromide of quinine can be administered when the sulphate itself *will not be tolerated*; it is certain, also, that the bromine favors the sedative action of morphia, while at the same time it obviates the astringency which the sulphate induces."

This paper might very readily be extended much beyond its present limits, but the *few cases* and *facts* to which we have now referred are all we wish to present at present.

CASES OF LIGHTNING STROKE.

BY C. S. GALES, M.D.

On September 5th, 1875, a boat containing five men, who were fishing in Côte Blanche Bay, was struck by lightning. Two of the five, one white and one colored, were killed outright; three were stunned. Two recovered in the course of fifteen or twenty minutes; one remained insensible for over an hour. To this one I was called, and his case I now report. Found him suffering agony, complaining principally of his chest. Examination revealed no fracture of any bone, nor any evidence of serious internal injury. Injected morphia to enable him to bear the ride, one mile and a half, to his home.

He had received the shock on the left side of the head, just over the temple in the part of his hair. It singed a spot about the size of a dollar here, and the hair was moppy and tangled like negro wool. It spread full shape over the side of the face, burning the moustache like the hair, and crossing over the chest split, one fragment passing down the right arm, blistering the skin over the head of the radius, passing off at the wrist. The skin under his collar button was blistered and deeply burned. The collar button itself was melted like filagree work. The other fragment passed down the right side, leaving no mark until it reached the hip. Over the trochanter major was another blister. Where-

ever the bones came near the surface there the fluid seemed to burn deep. Several lesser patches of skin were blistered between the hip and knee. At the knee another deep burn, and at the external malleolus another, with smaller blister between, as in the space between the hip and knee. These burns healed kindly under carbolic acid and olive oil treatment. His most distressing and obstinate symptom was persistent pain in the chest and shoulders, the pain radiating over the chest from the clavicle to an inch below the nipple, on both sides, shifting to the shoulders, and passing down the arm on first one side and then the other. Discovered a tender spot over a nerve between 4th and 5th ribs, just after it leaves the internal foramin: diagnosed intercostal neuralgia. Tried every remedy that I had ever read of, or heard of, for its relief, with no permanent result. His only relief was from the hypodermic use of morphia. He eventually wore it out, and is now up and at work. A curious feature of the effect of the lightning in this case was the effect it had on the hairs of the patient's legs. These were collected into little tufts from three-quarters of an inch to an inch apart, and so entangled that he was obliged to cut the hair all off his legs with a razor. He still complains during cloudy weather, and when there is lightning, of pain in the chest—not severe, however.

Franklin, La.

BROMIDE OF POTASSA IN INFANTILE CONVULSIONS.

BY C. O. WELLER, M.D.

December 25th, 1873, Tom Dodson, a negro boy four and a half years old, was brought to my office to be treated for "fits." His parents informed me he had been having them almost daily for two or three months, and though medical advice had been received and followed, he grew gradually worse. At this time the disease had made such progress as almost to have deprived him of the power of locomotion and of speech, and from a boy of ordinary intelligence he had lapsed into a state of almost idiocy.

From the history his parents gave me of his case—his symptoms during the attacks of convulsions—I concluded the trouble to be epilepsy. I gave him bromide potassium in liberal doses, and directed that he be brought to my office every week, that I might observe the effect of treatment.

After using the bromide about one month he had very much improved, was more intelligent, could talk better, was regaining the use of his legs, and the convulsions were neither so frequent or severe. I ordered the same medicine continued. Six months from commencement of treatment he had completely regained the faculty of speech, also his intelligence, and could run and exercise himself as other healthy children. He continues in that condition to this time—nearly two years from commencement of treatment—except that he will occasionally have a convulsion when from under the influence of the bromide; but whenever it is commenced again, and his system brought under its influence, the convulsions cease.

I report this case merely to add my testimony to that of others of the controlling influence of bromide of potassium over epileptic convulsions; and though we may not have in it a positively *curative* agent, yet one eminently *palliative.*

COLUMBUS, TEXAS, December 3d, 1875.

MISCELLANEOUS.

PLAQUEMINES PARISH MEDICAL AND SURGICAL ASSOCIATION.

[The attention of the readers of this JOURNAL is especially invoked to this new organization, and a hope is indulged that the good example will not be lost upon other communities of our profession throughout this section.—ED.]

PLAQUEMINES PARISH, Nov. 26th, 1875.

Editor New Orleans Medical and Surgical Journal:

Dear Sir—In accordance with a resolution passed upon that day, I have the honor to inform you of the organization of the "Plaquemines Parish Medical and Surgical Association," which was effected at Point à la Hache on November 15th, 1875. It is composed of the following gentlemen, they being the only regular graduates in the parish, viz.:

Dr. J. B. Wilkinson, *President,*
" D. R. Fox, *Vice President,*
" Geo. A. B. Hays, *Secretary,*
" Wm. P. Williams,
Dr. Wm. B. Booth,
" L. P Guyol,
" C. P. Wilkinson,
" N. M. Hébert.

The Constitution and By-Laws are similar to those of the "N. O. Medical Association."

Very respectfully,

GEO. A. B. HAYS, M.D., *Secretary.*

AMERICAN OTOLOGICAL SOCIETY.

At the last meeting of this Society, held in Newport, R. I., July 21st, 1875, it was

Voted—That the Committee on an International Congress be empowered by this Society to issue a call for an International Otological Congress, at such time and place as they shall see fit.

In accordance with this vote, the committee have called a congress to be held in New York city, on Friday, September 15th, 1876, at 10 o'clock, A. M., the place of the meeting to be announced later.

Members of the profession who take an active interest in aural surgery, are cordially invited to be present and take part in the congress.

W. B. ST. J. ROOSA,
CLARENCE J. BLAKE.
HERMAN KNAPP,
J. ORNE GREEN.

MEETING OF THE ASSOCIATION OF THE MEDICAL OFFICERS OF THE CONFEDERATE STATES ARMY AND NAVY.

The second annual meeting of the Medical Officers of the Confederate States Army and Navy convened in the hall of the House of Delegates of Virginia, in the State Capitol, on Tuesday, October 19th, 1875.

The following is the list of officers chosen for the ensuing year:

President—Dr. Hunter McGuire, of Richmond.

Vice President at Large—Dr. Henry F. Campbell, Augusta, Ga,

Vice Presidents for States—Drs. J. J. Chisholm, Maryland; J. Herbert Claiborne, Virginia; S. S. Satchwell, North Carolina; Middleton Michel, South Carolina; James Bond Read, Georgia; E. T. Sabal, Fla.; J. B. Gaston, Ala.; S. V. D. Hill, Miss.; Sam'l D. Chopin, La.; David R. Wallace, Tex.; Paul F. Eve, Tenn.; D. A. Linthicum, Ark.; O. M. Webb, Ky.; G. McDonald, West Virginia; Walter Coles, Missouri.

Secretary—Dr. John M. Payne, Richmond, Va.

Treasurer—Dr. W. W. Parker, Richmond, Va.

Executive Committee to consist of President, Vice Presidents, Secretary, and Treasurer.

The exact time and place of next meeting will be announced in a circular letter soon to be issued.

CURRENT MEDICAL LITERATURE.

ANATOMY, PHYSIOLOGY AND PATHOLOGY

[Compiled by F. Lieber, M.D., Professor of General and Descriptive Anatomy, Charity Hospital Medical College, and George K. Pratt, M.D., Professor of Physiology, Charity Hospital Medical College.]

THE TREATMENT OF PATENT URACHUS.*

By J. J. Charles, M.D.,

Demonstrator of Anatomy, Queen's College, Belfast.

The urachus extends from the apex of the bladder to the umbilicus, and is composed of fibro-areolar tissue, with some muscular fibres continuous with those of the bladder. It retains the tubular character of the allantois up till about the thirtieth week of fœtal life; and its cavity is in great part obliterated a short period before birth, though to a variable extent, perhaps, in different instances. In the infant, the urachus appears to be a solid cord; but Luschka, as the result of numerous and careful observations, states that it "presents vestiges of its original condition in the form of a long interrupted cavity, with irregularities and dilatations lined with epithelium similar to that of the bladder, and sometimes communicating by a fine opening with the vesical cavity." (Quain's *Anatomy*, 1867, p. 945). From this, it is easy to understand, more especially in cases where the obliteration is less complete at birth than usual, that any obstacle to the flow of urine from the bladder may give rise to undue distension of that viscus, to dilatation of the slender cavity in the urachus, and to the discharge of urine from the umbilicus; and Cruveilhier, I may remark, observed patency of the urachus only in those cases in which the urethra was obliterated. Of course it is possible that patency of the urachus may be due entirely to arrest of development, and there may be no urethral or other obstruction to remove; but such cases are, I believe, of exceptional occurrence. Accordingly, the mode of treatment which appears to be the most rational in the majority of cases of this kind is undoubtedly the removal of any obstruction that may exist to the flow of urine by the ordinary passage, whether that be a phimosis or a calculus. In the cases of patent urachus on record, the treatment has been directed solely to the contraction and closure of the aperture at the umbilicus by the actual cautery or by a plastic operation; but all such attempts, as might be expected, have proved abortive. (Holme's *System of Surgery*, vol. v., p. 820.) To Professor Redfern is to be ascribed the credit of recommending circumcision: a novel plan for the cure of this abnormality, and one founded, as I have shown, on a considera-

* Read in the Surgical Section at the Annual Meeting of the British Medical Association in Edinburgh, August, 1875.

tion of its true nature. In the case I am about to relate, a somewhat similar mode of treatment was adopted with a good result.

Y., a strong, well-developed boy, about a year old, was seen by Professor Gordon and myself in April last. The umbilical cord, it seems, fell off at the usual time, and urine was discharged ever afterwards during micturition at the umbilicus, welling up into the umbilical cup, filling it, and running over in such quantity that the parents had no reason to doubt as to the nature of the fluid. The urine was passed with difficulty by the urethra, and fell down from the orifice. No tumor was visible at the umbilicus; the prepuce was long, contracted, and adherent to the glans. Tincture of perchloride of iron had been applied to the umbilical aperture to produce contraction, but without avail. I operated for the phimosis according to Dr. Gordon's plan of slitting up the prepuce, as it seems to be very simple and efficacious. A nævus needle was passed between the glans and the prepuce, and out through the prepuce at the corona. The prepuce having been grasped longitudinally beneath the needle by a pair of strong forceps, as much of it as was thus embraced was cut away by running a knife through the tissues along the lower border of the forceps. The mucous membrane was separated with difficulty from the glans, then cut freely, and its edges fixed to the skin by two sutures. Dr. Redfern saw the child lately, and has written me to say that, since the operation, the mother has been "quite pleased to see the urine projected to some distance from the body in the natural manner. Very little urine has come through the umbilicus; but at one period some blood oozed away," which was readily stopped by the application of tincture of perchloride of iron. "When I last saw it," he continues to say, "there was scarcely any appearance of ulcer or opening of any kind."

In some instances where the cure after circumcision has not proved complete, it might be necessary, in addition, to operate directly on the urachus according to the plans already mentioned; but neither in patent urachus nor in umbilical fæcal fistula can we reasonably expect a cure, so long as there is an obstacle to the passage of urine or fæces by the ordinary route.—*British Medical Journal.*

ABSENCE OF THE CLAVICLES.

In the *Archiv der Heilkunde*, vol. xvi, O. Kappeler describes the case of a girl, aged 16, in whom on one side there was only a rudiment of a clavicle, an inch and a half long, loosely connected with the sternum; and in the other, where also the cleido-mastoid muscle was absent, one only three-fifths of an inch in length. Both humeri could be easily brought in front of the chest until they touched; and yet there was no functional

disturbance, the absence of the clavicles being completely compensated by muscular action, especially as regarded the fixation of the scapulæ.—*British Medical Journal.*

ARNOLD ON THE CONDITION OF THE WALLS OF THE VESSELS DURING THE EMIGRATION OF WHITE BLOOD-CORPUSCLES.

Dr. Jul. Arnold, of Heidelberg (Virchow's *Archiv*, vol. lxii.) has examined the conditions under which red blood-corpuscles emigrate, and the question arose whether the white blood-corpuscles leave the walls of the vessels in the same manner, or whether they penetrate the epithelial plates themselves. To decide this question, he examined the mesentery, the tongue and the bladder of the *rana temporaria* and the *rana esculenta*, and found that generally the white corpuscles leave the vessels by means of stigmata. The irritation of the organs was caused in different ways. Thus, the mesentery was exposed for a few hours to the atmosphere, while the tongue was injured and the bladder was injected by a weak solution of nitrate of silver. Infusions of cinnabar into the blood were also made with the view to color the white blood-corpuscles. Twenty-four hours after the operation the animals were bled to death, and then the circulatory system was injected from the aortic bulb by a solution of nitrate of silver $^1/_{2000}$ to $^1/_{3000}$. The examination of the preparation took place immediately in a three-fourths per cent. solution of chloride of soda, or after coloring with carmine in glycerine.

The white corpuscles could be observed in numerous phases of emigration. The transmigration always took place at certain points (stigmata). Had the process of emigration been stopped in time, the emigrated blood-corpuscles were to be seen in the sheath of vessels, or at a short distance from this. The form of the white corpuscles is elongated in the state of escape. Many of them have prolongations, fixed in the stigmata. Sometimes numbers of white corpuscles accumulate on the outer walls of the vessels, so that the lining epithelial membrane appears to be separated from the sheath of the vessel. The author never observed that the plates themselves were penetrated by the white corpuscles.

As a result of the disturbance in circulation, combined with the emigration of white blood-corpuscles, it was found that the borders of the cells forming the vessels are not so distinct as in a normal state. Between them are a greater number of dark spots (stigmata) than in a normal state, generally not so large that red blood-corpuscles could pass them. Dr. Arnold observed that granules of cinnabar, as well as colloid substances, may leave the vessels through the stigmata. The cause of the easier penetrability of the vessels may be found in an alteration of the condition of the cement connecting their cells.

A great number of the emigrated while corpuscles are carried off by the lymph-vessels. The author thinks that with the disturbance in circulation during emigration there are connected currents directed towards the walls of the vessels, and that they are of different strength.—*London Medical Record.*

VIRGILIO ON A CASE OF MICROCEPHALIA.

Gaspari Virgilio describes, in the *Rivista Sperimentale di Freniatria e Medicina Legale*, 1875 (abstract in *Lo Sperimentale*, June), a case of microcephalia observed by him in an idiot in the Asylum at Aversa. The subject was of low stature, and had a short neck, broad shoulders, a very small head and long arms; he squinted, and there was defective coördination of movements. He preferred to climb like a monkey; he manifested neither affections, wishes, nor desires. He scarcely possessed the fundamental instincts. He did not speak, but emitted harsh acute cries. He died in consequence of a fracture of the thigh while climbing.

Dr. Virgilio remarks that the absence of speech places this case in the most advanced class of idiocy. As in the lower animals, reflex images of the exterior of objects could be formed on the sensorial apparatus, and when these images excited his wants he was led to employ actions and movements which by no means expressed the idea which he might have. If this individual be placed at the level of the apes by the absolute want of articulate speech, by the defect of intellect, and by many other characters, such as the mode of walking, the bending of the head forward, the length of the arms, the uniform curvature of the spine and the bending of the lower limbs at the knees, and by his habit of climbing, he ought to be placed in a still lower scale, as he did not present those mental manifestations which are common to all apes.

The face lay remarkably in front of the cranium, so that an imaginary plane dividing these two parts would be nearly perpendicular to the horizontal plane between the occipital condyles and the upper alveolar ridge. The skull was oxycephalic, terminating in a point at the vertex, the parietal protuberances being absent. The forehead was very narrow; there was a sudden contraction above the orbital apophyses. The coronal suture was very strongly marked internally, and the fronto-nasal suture passed 0.16 inch below the horizontal line joining the two orbital apophyses. The fronto-parietal suture ran parallel to the facial line. The roof of the orbit was extremely concave. The zygomata were very prominent, and the canine fossa were strongly marked. The face was eminently prognathous, the upper dental arch projecting far beyond the lower. The chin, however was prominent. The lineæ temporales were raised so

far upwards as to make the skull appear as if enveloped in the temporal muscles—a simial character. The temporo-parietal sutures were completely closed.

When placed on a flat surface, the skull rested on the last molars in front and on the condyles behind, like the skull of an ape. The posterior border of the occipital foramen was 0.27 inch above the plane. The foramen was situated entirely in the posterior third of the base of the skull.

In the interior, deep digitations were observed; all the sutures were distinct. In other respects the skull was symmetrical. The following were the principal measurements: horizontal circumference, 13.3 inches; antero-posterior curve, 8.6 inches; transverse curve (from one ear to the other), 7.5 inches; longitudinal diameter, 4.5 inches; maximum transverse diameter, 3.6 inches; vertical diameter, 3.8 inches.

From a table given by the author, it appears that this skull is one of the smallest known; in this respect it approaches the skull of the chimpanzee, the circumference of which is about 12 5 inches.—*London Medical Record.*

De SINETY ON THE MAMMÆ OF NEW-BORN INFANTS.

De Sinéty (*Journal de Physiologie*, July, 1875) confirms the well-known fact that the mammæ of new-born children of both sexes, specially at the third or fourth day after birth, secrete milk. The author finds that the milk which is obtained from the mammæ of new-born children, several days after birth, is the result of a true secretion, and that the anatomical and physiological state of the mammary gland corresponding to that period is in many respects comparable to that which is to be observed during lactation in the adult female.—*London Medical Record.*

EBERTH ON BACTERIA IN PERSPIRATION.

Dr. Eberth, of Zürich (Virchow's *Archiv*, vol. lxii.) found, by aid of the microscope, in the sweat from the face, some corpuscles which he considered as bacteria. This view became confirmed when he examined the axilla, breast, and inner side of the thigh of several persons in a state of perspiration. The sweat of these parts contained nearly always enormous numbers of bacteria. In most cases they originated from minute bodies found upon the hairs in the mentioned regions, forming little nodules on them, and giving them a greyish or a brick color. They were recognised by the author as accumulations of micrococci. They may rapidly increase in number, are smaller than the diptherial micrococci, and are nearly indifferent to reagents

(concentrated acids, alkalies, alcohol, ether, chloroform). Iodine colors them yellow. The vegetation of bacteria on the hairs may be observed in cases where they are changed already, beginning in places which have clefts between their cells. The vegetation occupies large spaces, especially in the direction of the longest diameter of the hair. Dr. Eberth observed a mycelium and micrococci, and thinks that the latter are the fruits of the former. Other investigators observed colored sweat, red and blue, which contained micrococci. It was difficult to decide in these cases if the coloring matter was adherent to the micrococci, or if it was a product of the vegetation.—*London Medical Record.*

SURGERY.

[Compiled by SAMUEL LOGAN, M.D., Professor of Anatomy and Clinical Surgery Medical Department, University of Louisiana.]

SURGICAL DIAGNOSIS.

The following admirable summary on the subject of Surgical Diagnosis, is so little susceptible of condensation that we republish it almost unabridged from the *British Medical Journal* of October 13th, 1875, omitting only the opening remarks. It is from the late Mr. Christopher Heath.

And now I bring before you a man with no special deformity or ailment, in order that I may be able to show you a few noteworthy points which you can readily appreciate at a little distance, and which will assist you in studying disease and injury in the wards. With his back towards us, you have the opportunity of examining a healthy spine; and you may notice that, while the spinous processes are readily visible in the dorsal region (and particularly when the arms are folded), they are not so visible in the lumbar, and still less so in the cervical, region, where they are covered by muscles and ligament, the seventh, or *vertebra prominens*, being the only one really seen or felt. Here, in a healthy adult, we have the average anterior and posterior curves in the lumbar and dorsal regions; but you must remember that, in young children, the spine is nearly straight, while in disease we may have great exaggeration of either curve. Thus, in the back, we find *cyphosis*, or angular curvature, the result of caries of the vertebræ; while in the loins we have *lordosis*, an exaggeration of the healthy curve, and generally connected with old hip-disease.

The model is now standing at "attention," with his knees straight; consequently the two sides of his pelvis are perfectly even; and you see that a tape carried between corresponding points on the two sides is horizontal. Let us now make him "stand at ease," with the left knee bent and foot slightly ad-

vanced, and you see that at once the left side of the pelvis is lowered. But this is not all. Corresponding with the obliquity of the pelvis, we have a lateral deviation of the spine to the left in the lumbar region; and if the man could sufficiently relax his muscles at the moment, we should have a curve in the opposite direction—to the right—in the dorsal region. By placing a book beneath the right heel, and thus increasing the obliquity of the pelvis, I exaggerate the lumbar curve; or, of course, by tilting the pelvis in the opposite direction, I could throw the spine over to the opposite side. Of course, the same thing holds good if the patient be seated instead of standing; for, by tilting his seat, we are able to produce a marked lumbar and a certain amount of dorsal curve at will. Fortunately, we have here to-day also a case of old hip-disease, in whom the obliquity of the pelvis is well-marked, and the resulting twist of the spine better seen than in the healthy subject. You see, then, how important it is in any case of lateral curvature to ascertain whether it depends upon some obliquity of the pelvis (from atrophy of one leg or old hip-disease), or upon other causes; and you also see what effect upon an existing curve may be produced, as has been well pointed out by Mr. Barwell, by raising the side of the pelvis by means of a thickened sole or a sloping seat.

Turning, now, to the neck and shoulder, I pass my finger along the clavicle, which is subcutaneous, and shows its curves well enough in a thin muscular subject. The notch between the clavicles is important in connection with aneurisms of the great vessels of the neck; but the inner end of the bone is very rarely dislocated, except by extreme violence. The outer end of the clavicle is continuous with the acromion process, and I now run the chalk along them; but it may be dislocated (as we have lately seen), and then the flattened end of the bone is readily felt beneath the skin. If I make the man swing his arm round, you will be able to appreciate better than you perhaps have hitherto done the great range of motion in the sterno-clavicular articulation, which, in fact, admits of "circumduction," and has a most important relation to the movements of the arm.

There is no joint, I suppose, about which more mistakes are made than about the shoulder. An "obscure injury about the shoulder" has often damaged a surgeon's reputation, because he has not sufficiently studied the anatomy of the part to be quite sure of his diagnosis and treatment. The chalk-line I have already made marks the bony arch formed by the clavicle and acromion; but you will notice that the head of the humerus projects beyond this in front, and gives the roundness to the healthy shoulder. There is a hollow immediately behind the head of the humerus and below the prominent acromion; and another in front, to the inner side of the head, in which the coracoid process can be more or less distinctly felt, according to the muscularity of the subject. In the healthy subject, there is just room to lay the finger between the coracoid process and the head of

the bone. When the head of the humerus is *dislocated*, the roundness of the shoulder is lost, and the acromion stands out prominently beneath the skin, with a depression below it; while the head can be felt in some unnatural position, and out of its proper relation to the coracoid process. The direction of the whole limb is altered, too; so that the patient cannot place his hand on the opposite shoulder with the elbow touching the chest-wall, as he can in health. In a *fracture* of the neck of the humerus, the roundness of the shoulder is not lost; but there is a depression below the head, which does not move when the arm is rotated, unless, indeed, the fracture be impacted. The two accidents may be combined; but this is a rare complication.

When I turn the model with his back to you, and make him raise his arm, you will appreciate how important the movements of the scapula are. The deltoid alone can only raise the arm to a right angle with the trunk; and the subsequent elevation of the limb depends upon a rotation of the scapula on the ribs, so that the angle comes forward to the margin of the axilla. The scapula is held in its place by the muscles passing from the spine to its base, and by the serratus magnus. If these be paralyzed, the scapula falls forward, and the power of the arm is greatly lost.

Let us pass on to the elbow. With the forearm bent, you see at once the prominent olecranon process of the ulna. When this is broken off by falls on the elbow, the fragment is drawn up by the triceps, and an interval can be felt between it and the bone, which, however, is rapidly filled up by the effusion immediately following any injury to the elbow-joint. A much more common result of a fall on the elbow, however, is an injury to the bursa which lies between the subcutaneous triangle of the olecranon and the skin. In health this bursa cannot be recognized, except in individuals whose occupation has produced enlargement of it—*e. g.*, miners or sweeps; for though it is technically called the "student's bursa," I must confess to have never seen an enlargement of it due to long poring over medical treatises. When the bursa is inflamed, it causes a swelling over the olecranon, which is evidently quite superficial, and does not mask the general outline of the joint, as would be the case were the effusion in the articulation. You may remember that, last week, a patient with suppuration of this bursa was treated by an early and free incision in Ward I.

The condyles of the humerus are readily felt in this thin arm; and you will notice that the internal is the most prominent, and stands out beneath the skin. Immediately behind it is the groove in which the ulna nerve lies, as you may ascertain for yourselves by "twanging" it; and then comes the olecranon, with only just space for the nerve between the bones. This close relation of these two prominent points of bone is of great service in the diagnosis of dislocation of the forearm; for, so long as they lie close together, the deformity cannot be caused by a dis-

location of the ulna. The outer condyle is more rounded; and immediately below it is the head of the radius, which can be felt rotating when the forearm is pronated or supinated. It is not often dislocated, for it is firmly held by ligaments; but it is sometimes thrown forward, and then prevents complete flexion of the forearm, by coming against the front of the lower end of the humerus.

At the wrist, you may notice that the end of the radius is lower down than that of the ulna, and that the styloid processes of both bones are to be felt. Dislocation of the carpus from the radius is rare; but separation of the lower epiphysis of the radius is by no means uncommon in young persons, and is sometimes mistaken for dislocation. The triangular fibro-cartilage which binds the radius and ulna together at the wrist, sometimes becomes displaced in children who are dragged forcibly by the hand, and then the little patient cannot supinate the forearm and hand; but if you hold the hand firmly, and then supinate, you hear a slight click, and all is well. It is well always to bear in mind that, in supination, the bones of the forearm are parallel, and in pronation are across one another; so that supination in the posture in which fractured bones of the forearm should be set, although it is convenient, when the bones are firmly held by splints, to turn the thumb upwards– *i. e.*, to place the hand midway between pronation and supination.

In the hand, I need only point out that the superficial palmar arch does not correspond precisely to any one of the lines in the skin of the palm; but its convexity reaches generally to the middle one of the three, while the deep arch is much nearer the wrist. The bifurcation of the digital arteries is between the heads of the metacarpal bones, and about midway between the line to which I have referred and the web of the fingers; so that incisions should always be made in the line of the fingers, and not between them. As you may have, early in your career, to amputate a crushed finger, I would remind you, also, that the prominence of each knuckle is formed by the proximal bone of the articulation, and that the joint through which the knife must pass is below this in every case.

Descending to the groin, you see that the fold of the groin corresponds to Poupart's ligament; and an inguinal hernia is above, while a femoral hernia is below, this line—at least at first. Of course, a large inguinal hernia will descend into the scrotum, and a large femoral hernia may turn up over Poupart's ligament, and closely simulate the inguinal variety. But you ought to have little difficulty in distinguishing them if you will invaginate a piece of scrotum (or labium in the female) on the forefinger, as you see me doing, so as to carry the finger into the external abdominal ring. This will enable you to settle at once whether the protrusion has taken place through the inguinal canal or not. Let me also remind you to ascertain the presence

of two testicles in the scrotum; for an undescended testes may closely resemble a hernia, especially if inflamed.

The pelvis is so firmly bound together, that a dislocation of one of the innominate bones can only be produced by extreme violence; but disease of the sacro-iliac joint is by no means uncommon, though often overlooked; and one leading symptom is lameness, which is erroneously referred to the hip-joint. But if I make the man before us stand on one leg, you will see at once how the whole weight of the body falls upon the corresponding sacro-iliac joint while he is throwing the other leg forward; and it is this which gives rise to the pain, and prevents the walking of a sufferer from sacro-iliac disease. Taking this man, who has a healthy pelvis, I may compress his two innominate bones without giving any pain; but a woman who has recently had a severe labor, and has, perhaps, incipient sacro-iliac mischief, will cry out at any such rough treatment, though the steady support of a good pelvic belt would give her great comfort, and restore her powers of locomotion.

The hip-joint in health is freely movable in all directions, as you see, and independently of the pelvis; but, the moment the joint is inflamed, the muscles instinctively contract, and fix the joint to some extent; and then, when the limb is moved, it carries the pelvis with it. This man's back is naturally more curved than a child's; but even in him, if I make him lie flat on the table, you will see that the thigh can be fully extended without tilting up the pelvis, and so increasing the curve of the lumbar spine. In a child, whose back is naturally flat on the table, the effect of early hip-disease is readily seen (as I have frequently demonstrated to many of you); for the attempt to bring the thigh down at once elevates the pelvis, and causes that curvature of the lumbar spine which, in old hip-disease, becomes permanent.

The prominence of the great trochanter will vary in different individuals, according to the muscularity of the buttock and the length of the neck of the femur; and it is important, therefore, to compare the two sides in every case of suspected disease or injury. The head of the femur can be indistinctly felt on deep pressure, either in front of or behind the trochanter; and, in health, the two move together; for if the trochanter can be freely moved by rotating the femur without affecting the head of the bone, it is clear that the neck must be broken. The length of the neck will very much affect the power of rotating the limb; thus if the neck be shortened, either by an impacted fracture or the absorption of old age, the arc in which the upper part of the thigh moves will be found to be much smaller than in health. When I stretch a tape from the anterior superior spine of the ileum to the tuberosity of the ischium, you see that, in health, it touches the top of the greater trochanter; now, if the bone were dislocated or the neck broken, the trochanter would be above or below this line.

When the knee is extended, you see the patella forming a prominence in front of the femur; but, when the joint is flexed, it sinks into the hollow between the condyles. With the leg fully extended and the muscles relaxed, there is, as you can prove in your own limbs, considerable lateral movement of the patella possible in the healthy joint; and the mistake is sometimes made of attributing this mobility to the presence of synovial effusion. When fluid is poured into the knee-joint, however, not only does the patella float so as to be freely movable in any position of the limb, but the synovial pouches on each side of and above the patella are distended, and give the characteristic roundness to the knee. If one kneel down on a flat surface, and particularly if the body be bent forward, as in scrubbing a floor, the patella and the bursa between it and the skin are exposed to considerable pressure; and hence the chronic enlargement of that bursa, termed "housemaids' knee," which causes a globular swelling in front of the joint, altogether different from that of effusion. Kneelers on bassocks or foot-boards do not run any risk of the housemaids' fate; for the pressure in their case comes on the tubercle of the tibia, and the bursa between it and *ligamentum patellæ* would suffer if the pressure were sufficiently prolonged — but I never met with such a case. In falling with the knee bent the patella reaches the ground first, and receives the force of the impact, which may simply bruise or cut open the bursa; or, if very severe, may "star" the patella itself. The transverse fracture of the bone is produced through the effort of the patient to save himself, by which the great extensor muscles catch the bone across the condyles, and either break it or rupture the ligament; then the upper fragment is drawn up in front of the femur, and a space is left in which the condyles can be felt, as in a patient recently in the wards.

With the knee flexed, the rounded outlines of the condyles can be readily felt resting on the top of the tibia; and a little distance below the outer condyle can be seen the head of the fibula—which bone, let me remind you, does not enter into the formation of the knee-joint. The existence of the semilunar fibro-cartilages between the femur and tibia is hardly appreciable in health; but their existence must not be forgotten, as occasionally, in violent wrenches of the knee, one of them becomes displaced, giving rise to extreme pain and inability to use the joint, which are most satisfactorily treated (as also are dislocations of the patella) by a little of that judicious violence for which "bone-setters" have a reputation.

At the ankle, we see at once the prominences of the two malleoli, between which the astralagus fits closely when the foot is at right angles to the leg, less so when the foot is pointed; so that, in this position, some amount of lateral movement of the foot is possible. The fibula is altogether posterior to the tibia, and its malleolus is longer than the internal. The lower third of the fibula is subcutaneous, and its fracture (Pott's fracture) is

therefore readily recognized. The tendons of the various muscles surround the ankle-joint; but the only one to which I need call your attention is the *tendo Achillis* at the back, in which, when ruptured, the division is readily both felt and seen. When I flex the knee and point the toes, you can see how completely the muscles of the calf are relaxed; and this is an important point in the treatment of a divided tendon, or of a dislocation of the foot, or oblique fracture of the tibia.

The prominences of the foot are chiefly important as guides to the amputations; thus the tuberosity of the scaphoid on the inner side marks the transverse tarsal joint, or site of Chopart's amputation; whilst the base of the first metatarsal on the inner or prominent fifth metatarsal bone on the outer side, marks the position of Hey's amputation. The metatarso-phalangeal joint of the great toe is not unfrequently diseased through gout or the pressure of boots which have developed a bunion; and other toes are not unfrequently deformed from the same cause. The only surgical point with regard to the toes that I need mention is that the base of the first phalanx is more expanded and more deeply placed than young operators are apt to imagine.

I have thus run briefly through the more salient points on the living body, which it is important for you to recognize thoroughly in health, before attempting to treat disease; and, in future lectures, I shall have to direct your attention to matters regarding which the knowledge acquired to-day will be of service in enabling you to recognize deviations from the standard of health.—*British Medical Journal.*

BARBAROUS PUNISHMENT: A SURGEON'S OCCUPATION.

1729, March 29th.—On Wednesday, Thomas Hays, formerly the commander of a merchantman, stood in the pillory at Charing Cross, for the hour of twelve to one, when a surgeon, attended by the prison officers, got upon the pillory, when Mr. Hays sat down in a chair placed for that purpose, and then the surgeon with a dressing knife cut his left ear entirely off, delivered it into his own hands, and then the officer took it from him and betwixt his finger and thumb held it up to the view of the spectators, pursuant to his sentence at the Court of King's Bench, for forging a bond of £560, upon Mr. Edward Longbotham, also formerly the commander of a merchantman. He was a plain elderly man with grey hair, and was not pelted by the populace, which was very numerous. 1728, February 22d.—On Tuesday, came on before the Lord Chief Justice Raymond, at Westminster, the trial of Japhet Crook, *alias* Sir Peter Stranger, upon an indictment for forging two deeds of conveyance to himself, of an estate in Essex belonging to Mr. Joseph Garbutt, and afterwards for mortgaging the estate as his own for £2,500.

After a hearing of about four hours, the jury brought him in guilty of the indictment, which being grounded on a statute of Elizabeth, he is to be put into the pillory, to have both his ears cut off by a surgeon, then his nostrils to be slit, and to suffer perpetual imprisonment.—*British Medical Journal.*

VARIOCELE.

The following simple but admirably effective plan of operating on variocele, devised by Professor Agnew, is published in the copy of the *Philadelphia Medical Times* for June 26, 1875.

The first step is to separate the vas deferens, which feels like a piece of wire, from the other constituents of the cord. Having done this, we push it to the rear, and then put a needle through between it and the veins. We then nick the skin slightly, and enter a second needle, double threaded, carrying it between the veins and the skin. It is then withdrawn. The loop of the thread is then passed under the end of the first needle, while the two free ends are brought down and tied lightly around the other end. We thus have the veins constricted by a loop which can be removed at any time merely by withdrawing the needle. It is usually left in position for about seven days, unless there is much fever with marked constitutional disturbance. Although variocele sometimes returns, it has not been true in my experience that, as Mr. Symes says, it does so in all or nearly all cases. On the contrary, we may usually look forward with considerable confidence to effecting a permanent cure by this method.

CONTRACTION OF THE TRAPEZIUS, SIMULATING DEVIATION OF THE VERTEBRAL COLUMN, TERMINATING IN CURE.

I. C. T. Pravaz (*Centralbl. f. Chirurgie*, from *Gaz. Acbdom*, 1874, No. 30) records the following case:

A young girl of fourteen was affected, after some severe mental disturbance, by a deviation of the spine, the bending of the vertebral column progressing gradually for four months, until scoliosis to a marked degree was attained. The dorsal vertebræ were most severely affected, the convexity above being to the right, with compensating deviation below. The upper and inner angle of the scapula was raised, the lower angle drawn strongly off. The upper part of the right trapezius was hard, and painful to pressure. By faradization of the anterior serratus magnus the scapula could be brought into position again. Galvanization of the trapezius, douches, massage—all were of no avail. Hypodermic injections of a one per cent. solution of atropia to the extent of two to four drops a week were then ordered. No

effect was felt from these until the dose had been increased to six drops, which brought on general toxic symptoms. The spinal deviation began to amend from this time, and eventually the case ended in entire recovery.

Dr. Praviz adds short notes of two similar cases coming under his care, both of which were successfully treated by atropia injections.—*Philadelphia Medical Times.*

EXTERNAL USE OF CARBOLIC ACID IN CERTAIN SKIN DISEASES.

Berndgen (*Allgem. Medicin. Centralzeitung*, No. 20, 1875) uses with good effect in chronic eczema a solution of 5 parts of crystallized carbolic acid in 10 parts of dilated spirit and 120 of water. The solution is applied to the diseased parts every morning by a camel's hair pencil. In cases of shorter duration, he uses a 20 per cent. watery or oily solution as a lotion or embrocation. In acute eczema, carbolic acid is injurious. The solution in water and spirit is very successful in psoriasis. In psoriasis inveterata he uses a solution of 2.5 parts of carbolic acid in 10 each of spirit and distilled water; here, however, the application must be omitted after three or four days, on account of the irritation which it produces. In prurigo, a 5 per cent. solution is recommended.—*British Medical Journal.*

RADICAL TREATMENT OF PROSTATIC HYPERTROPHY.

Professor Heine has cured six cases of prostatic hypertrophy with iodine injections, and now recommends the parenchymatous injection of moderately concentrated solutions of iodide of potassium. He states in *Langenbeck's Archiv.*, quoted in the *New York Medical Journal*, that the operation is not severe, and can be borne by old and weak individuals, because the diminution of the hypertrophied organ takes place without suppuration. When its volume is diminished, the secondary affections of the bladder are also relieved; provided they have not attained a high degree. The operation is performed by placing the patient on his side at the edge of the bed, and introducing the oiled index-finger of the left hand into the rectum to the point where it is intended to make the injection. An exploring trocar is then introduced on the finger, the stylet having been withdrawn into the canula, and the puncture is made. The stylet is then withdrawn from the canula, which is filled with the solution in a syringe. When the canula has been filled, an air-tight syringe is attached to the canula and the injection performed. The median line of the prostate should not be chosen, as a small artery takes its course

in this location. The author's solution is—Iodidi potass., ʒij; tr. iodinii, ℥ij; aq. destil., ℥ij.—*The Clinic.*

THE PROGNOSIS IN SYPHILIS.

Mr. J. Hutchinson gives the following warning, in a lecture in the *Lancet:*

Let me here insist upon the extreme importance to the reputation of the practitioner, of the rule never to give an opinion as to the nature of a chancre until the incubation period is over. Patients will come to you with sores contracted a few days or a week or two before, and will expect you to be able to tell them whether or not they will be likely or not to have syphilis. Now, there is never anything in the conditions which are either present or absent that will justify the most practiced observer in giving any opinion at such a stage. It is very rare indeed that an infecting sore acquires any induration within three weeks of the date of contagion, and more commonly it is a month or five weeks. Until such induration takes place, nobody can tell whether it is coming or not.

Very various indeed are the conditions which may have been present during the preceding period. Your patient may have had a soft sore, which may have been severely inflamed, or even phagedænic; he may have had a bubo, and that bubo may have suppurated; or he may have had no sore at all, and no bubo. Let your rule be, I repeat, to give to your patient no opinion whatever as to his chance of escape until he can assure you that it is one month since his last exposure to risk. It is a matter of constant experience, to be told by patients that the medical man first consulted assured them that the sore was only a soft one, and would not infect; and, under such circumstances, it is always very difficult to restore the patient's confidence in his adviser's knowledge. If the contagion of syphilis were always effected with the same care as to purity of the virus as is exercised in the case of selection of lymph for vaccination, it would not have been necessary to teach this doctrine of caution now. No one thinks of speaking as to the prospect of the success of vaccination during the first few days, nor would he be able to do so even so soon as that were it not that the vaccine vesicle is enabled to develop itself uncomplicated by other morbid processes. It is not so, however, with syphilis, and hence the variety of the results which we witness during the first two or three weeks after contagion. If the virus be introduced in a pure, or almost pure state, then it is probable that in many cases the patient experiences nothing excepting, perhaps for a few days, a little red pimple, which disappears, and leaves him, as he thinks, quite well for another three weeks or a month. At the end of that time the part begins to itch a little, and again becomes red,

and gradually, within a week or so, a well characterized induration is developed. If, however, the contagion have been effected by a mixture of contagious pus and specific virus, then you have a very different course of things. Within the first few days the contaminated part may inflame sharply, and an ulcer may result, which will probably send the patient, in great alarm, to his surgeon. This sore is, of course, soft; it secretes freely, and its secretion may contaminate other parts, and you may have what are termed multiple soft chancres. You may inoculate it, if wished, on the patient's skin, and produce other similar sores, and thus prove that you have to do with a non specific secretion. But all this does not prove that the specific poison is not there, and whatever may be the course of these soft sores, whether easy to heal or obstinate, there remains the risk that specific induration may ultimately be developed.—*Medical and Surgical Reporter.*

MEUSEL ON RESECTION OF THE KNEE AFTER GUN-SHOT WOUND.

In this contribution (*Berliner Klinische Wochenschrift*, No. 20, 1875), Dr Meusel, of Gotha, reports two successful cases of resection of the knee-joint after gun-shot wound. The subject of the first case, treated by Dr. Meusel himself, was a man aged twenty-five years, who had been struck in the region of the left knee-joint by a ball from a revolver, fired at a short distance. The projectile entered about one quarter of an inch below the lower margin of the patella, passed through the ligamentum patella, and then downwards into the upper epiphysis of the tibia. The canal formed in the bone had smooth walls, and at its extremity, near the posterior surface of the tibia, the ball could not be felt with a probe, but was so firmly fixed that it could not be dislodged by bullet-forceps. When the patient was first seen on the day of the accident by Dr. Meusel, the knee was of the normal size, and free from pain. On the supposition that the joint had not been opened, the limb was fixed in a gypsum bandage. On the sixth day the joint commenced to swell, and two days later became much larger, and very painful, the patient at the same time being very feverish. On compressing the upper part of the joint, thin pus could be forced from the external opening. On the ninth day the joint was excised. A transverse incision was made below the patella, and carried through the wound in the skin made by the ball. A portion of the lower end of the femur, four centimètres in thickness, was removed, and a thin section taken from the head of the tibia, exposing the ball, which, together with a small piece of clothing, was extracted by forceps. The patella was left. On examination of the joint during the operation, it was found that the capsule had been wounded by the projectile. The synovial membrane was red, and thickened, and the joint contained purulent fluid.

The tibia had not been splintered. At the eighth week there was firm union between the femur and the tibia, and six months after the operation the patient was discharged as cured, the limb being shorter than its fellow by about five centimètres. The patella remained movable, and could be pulled upwards by the action of the quadriceps extensor muscle.

The second case was one in which Professor Nussbaum performed primary resection of the knee of a young lieutenant, wounded by a Chassepot ball, in the Franco-Prussian war. The ball had passed inwards, near the external condyle, had shattered the lower portion of the patella, and had finally made its exit at the inner surface of the joint. The operation was performed within a few hours after the injury had been received. A transverse incision was made across the front of the joint. The upper half of the patella was left. The patient made a good recovery, the limb being shortened by about six centimètres.—*London Medical Record.*

NOTES ON A CASE OF INSANITY INDIRECTLY CAUSED BY PHIMOSIS.

A. J. K., aged 29, had been formerly a schoolmaster, but now devoted himself exclusively to the study of music, practising on the piano or organ eight hours daily. On inquiry, it was found that he was obliged to give up the school, as he found he could not exercise sufficient authority or control over the boys. There was a slight loss of memory, and he had some difficulty in remembering his age. He stated that the symptoms first noticed were pains in the back, but was unable to say when they commenced. He had lately suffered from a sensation in the occipital region as if the skull were being depressed. He was a seven months' child, and did not walk until he was three years old. When an infant he suffered from constant diarrhœa and prolapsus ani. He was always very excitable, but his excessive mental and bodily weakness prevented his following any regular occupation. He is passionately fond of music, and has overtaxed his strength by his studies. He had for the last six months been under the delusion that certain people had been following him about and making indecent gestures at him. He could not speak of these facts without bursting into tears and becoming hysterical. He believed that these people had done their best to prevent his getting a living. On inquiry, it was found that he was addicted to masturbation. This habit he attributed entirely to a state of irritation and itching which were constantly present in the penis. On examination, it was found that there was a condition of congenital phimosis, the secretion from the glandulæ Tysonii never having been cleared away. The case was treated temporarily with bromide of potassium and aperients, and partial circumcision was recommended. The operation was successfully performed; and, from a letter subsequently received, it appears

that the habit has not been resumed, and that the mental symptoms are decidedly improved.

Cases in which irritation and masturbation have been caused by a condition of congenital phimosis are common enough in surgical and in general practice; but it is not usual in such cases for the habit to proceed so far as to produce distinct mental symptoms. In this case, there was undoubtedly a bad previous history, and predisposition, although no hereditary taint of insanity existed. But the exciting cause of the intellectual disturbance may fairly be attributed to the habit to which the patient was addicted, and this doubtless owed its origin to the condition of congenital phimosis which was found to exist.—*British Medical Journal.*

OBSTETRIC EXCERPTA.

BY JOSEPH HOLT, M.D.

THE MANIPULATION OF ADHERED PLACENTA.

The following directions are given by Dr. J. G. Swayne, in the *British Medical Journal:*

If the cord be tightly encircled by the os uteri, the constriction should be overcome by insinuating the tips of the fingers into the os in a conical form; whilst the right hand all this time is making counter-pressure upon the fundus uteri, so as to steady that organ. Should these precautions be neglected, the connections between the vagina and the uterus may be put very injuriously on the stretch, especially if the circular fibres of the os oppose much resistance to the introduction of the hand. As the tips of the fingers pass through the os, they should be gradually expanded and separated from one another, until, by sheer fatigue, they overcome the contraction of the uterine fibres, so as to allow the passage of the entire hand into the uterus. When this is accomplished, the next step is to pass up the hand sufficiently high to reach the placenta. The distance which it has to pass before this can be felt will depend very much upon the position of the placenta and the degree of contraction of the uterus. If the placenta be attached, as it usually is, to the fundus uteri, or if the uterus be in a flaccid condition, it will be necessary to pass the hand much further than when the placenta is attached lower down, or when the uterus is well contracted. I have sometimes had to pass the hand quite into the epigastric region, in search of a retained placenta. As soon as the placenta is arrived at, the fingers should be spread out, taking care not to entangle them in the membranes, until the circumference of the placenta can be felt. If any portion of the circumference be already detached, the tips of the fingers should be cautiously inserted between this portion and the inner surface of the uterus, and

the placenta gradually peeled off. All this time the right hand, externally applied, steadies the portion of the uterus from which the left hand is detaching the placenta, and enables the accoucheur to estimate the exact thickness of the uterine walls included between the hands, so that he can avoid digging his nails into the substance of the uterus. There is sometimes considerable danger of such an accident when the adhesions are very firm and close. There is also considerable danger of leaving portions of placenta behind; a risk that one can readily comprehend in such cases as those described by Dr. Ramsbotham, who states: "I have opened more than one body where a part was left adherent to the uterus, and where, on making a longitudinal section of the organs, and examining the cut edges, I could not determine the boundary line between the uterus and the placenta, so intimate a union had taken place between them." In all such difficult cases, it will be necessary to sever the adhesion by using the finger nails with a kind of sawing motion from side to side. The tips of the fingers are placed in a line like the edge of a saw, keeping the palm toward the placenta and the knuckles toward the uterus, and the sawing motion is continued very slowly and gradually, until the entire placenta is separated and falls into the hollow of the hand. This proceeding sometimes requires a great deal of patience, and is exceedingly tiring; but the accoucheur should take his time about it, working with both hands, and making his ground sure as he goes on, and not withdrawing his hand with the placenta until he is certain that he has brought away every part of it that can be safely separated. It is very seldom, comparatively, that the adhesions are so firm that this cannot be done. Should this, however be the case, we have a choice of evils: either to run the risk of causing secondary hemorrhage and septicæmia by leaving portions behind, or of causing metritis from injury to the uterus in bringing them away. For my own part, I think that the last of these two is the least dangerous, except in very unusual cases. I have notes of only two instances in which it was necessary to leave any portion of consequence behind. Fortunately, in both, the pieces were expelled on the third day, without having caused any untoward symptoms, although in one the piece expelled was as large as a hen's egg. Of course, in all such instances the dangers of septicæmia should be guarded against, as much as possible, by the frequent use of vaginal injections containing Condy's or other disinfectant fluids.—*Medical and Surgical Reporter.*

CHARCOT ON THE RELIEF OF HYSTERICAL SEIZURES BY COMPRESSION OF THE OVARIES.

According to Charcot, most hysterical seizures are preceded by an aura starting from one or both of the ovaries, and he finds

that pressure on the organ indicated causes immediate arrest of the seizure. He illustrated this action upon a patient in the Salpetriére affected with hystero-epilepsy. The seizure recurred, however, the moment the pressure was taken off. In order to keep up the pressure for a longer time than would be possible with the unaided hands he recommends an apparatus like a tourniquet. The pressure is to be made in the situation and direction requisite in compressing the iliac artery, and, in fact, this vessel will be felt pulsating under the finger.—*The Clinic.*

CHLORAL AS AN ANÆSTHETIC IN NATURAL LABOR.

By Dr. H. Chauppe.

(*Annales de Gynécologie, Mai*, 1875.)

The points considered by the writer are:

1. *Obstetrical anæsthesia* CAN *be produced by chloral;*
2. *It is without danger to mother and child;* and
3. *In what cases, at what period of labor, in what doses, form, and by what channel it ought to be administered.*

I. The writer has collected thirty-seven cases of the use of chloral thus: "In thirty cases anæsthesia was *complete;* in five cases it was *almost* complete; and in two cases it was *not* produced."

"We now believe it to have been fully established, that chloral hydrate, which is capable of producing in the highest degree, cutaneous anæsthesia, can as effectually produce an annihilation of the pains of confinement; that this suppression of pain is not due to the diminution of uterine contractions, either in their intensity or frequency; that the latter (the pains) upon the contrary conserve their power; that they seem for a few moments to be retarded, and that what they lose in frequency they gain in force. This important verification explains why some authors have believed that chloral acts directly upon the uterine fibres as an excitant; it explains why M. Lambert, without enunciating a similar opinion, could terminate his essay by saying, 'that by the use of chloral, labor is not only *not* retarded, but it is often accelerated.'"

II. *Effect on Mother and Child.*

It is well established that chloral does not diminish the contractions nor retard labor. M. Pellissier has always examined with great care the children born of chloralized mothers, and "has never seen the former show in the least degree the effect of the hypnotic and anæsthetic agent. He has never seen the milk of the mother, given to the infant almost immediately after birth, produce the least hypnotic effect." He affirms, after using it many times, that "chloral administered in a prudent manner and in proper doses, is an agent of absolute innocuity."

The author has been impressed with the "rapidity of recovery" of the women, chloralized. He admits that his collection may have been "a happy series" of cases, and this rapidity exceptional, rather than the rule. If it be the latter, he suggests two solutions, inclining to the latter. 1st. It may be owing to the escape of the mother from the great fatigue of labor. 2d. It may be owing "to the destroying or neutralizing of the septic products absorbed by the placental wound." Since chloral solutions are applied to ulcers and wounds, on account of the antiseptic, antiputridic properties of the drug which are now well established, the author suggests that, during the few hours after expulsion of the fœtus, the chloral in the blood acts as a disinfectant. He advances this suggestion "with the most extreme reserve," and promises to make this point a special study.

III. In what cases, when, in what dose, and by what channel ought it to be administered.

"Chloral ought especially to be given in too prolonged confinements and in primiparas, for then the pains have an intensity that will be found only exceptionally in ulterior confinements." "It often occurs that, the pains being very intense, the patients, when they are nervous, are exhausted by their inutile efforts, and that at the moment when they especially need all of their forces for the last expulsive pains, they are fatigued and the womb ceases to contract. In these cases, chloral, which procures repose and rescues the women from exhaustion, would be expressly indicated."

"It will be still more appropriate in nervous women, who toss about and complain beyond measure. If anæsthesia can be induced in such patients, the moment of delivery will be remarkably hastened."

"In hysterical females, who are so often attacked at the moment of parturition, chloral can be used with success."

After pains can be controlled with chloral.

At what time of labor ought chloral to be used? As a general proposition, the author would recommend that it be given "when dilatation is complete, and when the expulsive pains have commenced." * * * "It is only in very rare cases and when the woman suffers much that we would be authorized in giving it during the period of dilatation."

The dose will vary, "according to the moment of giving it, the susceptibility of the patient and the effect desired." The dose varies from 60 to 80 grains, given in 30 or 40 grains at an interval of 30 minutes, or, in 15-grain doses every 15 minutes, till the effect is produced.

When the stomach will not retain it, the rectum should be resorted to. The hypodermic and intravenous uses of chloral the author would not recommend.—*Chicago Medical Journal and Examiner.*

PUERPERAL INFECTION.

In reply to the fourth question in Mr. Spencer Wells' address on puerperal fever, How can its spread be most certainly prevented or checked? and in response to your call for any useful hint on this now prominent subject, I have pleasure in giving the plan which the late Dr. Dawson, Lecturer on Midwifery at Newcastle-on-Tyne, found effectual in preventing a run of puerperal fever cases in his practice, and which has proved entirely satisfactory in my own. In 1863, I called on Mr. Dawson to see a case of puerperal peritonitis My wife was at the time "daily expecting," and I naturally felt peculiarly anxious. On my way home, I told him my position and feelings, and put the question to him, What must I do to prevent more cases from occurring? Dr. Dawson at once asked, if I could use either hand in delivering? Yes. Then, said he, touch this poor woman with one hand only, and reserve the other for future cases; and, lest you should inadvertently neglect the precaution, you might put the mistrusted hand in a sling when called to a case. I warmly thanked the doctor, felt my weight of anxiety removed, nor have I ever had more than isolated cases of puerperal fever since. Before parting, I told Dr. Dawson that I had more than once observed my revered teacher, the late Dr. Patterson of Glasgow, with one arm in a sling, he must have adopted the same method. Undoubtedly, was the reply. Dr. Dawson's mode of preventing the spread of "childbed fever" would also be efficacious in cases of syphilitic infection. Had it been more in vogue, we might never have had to lament that distressing trial of Simpson and Wife vs. Davey. That "puerperal fever" is infectious is quite granted in this district, for I have heard it styled "nail fever." Besides baths, disinfectants, change of clothes, and other preventative means, I would recommend the obstetrician, when first a suspicious case occurs in his practice, to discontinue the use of gloves, to walk in the sunshine, and if he have the opportunity, to do a little flower gardening.—(John Carrick Murray, M.D., Newcastle-on-Tyne, in the *British Medical Journal.*)

ON TEMPERATURE IN PUERPERAL ECLAMPSIA AND THE CLINICAL INDICATIONS IT FURNISHES.

Dr. Bourneville (*Archives de Tocologie*, April, 1875) thus formulates the conclusions at which he has arrived from the careful observation of a number of cases:

"1. In the eclamptic state the temperature rises from the beginning to the end of the attack.

"2. In the intervals of accession the temperature maintains a

high figure, and at the moment of convulsions the mercurial column registers a slight ascension.

"3. Lastly, if the eclamptic state ends in death, the temperature continues to rise, and attains a very high figure; if, on the contrary, the accessions disappear, and the coma diminishes or ceases definitely, the temperature progressively lowers and returns to the normal figure."

Dr. Bourneville remarks also that, in addition to the valuable information afforded by the thermometer in respect of prognosis and treatment, it furnishes valuable diagnostic indications. He states that in *true uræmia*, whether it occur in men or women, whether it be caused by an affection of the kidneys or by obliteration of the ureters, whether it assume the comatose or convulsive form, the temperature is always progressively lowered, sometimes falling very low.

He adds: "From the first we note a LOWERING of the temperature in URÆMIA, and an ELEVATION of the temperature in PUERPERAL ECLAMPSIA. In the course of uræmia the temperature is progressively lowered, whilst in the course of the eclamptic state it rises more and more from the onset of the accessions, and that with great rapidity. These differences are accentuated at the approach, and even at the moment of death; in uræmia the temperature descends very low, even much below the normal figure; in puerperal eclampsia, on the contrary, it attains a very high figure."—*Brit. and For. Med.-Chir. Rev.*, October, 1875.

ON THE CAUSATION OF SO-CALLED CEPHALHEMATOMA.

Dr. Heinrich Fritsch writing on this subject (*Centralbl. f. d. Mediz. Wissensch.*, No. 29, 1875), says that as yet no one has diagnosed before birth the existence of a cephalhematoma. When the advancing head is driven forward by the pains, and closely pressed against the pelvic walls, the elasticity of the bones of the head, and the resistance from the soft parts of the pelvis, cause a recession of the head. The scalp, closely applied to the maternal passage at the greatest periphery or only on one side, is held back, and forms as it were with the soft parts of the mother one mass. Danger may result from this close adhesion in two ways. First, in the farther descent of the head the vaginal walls may be loosened from the underlying tissues, and prolapse and descent of the vagina follow. Secondly, in the recession of the head the scalp may be loosened from the parts beneath. The pericranium is detached from the bones, since here the connection is not elastic as in the upper layers.

Through this breach of continuity a gradual flow of blood takes place; the formation of a tumor is for a time prevented through the close pressure of the head against the maternal parts. But after the birth the blood continues to collect till the

pressure of the blood in the cephalhematoma is greater than that in the bleeding vessels. The greater the extent of the detachment of the pericranium, the greater the cephalhematoma. The tumor never forms in the middle of the vertex, and is seldom met with in the narrow pelvis, because here for many reasons the folds of the scalp more rarely occur.

A cephalhematoma may be produced by the forceps, or in too great rotation.—*Obstetrical Journal.*

CHLORAL IN PUERPERAL CONVULSIONS.

Dr. Portal (in *Bull. Gén. de Thérapeutique*, August 15th, 1875) relates three instances where chloral was successfully employed. Albuminuria was present in each. The first was attacked six hours after labor, the two others during parturition. One was delivered naturally, during the attack, of a still-born child; in the other case forceps were applied, on account of the pains having disappeared when the attack had ceased. The first had had twenty-four attacks, coming on regularly every quarter of an hour; the second eight; and the third seven attacks. Ninety grains of chloral were administered in each case. In the two latter, twenty-five milligrammes of morphia were also injected. All the patients recovered. In six previous cases treated by leeches and inhalation of chloroform, the author "had six deaths to deplore."—*Obstetrical Journal.*

ON THE PREVENTION AND MANAGEMENT OF MISCARRIAGES.

At a late meeting of the British Medical Association, Arthur W. Edis, M.D., of London, made a brief allusion to the mortality occasioned by miscarriages, the life of the fœtus being invariably sacrificed and the mother's life often jeopardized; and not only this, but the fecundity of the female was often destroyed, from the effects of uterine disorder following a miscarriage, to say nothing of the distress and suffering often occasioned. In a series of 2000 cases observed by the author, there were no fewer than 1147 miscarriages compared with 4588 children born at full time. Miscarriages were far too lightly esteemed, both by the public at large as well as by practitioners. Patients with well marked flexion of uterus, constitutional syphilis, chronic metritis, and numberless other affections, were allowed to go on aborting without sufficient pains being taken to prevent a recurrence. The prevention of miscarriages depended entirely upon proper measures being employed to avoid the contingency of a recurrence of the cause or combination of causes that induced the expulsion of the ovum in the first instance. To say that a patient had acquired the "habit of aborting" was merely asserting our

ignorance of the cause, and expressing in other terms the fact that the woman aborted because she aborted. As regards the management of miscarriages, the necessity of a vaginal examination was strongly insisted on. The influence of ergot in the early stage, in arresting threatened miscarriages, was favorably alluded to, and the employment of carbolic acid injections where any portion of the products of conception were retained was urgently recommended. The author concluded by urging a more careful study of the subject; miscarriages being frequently the starting point of a long course of uterine distress—dysmenorrhœa, sterility, etc.—*Medical and Surgical Reporter.*

PROCEEDINGS OF THE OBSTETRICAL SOCIETY OF BOSTON.

The Society met, by invitation of Dr. Cotting, at the rooms of the Boston Society for Medical Improvement, May 8, 1875, at 7½ o'clock p. m.

May 8, 1875.—The president, Dr. Hodgdon, in the chair.

Simulated Pregnancy.—Dr. Cotting reported the case of a patient about thirty years of age, the mother of two children. She called upon him early in the autumn, and said that she expected to be confined about February 1st, as she had had motion from the middle of September. As she was confident of her sensations, Dr. Cotting made no other remark than that he supposed she was competent to judge of such matters. Her size, which had increased, continued to enlarge; and, everything in her estimation proceeding as it should, she made extensive preparations. When the time came she was apparently of the size indicating full term, and she took her nurse into her house and had everything in readiness for the event. Six weeks after the expected time Dr. Cotting was sent for, and, as the patient had not perceived any alteration during these six weeks, she consented to an examination. This demonstrated that the patient had been wholly mistaken as to her condition, for there were no indications of pregnancy (by digital and other examination), except enlarged abdomen and mammæ. The increase of size proved to be due to a development of adipose tissue. On the abdomen this was exterior to the fascia, but greatly resembled pregnancy in form.

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Cases of Simulated Pregnancy.—Dr. Richardson reported a case recently terminated. Some time ago a married woman, aged thirty-nine, was sent to the lying-in hospital for confinement, supposed to be due in two or three days. She had had morning sickness, the abdomen was enlarged, and there was milk in the breasts. She had been unwell every month through the pregnancy, although the show had been very slight. A vaginal examination discovered a uterus of the normal size. Deep pres-

sure over the liver showed it to be much enlarged, nodular, firm. Ascites was present. There had been no jaundice, and thus far no pain. She had had five or six children, and thought she had again had every symptom of pregnancy. Four months later there was an autopsy, revealing disease of the liver.

Dr. Brown said he was called to a patient with the message that she was in labor at full term. He found a young woman, married one year, leaning over a chair, and apparently in a good deal of pain. The catamenia had been unusually scanty for several months previously. The patient had had nausea, and for the past three or four months had felt "motions." The uterus was found to be of the normal size. There was no pregnancy at all.

Dr. Edson mentioned a case similar to that detailed by Dr. Richardson. Two years ago a woman forty-three years old was very positive that she felt motion. She supposed herself to be in the middle of the eighth month at the time she came under Dr. Edson's observation. The menstrual flow was suppressed. The breasts were enlarged, but did not secrete milk. There was extreme jaundice. She died shortly after, but there was no autopsy.

Diagnosis of Pregnancy in its Early Stages.—Dr. Reynolds brought up the subject of the diagnosis of pregnancy, with the question how far an englargement of the uterus would allow a man to say the patient was advanced to certain stage in pregnacy. He remarked that he had asked the question at a former meeting of the Society. One of the younger members said to him after that meeting that he felt that he had acquired the power of recognizing the state. Dr. Reynolds said that he wondered at the distinct impressions averred by some gentlemen, as compared with the extreme indefiniteness in his own case. How many of us, he said, in an examination of a number of patients, half of whom were two months pregnant and half not pregnant, would be able to speak confidently as to the existence of pregnancy, and especially in the case of fat patients, where the difficulty is much increased.—*Boston Medical and Surgical Journal.*

THE FORCEPS APPLICATION.

Editor Medical and Surgical Reporter:—When forceps are properly adjusted to the fœtal head, and locked, *can* they slip? that is *off the head of the fœtus?* We once in a while hear of forceps slipping, but I have always had a doubt whether they have been correctly applied. In the course of a long practice, I have frequently used my forceps, and with the knowledge and experience thus acquired am only sorry I didn't use them more frequently; I might have averted hours of anguish, and quite possibly saved infantile life. But my forceps never "slipped," nor can I quite understand how they could; of course they couldn't slip within

the bony pelvis. I have, on more than one occasion, applied force enough to make them slip, if it were possible for this to happen.

Some years ago I saw a lady, in consultation, who had been in labor for more than forty-eight hours, with an arm extended more than half the time. The doctor, in reporting the case to me, placed his own arm upward, alongside of his head, and remarked, "doctor, it is coming this way." I, however, doubted his illustrated diagnosis, and proceeded to investigate the case, when I found a shoulder presentation. Under the influence of an anæsthetic I turned and delivered by the feet. During the night previous to my seeing the patient, the doctor had made several unsuccessful attempts to use his forceps, but they "slipped" every time. It might be well, too, to have a thought of the injury that might be inflicted on the accouchee by this imperfect application and slipping of forceps.—(L. G. Harley, M.D., in the *Medical and Surgical Reporter.*

ON THE RELATIVE FREQUENCY OF THE DIFFERENT CRANIAL POSITIONS.

By Joseph Griffith Swayne, M.D.

(*Obstetrical Journal of Great Britain and Ireland*, Sept., 1875.)

Dr. Swayne's paper is based on the observation of one thousand cases of cranial presentation. These observations were carefully made with a view of testing the accuracy of certain conclusions advanced in a paper read in 1852, on the "Varieties of Cranial Presentation." The conclusions made in 1852 were drawn from a record of 286 cranial presentations, of which 247 were of the first position, viz., with the occiput towards the left acetabulum; 28 of the second, with the occiput towards the right acetabulum; 3 of the third, with the forehead towards the left acetabulum; and 8 of the fourth, with the forehead towards the right acetabulum. These figures conflicted with the generally accepted views of British accoucheurs that the third was, next to the first, the most common position, and that the second was the most rare. This was the teaching of Naegele. Baudelocque and most French obstetricians held a different view, but Naegele accounted for the discrepancy by supposing that cases which had been put down as of the second position had originally been of the third, but had altered during labor. The statistics of Swayne in 1852, and the researches of West, and Leishman, whose work on the "Mechanism of Parturition" is well known, led to a reconsideration of the teachings of Naegele, and a doubt as to their correctness arose in many minds.

The record of the 1000 cases since observed by Dr. Swayne shows the following proportion:

First position	792
Second "	152
Third "	19
Fourth "	37
Total	1000

This record bears out the deductions made from the previous cases as to the frequency of the different positions.

In reference to the change said to occur from the third to the second position the author says: "In the 19 cases of the third position the presentation remained unaltered in 8. The presentation altered in 5 spontaneously, changing to the second. In the remaining 6 the position was changed by manipulation to the second."

The deductions made from these cases are the same as those arrived at in 1852, viz., "that the second position is next in order of frequency to the first, and that the fourth occurs more often than the third." The author is also of the opinion that in the third and fourth positions the occipito-posterior position is more apt to remain throughout the labor than to change spontaneously.—*Buffalo Medical and Surgical Journal.*

INGERSLEV ON THE COMPARATIVE WEIGHT OF NEW-BORN CHILDREN.

The *Nordiskt Mediciniskt Arkiv*, vol. vii., contains an elaborate paper on the comparative weight of new-born children, by Dr. E Ingerslev, clinical assistant in the Lying-in Institution in Copenhagen.

The author first endeavours, by a comparison of the weights of 3,450 infants born at full term, to establish the relation between the average weight of the child on the one hand, and on the other hand the age and size of the mother, and the number of pregnancies. The average weight of the infants was 3,333 grammes; the average for the males being 110 grammes more than for the females.

A classification of the births according to the ages of the mothers shows that the influence of age on the weight of the child is not so distant as has been asserted by Dr. Matthews Duncan, if the births be arranged according to the pregnancies; but the influence of age becomes evident if the births be arranged in a single table without regard to the pregnancies; and it extends up to the fortieth year. Dr. Ingerslev's observations do not confirm Dr. Duncan's statement, that the maximum weight is found between the twenty-fifth and twenty-ninth years of the mother's age.

The influence of the number of pregnancies on the average

weight of the child, observed particularly by Hecker of Munich, is evident, especially when the pregnancies are classified according to the ages of the mothers. In the tables showing this, the influence of pluriparity comes out more distinctly than that of age. The coincidence of pregnancy with the average of age of child-birth seems specially favorable to the weight of the child; for in the three first pregnancies the average weight of infants born in the mean years of the childbearing period exceeds that of all the children born before and afterwards.

With regard to the weight during the first days of life, the author mentions the researches of Siebold, Haake, Winckle, Gregory, Kezmarsky, Bouchaud, and Ritter, relatively to the loss of weight after birth, and enumerates the different explanations of this phenomena, which have been given. He has examined more than 100 infants, which were weighed immediately after birth, and daily up to the tenth day. Excluding all cases where the children or their mothers were ill, there remained fifty healthy children born at full term. In all these, a diminution of weight was ascertained to take place after birth. In some rare cases, the weight increased or remained stationary on the first day, when the diminution due to the discharge of meconium did not take place, either because the meconium had been evacuated at the time of birth, or because it did not take place before the first weighing, and the infant had in the interval taken the breast; but the increase was transient, and the diminution appeared on the second or third day.

The average decrease was about 222.4 grammes (one-fourteenth or one-fifteenth of the general weight); it was greatest, absolutely and relatively, in first born children. In boys it was greater than in girls; but the loss was compensated sooner in boys. The loss was greatest, and the subsequent increase more tardy, in inverse proportion to the development of the infant.

The increase generally became manifest on the fourth day. On the tenth day, thirty of the children exceeded the original weight; one had exactly reached it; and in nineteen the weight was below that at birth.

No connection can be traced between the detachment of the umbilical cord and the commencement of the increase in weight; the latter generally appears before the fall of the cord. It is necessary to take special notice of the absorbed and eliminated materials, and to compare them. The decrease of weight cannot be explained only by the evacuation of the meconium and urine, this quantity amounting to only half the loss of weight in a given time. The remainder must be eliminated by other ways, It was at first thought that the loss of weight might be explained by insufficiency of food; but from experiments where the infant was regularly fed by a healthy nurse from the time of birth, it appears that the decrease takes place just as in infants suckled by their own mothers.

The loss being relatively greater at the time nearest birth, the

quantity of food should be great in proportion, in order to maintain the weight of the body; but this cannot be from the manner in which milk is secreted and children are fed for the first two or three days after birth; and, since the relations of decrease and the commencement of increase are not changed by the use of sufficient food, it must be concluded that the infant derives no benefit from this, perhaps because the assimilating power of the intestines is not yet sufficient. The consumption of material and the consequent loss of weight are hence an inevitable physiological necessity.—*London Medical Record.*

AN EIGHTEEN POUND BABY.

Eds. Pacific M. and S. Journal:—I send to you, for the purpose of record, the following brief account of a case of labor, which resulted in the birth of a child weighing fully eighteen pounds.

Mrs. G. was taken in labor with her second child at 10 p. m., August 15th, 1875. When I saw her, at three o'clock next morning, her pains were more regular, strong, and quite frequent, the os soft and partially dilated, the head well engaged at the brim, with vertex presenting. An hour later, the os being fully dilated, with little or no advance of the head, I ruptured the membranes in the hope of securing more efficient expulsive pains. I was not disappointed, except in the apparent efficiency of the pains. They became very strong and frequent; yet, after two hours more of patient waiting, but little advance had been made beyond a better moulding of the head. I therefore applied the forceps, and, without much difficulty, brought down and delivered the head in the course of about twenty minutes. The real difficulty of the delivery was now encountered. The broad shoulders of the child were so firmly wedged in the outlet—the anterior (right) shoulder being blocked behind the pubis—that it seemed for a time impossible to move them. With very efficient help from the patient, I finally succeeded in delivering the posterior (left) shoulder, but was still unable to dislodge the right from behind the pubis. After many futile attempts to accomplish this, it occurred to me that if I could rotate the shoulders a half circle; bringing the anterior into the position previously occupied by the posterior, I could then deliver it in the same manner as had the other. The execution of this maneuvre was accomplished without much difficulty, and the delivery completed. The child, a female, was born asphyxiated and still, but soon revived under artificial respiration and a slight blood-letting from the funis. I passed it to the nurse with the remark that it was by far the largest child I had ever seen at birth. At my next visit the father informed me that he had weighed it, and that it weighed over eighteen pounds. Doubting the correctness of this, I carefully weighed and measured it myself, with the following results:

Weight 18 pounds.
Length, crown to heel, 24 inches.

Greatest circumference,		head.....	15½ inches.
"	"	chest.....	18 "
"	"	abdomen.....	18 "
"	"	thigh.....	10½ "
"	"	leg.....	6½ "
Bi-acromial diameter.....			8 "

The mother is tall, well-formed, 27 years old, and weighs 160 pounds.

The only well-authenticated case of a child of so great a weight that I can find, is that reported by Cazeaux—a case of shoulder presentation, delivered with great difficulty by version, the child born dead and weighing eighteen pounds. It was 25½ inches long, with a bi-acromial diameter of 9 inches. The same author refers to one delivered by M. Merriman, weighing fourteen pounds; another by Richard Crofts, of fifteen pounds, and another still-born infant, seen by Dr. J. B. Owens, a surgeon at Haymoor, that weighed seventeen pounds twelve ounces. In Dewees' Baudelocque, the author states that he had seen one new born child of twelve pounds weight, and another of thirteen. Of the latter he says: "Its bulk was so great that I can scarcely believe there ever was any born of twenty-five pounds, or even fifteen, as we hear related by the good women." To this Dr. Dewees replies, in a foot note, that "instances have frequently occurred in this country of children weighing more than fifteen pounds; I have seen, I think, several; two I am certain of, as I carefully weighed them."

Dr. Gooch refers to one that weighed sixteen pounds.—(O. O. Burgess, M.D., in the *Pacific Med. and Surg. Journal.*

EFFECT OF MATERNAL IMPRESSIONS ON THE OFFSPRING.

The writer states that numerous cases of mental abnormality have come under his notice; that they have almost always been attributed by the mothers to mental disturbance during pregnancy; and that the ratio of cases of intellectual abnormality to those of marked malformation are, in his opinion, as nine to one.

Although the fœtus in utero has no direct nerve connections with the mother, experience teaches us that mental impressions, especially those produced by anxiety and fear, have a marked influence upon the uterus and its contents. Many sensitive women have been made to abort by causes of a very trifling nature, producing sudden shock. A patient of the reviewer, in very robust health, aborted from the falling of a caterpillar from a tree upon her bare head; and at another time by being told, in the street, that there were several worms upon her dress. She was conscious of an immediate nerve thrill through her

system, and a determination towards the uterus ending in labor pain. Passion, we know, is capable of rendering the milk of a woman poisonous to her infant, so as to cause convulsion and death; then why may not the blood, from which the fœtus in utero derives its nutrition, be so changed by the shock of fright as to be capable of deranging the cerebral development of the said fœtus, as we know the same impression is capable of doing directly, in a young child? There are points of very mysterious interest connected with the whole subject of intra-uterine developments which can never be solved. It would seem that the mother ought to possess a greater influence over the child developed within her than the father; but unless it be by some nerve shock, the determination of size, form, resemblance, mental vigor, tastes, physical health, etc., appears very nearly equally divided between them. There seems to be a strong connection between likeness and the predisposition to disease, but in some instances the former is just as marked for the sound parent as the latter is for the unhealthy.

Dr. Lee reports four cases of mental deficiency in children born of mothers who had been the subjects of mental disturbance during gestation. One from fright produced by a woman attempting to stab her three months prior to parturition. Another from mental anxiety caused by her husband's illness. A third from fatigue and anxiety in consequence of a sister's insanity. And the fourth from fright produced by seeing one man stab another in a tavern, four months before parturition.

Other cases noticed were attributed to a thunder storm; seeing a child run over; violent hemoptysis in husband; escape from being blown from a railroad bridge, etc. Fright appears by far the most common exciting cause.—*Am. Med. Journal.*

PRACTICAL MEDICINE.

BY S. M. BEMISS, M.D.,

Professor of Theory and Practice of Medicine, and Clinical Medicine, University of Louisiana.

GELSEMINUM SEMPERVIRENS AS A REMEDY FOR COUGH.

By J. Roberts Thompson, M.D., M.R.C.P.,

Physician to the National Sanatorium for Consumption and Diseases of the Chest, Bournemouth.

No symptom in pulmonary complaints more frequently calls for treatment than cough. The skill and the resources of the physician are alike taxed by its persistency or its severity, by

the failure of medicines to relieve, or by the intolerance of remedies by the patient. Any addition to our Materia Medica, therefore, which proves of real therapeutic value in the treatment of this symptom, calls for a patient investigation at our hands. I know that some will say, "Do not direct your attention too much to the treatment of cough in cases of pulmonary disease, and more especially in phthisis. Deal with the conditions which give rise to the cough, and trust, by so doing, to alleviate it." In most cases, however, this symptom is so urgent and so harassing that we must treat it. For this purpose, I believe we have in *gelseminum sempervirens* a very valuable addition to our armamentarium. Of late this drug has received some attention in this country with reference to its action in nervous affections (see *British Medical Journal*, May 2d, 1874, and September 18th, 1875; *Practitioner*, August, 1875), but, so far as I know, little has been said with regard to its use in cough. I have administered it recently to a large number of patients suffering from pulmonary disease, as a cough sedative. The following cases will illustrate the results which have been obtained.

E. N., a young lady, aged 21, had a large vomica at the apex of the left lung. The rest of that lung was dull on percussion. Respiration was bronchial, and there was coarse crepitation both with inspiration and with expiration. The vocal resonance was bronchophonic. The upper lobe of the right lung was also the seat of limited softening. There was much troublesome cough, with copious expectoration. Tincture of gelseminum was administered in five-minim doses; this gave very great relief to the cough, which was most marked towards the evening, the time at which the cough was most troublesome. The patient expressed great faith in the remedy, and preferred it to any other sedatives, of which she had had a great many. No bad effects were observed from its use. There was no nausea or sickness produced, and the appetite was not impaired.

N. T., a married lady, aged 30, had dulness on percussion over the upper half of the left upper lobe. Over the area of dulness there were bronchial breathing, fine crepitation, and bronchophony. She had a very irritable and spasmodic cough. The expectoration was very slight and mucopurulent. Eight-minim doses of tincture of gelseminum produced marked relief of both hacking and spasmodic cough. No unpleasant effect was produced by the remedy.

J. M., an unmarried woman, aged 26, had chronic phthisis in the second stage, over the whole of the left lung and the upper half of the right. She had an extremely irritable cough, especially in the night, which did not yield to any of the usual sedatives. Five-minim doses of tincture of gelseminum gave very great relief, and enabled the patient to get a fair amount of sleep.

J. H., an unmarried man, aged 35, had chronic phthisis in the third stage in the right lung. The deposit was scattered all over

the left lung. His cough was very troublesome. Little relief obtained from the usual remedies. Five-minim doses of tincture of gelseminum proved most useful in checking the cough. No unpleasant effects were noticed.

E. M., a young lady, aged 24, had congestion of the left apex, trachea, and larynx, and an excessively irritable cough, resisting all remedies, general or local. Tincture of gelseminum, in five-minim doses, combined with syrup of codeia, gave great relief.

J. G., an unmarried lady, aged 32, was subject to severe attacks of spasmodic asthma. Her attacks usually yielded best to bromide of potassium with belladonna; to this tincture of gelseminum was added, and the attacks were markedly much milder and of shorter duration. No unpleasant effects were observed.

A. B., a young lady, aged 23, had advanced phthisis. The cough was very troublesome. All the usual sedatives disagreed. Gelseminum gave relief to the cough, but could not be continued because of producing nausea.

These will sufficiently indicate the kind of cases in which I have found gelseminum useful. In some patients, where there existed much bronchial irritation, I have combined it with bromide of ammonium, tincture of squill, and syrup of codeia, and such a combination has often afforded very great relief. In no case, save the one last narrated, have i observed any unpleasant effect. In that, the nausea was only slight, but she was otherwise suffering so much that I did not think it right to persevere.

These results show that gelseminum has a marked power in subduing cough; that it acts probably as a nervous sedative; that it is useful when other sedatives have failed; that it seldom produces any unpleasant general effect; and that the kind of coughs in which it may be administered with advantage is very varied.

I believe further investigation will heighten our estimate of the value of this drug in dealing with so troublesome a symptom in the treatment of pulmonary complaints, and that a more extended acquaintance with its action will enable us to differentiate those forms of cough in which it is likely to be of most service. It is undoubtedly a remedy of no mean efficacy, and will, I feel sure, hold a permanent place in our list of materia medica.—*The British Medical Journal.*

GELSEMINUM.

By John S. Hughson, M.D., Sumpter, S. C.

It has been to me a matter of astonishment that, comparatively, so few physicians have any experience with gelseminum sempervirens.

It is a powerful remedy for good. And when recklessly administered may be, as almost any other important article of the materia medica, the cause of much evil. But it is generally understood that in prescribing, the intelligent physician considers well the indications for treatment, and only administers the remedies called for to meet the same, and remove or counteract the causes of the disease; and thus, using the gelseminum, none need ever fear any unpleasant result from its administration; but, on the contrary, be cheered by the happy effects produced by this old, but to many, practically unknown article During the past five years I have used the gelseminum largely, and as each year passes away, I feel the more how important a place it should hold in the armamentarium medicorum. It is chiefly as a febrifuge that I have employed it. In intermittents frequently alone; in remittent fevers in combination with small quantities of quinine when this is well borne; if not, I depend on the gelseminum. In intermittent fever six to eight drops of the fluid extract four times a day; in remittents five to eight drops every three or four hours during the paroxysm as well as during the remission, increasing or decreasing the dose according to its effects. The pulse is rendered less frequent, the temperature of the body reduced, gastric irritation allayed, diaphoresis produced, the remission occurs earlier than it would otherwise, and a return to health is more rapid. With this treatment I am satisfied that the disease is often brought to a close by entire restoration to health in a much shorter period than by the quinine treatment alone. A mercurial is always prescribed at the commencement of the treatment, if indicated.

In using the gelseminum we must not forget its physiological effects upon the human system, and also the varied susceptibility of the different systems to the action of medicines. My habit is to specially call the attention of the patient or attendant to its peculiar effects upon the eyes; and when dimness of vision, or double-sightedness, is produced, to omit one dose, then to continue as before; if every dose should have this effect, reduce the dose. In infants and young children I give from one-half drop to five drops of the fluid extract, according to the age, and instruct the mother or nurse to watch for the drooping lids, then suspend its use for one or two doses. Should muscular relaxation and great prostration be produced, dilated pupils, with inability to open the eyelids, and a slow, weak pulse, brandy and paregoric could be found appropriate and sufficient, in ordinary cases, to counteract its toxical effect.

Three weeks ago I was requested to see a patient, under the care of a friend of mine, who was suffering from fever that was stoutly resisting mercurials and quinine. I recommended the addition of five drops fluid extract gelseminum every three or four hours, when the fever promptly yielded to the treatment and the patient rapidly recovered. A month ago I was called to a little girl, three years of age, high fever, tongue heavily

coated; gave four grains calomel, at 7 o'clock a. m.; to be followed in six or eight hours, by castor oil. Was summoned at eleven o'clock to see her in convulsions, skin hot and dry, bowels had acted once; warm bath, tincture of valerian, with three drops gelseminum, relieved the nervousness, reduced the pulse and temperature, and with a continuation of the gelseminum every three hours during that day, every four hours the next day, and three times a day for two or three days after, the patient made a complete recovery.

On last Friday night was called to a lady who I found with a very severe chill, entirely insensible (remaining so for thirty-six hours), shivering, jerking, no pulsation in radial arteries, unable to speak; with appropriate remedies to produce reaction, I directed gelseminum every four hours, to begin as soon as the fever should rise. She had a very high fever for sixteen or eighteen hours; a mercurial, quinine twenty grains, with the gelseminum during remission. Sunday morning she was sensible, severe headache, light fever, continued gelseminum every four hours, with a small portion of quinine in the remission. Tuesday morning dismissed the case, convalescent, with directions to continue the gelseminum several days.

Tuesday last, called to a case of intermittent fever, of two days duration; two co. cathartic pills at night, six drops fluid extract gelseminum every four hours; effected a cure. It is useless to occupy space by the further enumeration of cases. To try it judiciously, and effectively, is to be pleased with the result.

Professor Murray, of Baltimore (*Philadelphia Medical and Surgical Reporter*) highly recommends it as a febrifuge, citing cases where he had successfully used it in remittent fevers without the assistance of quinine.

My attention was first called to the febrifuge qualities of the gelseminum by an article from the pen of Dr. E. A. Anderson, of Wilmington, N. C. (*Journal of Materia Medica*, 1870), and, in a private communication on this subject, he says: "I see no reason why it should not be employed as fearlessly as quinine or any other remedial agent." It is recommended by others in a number of diseases, in some of which I have no experience with it.

In Urethro-Cystitis I have used it, five drops fluid extract three or four times a day, with success. In the *Clinic*, Dr. Ferrel, of Illinois, advises its use for the purpose of dilating the os uteri, and, among others, cites one case of endo-metritis, when, in preparing for the application of nit. argenti, "it was thought advisable to employ gelseminum to relieve the excessive nervous irritability which rendered manipulations of the uterus next to impossible. He gave ten drop doses fluid extract, four hours apart, and found the nervous excitability gone, and the os uteri, which before was contracted and rigid, already dilated." In *Journal of Materia Medica*, for March, 1874, I find the following:

"Was recently called to a case for experiment. Patient had endeavored to conceal her pregnancy, and by mismanagement had induced a condition bordering upon puerperal convulsions. Pulse rapid, eyes dilated, clammy perspiration, etc. Having with me no other more suitable medicine than the fluid extract gelseminum, I immediately prescribed that, in ten drop doses, and improvement at once set in; in ten minutes dose repeated; she very soon became quiet, and in one-half hour was safely delivered." Dr. Shamblin, in the *Atlanta Medical and Surgical Journal*, says that he has been very successful with gelseminum in assisting the voiding of small calculi. He employs diluent drinks, with stimulating diuretics, for twelve or fifteen hours, then directs the patient to retain the urine as long as possible, when administering gelseminum in full doses, every two hours, until general relaxation occurs, when the patient is placed in the elbow-knee position, and directed to void his urine forcibly. One case, he states, has by this method voided, in all, *seventeen* stones from his bladder, of varying size.

Dr. Sawyer, of Missouri, in speaking of the treatment of asthma, says: "In a majority of cases gelseminum proved a

"Warrior, though lithe and slight,
Able to win the stubborn fight."

Dr. Williams, of Baltimore (*Baltimore Medical Journal*), believes that it will cure all pure, simple neuralgia of the cerebral system, with promptness and efficiency; will relieve cerebral congestion; control maniacal excitement, and a variety of conditions resulting from derangements of the central nervous system. He recommends it as a prompt and efficient remedy.

Dr. Sawyer, of London (*British Medical Journal*), in referring to an article that appeared some months before, in the *Lancet*, recommending gelseminum in odontalgia, says: "In hospital out-patient practice, we meet with a large number of cases of neuralgic pains in the face and jaws, associated with carious teeth, but unconnected with any evident local inflammatory change. In such cases I have given the tincture of gelseminum in doses of fifteen minims every six hours. Out of twenty cases I do not think the use of the remedy has failed to be followed by decided and lasting relief in more than three or four instances." He further says: "I have seen enough of the employment of gelseminum to feel sure that more extended experience and careful investigation of its action will establish the drug as a valuable addition to our materia medica."

Dr. E. Mackey, of Birmingham, also extols the efficacy of the tincture in odontalgia and facial neuralgia.

Dr. Hurd (*Boston Medical and Surgical Journal*) believes that as a cardiac sedative the gelseminum has not its equal in the whole range of the materia medica. He says "it relieves in a marked manner the shortness of breath and palpitations in all forms of heart disease. He has seen more decided benefit from

its use in chronic valvular disease than from digitalis. He employs the saturated tincture, three drops every two, three, or four hours.

Much more could be said in regard to this valuable medicine which grows in every branch and swamp of our Southern country, and beautifies and fills with its sweet aroma many of our gardens, but time and space will not allow.

Let every one, as opportunity presents, try it for himself, and he cannot fail to be pleased with its effects; and it cannot fail to please his patients that bitter quinine is so largely done away with.—*Charleston Medical Journal and Review.*

NITRITE OF AMYL IN ASTHMA.

By J. J. Leiser, M.D.

The following report of cases may be of interest:

Mrs. G., aged 40, for several months had her sleep interrupted regularly at 4 o'clock, a. m., and was compelled to sit up the remaining part of the night in agonizing efforts at breathing. Large doses of quinine had some influence over the paroxysms, and when fully under its influence she would escape one or more nights. It began finally to lose its influence, and I gave her the amyl. The first use of it seemed to fail, but only because she did not inhale freely enough of it. The second night it was administered until the prominent effects became apparent—fulness and flushing of the face, throbbing sensation of the temples, etc.—when she experienced immediate relief, and returned to sleep at once. After a short use of it her spells left entirely, but I attribute such result to the season.

Mr. M., aged 35, came into my office suffering from a severe attack of asthma. I gave him five drops of nitrite of amyl to inhale, with immediate relief. This patient was afflicted with severe paroxysms of asthma on every occasion of a slight cold, and it now requires that at such times he shall take several inhalations daily and at bedtime, by which he can shield himself effectually from distress. It is the only remedy which, after a search of years, has proven entirely satisfactory. He uses five to ten drops.

Mrs. R., aged 60, simple paroxysmal asthma. She has become accustomed to the use of nitrite of amyl, and inhales it direct from the bottle—enough to cause some of the effects of the remedy, which always disperses the asthma and leaves her comfortable. She considers her bottle of amyl her dearest companion.

I have given the amyl salt in a number of cases, and in only one has it failed: in this I think the patient did not use it effec-

tually, as she was completely prejudiced in favor of an asthma specific, which usually relieved her.—*Medical Times.*

THE DIFFERENT FORMS OF BRIGHT'S DISEASE.

M. Lancereaux has recently expressed his views on this subject in a paper read before the Association Francaise pour l'Avancement des Sciences. He observes that since the period of Bright's researches the use of the microscope in the study of renal pathology has led to the discovery of so many different lesions, each of which find expression in a special group of symptoms, that the name Bright's Disease is no longer a term of precise meaning, as it fails to express any single definite disease as a distinct morbid entity. He therefore proposes the following classification, as more in accordance with the present state of renal pathology:

Varieties of Bright's Disease.		Causes
1. Interstitial nephritis.	Primary....	Gout; lead; congenital contraction of the aorta; arterial lesions.
	Consecutive..	Various obstructions to the emission of the urine without vesical suppuration, cancer of the uterus; fibrous tumor.
2. Epithelial or parenchymatous nephritis.		Damp; cold; scarlatina; eruptive fevers; diphtheria; cholera.
3. Fatty degeneration, renal steatosis.		Alcohol; phosphorous; yellow fever; grave icterus.
4. Amyloid degeneration....		Prolonged suppuration; various cachexiæ.

The interstitial connective tissue, it is observed, has an entirely different origin from that of the epithelial bodies. The latter are derived from the internal layer of the blastodermic membrane, while the former proceeds from its middle layer. These two tissues present a different susceptibility to morbid influences; they are not affected uniformly or simultaneously. Sometimes the disease begins in the connective tissue and sometimes in the epithelial, though after a time there may be a certain mingling of the two processes, so that both tissues will be implicated together. The division into the large white kidney and the small contracted kidney is thought to be insufficient. The interstitial variety is subdivided into primary and consecutive, according to the conditions under which it occurs. In the for-

mer the kidney becomes granular, in the latter it remains smooth.

The lesion in interstitial nephritis is in the intervals between the cortical tubules. Little white spots occur in the centre of points of congestion. Fibrous tissue is developed at these points, causing contraction of the tubules and atrophy of the renal tissue. Certain of the tubules undergo a compensatory hypertrophy. In the epithelial variety, the lesion is originally in the epithelium, the interstitial tissue remaining intact. The epithelium becomes swollen, whitish and granular, and the tubes are obstructed. The arterial system is unaffected, and there is no cardiac hypertrophy.

The symptoms of the two varieties likewise present marked differences. In interstitial nephritis the development is slow and insidious. The urine is slightly increased, of a pale hue, and has a specific gravity of 1005 or 1009. It contains a moderate quantity of albumen, and may be of a faint rose-tint. Headache and insomnia ensue, and finally convulsions and death. The fatal termination may be delayed by the intervention of vomiting or diarrhœa, by means of which portions of the excrementitious matters are eliminated from the blood. The duration may be several years. Occasionally, in the latter stages, dropsy occurs. In the epithelial variety the development is sudden and the evolutions rapid. The urine is diminished in quantity; it is dark-colored; and increased in density. Specific gravity 1020. A marked anasarca develops rapidly.

With regard to the third and fourth forms of nephritis, it is observed merely that the renal steatosis is related to the epithelial nephritis, while the amyloid nephritis bears a similar relation to the interstitial nephritis.—*Le Mouvement Médical*, Sept. 1875.

A CASE OF CONGESTION OF THE LIVER WHERE PUNCTURE WAS RESORTED TO, WITH RELIEF OF THE SYMPTOMS.

A Burmese convict was admitted into hospital on the 19th of June last, with intermittent fever. On the 22d of June, while under the care of Surgeon-Major Blanc, of the Indian Army, he showed symptoms of an affection of the liver, that organ being enlarged and sensitive to pressure, and extending some four inches below the tenth rib. The general symptoms accompanying the affection not moderating, but the swelling increasing, it was resolved in consultation, and relying on the favorable report of Professor Maclean, of Netley, to puncture the liver with the needle of an aspirator. Accordingly, needle No. 2 of Potain's aspirator was introduced into the most preminent part of the swelling, which was three and a half fingers' breadth below the right false ribs, and four fingers' breadth from the median line. About an ounce of black blood was withdrawn, in which were mixed a few pus-corpuscles, as shown by the microscope. The

operation afforded the patient undoubted relief, the respiration falling from 34 to 26, though the pulse and temperature were not specially influenced, the latter rising two degrees on the day following, but falling to its former standard on the second day. The liver, however, commenced contracting, and continued to do so for five or six days. About this time general œdema began to make its appearance in the limbs, and becoming general, the patient gradually failed until death occurred, seventeen days after the operation. The autopsy showed that death was due to anasarca, the result principally of excessive fatty degeneration of the heart, while the liver appeared to have nearly recovered its normal condition; so that though the case terminated fatally, the operation was thought to have been beneficial rather than otherwise, the withdrawal of this small quantity of blood relieving the distended hepatic vessels from over-pressure, and so restoring them in a measure to their normal condition.—*The Lancet*, Sept. 25, 1875.

TYPHOID FEVER—INFECTION FROM DRINKING-WATER.

By Charles W. Brown, M D.

The following is an account of an epidemic which ran through the State Normal school in this place, evidently due to the drinking-water.

In the early part of October, 1874, the first case occurred, in the person of a young man, 19 years of age; one week later the second presented itself. They were characterized by the usual prodromes: lassitude for the first two or three days, impaired appetite, dull pain in the head and back, with vertigo and dizziness? The fever ran the usual course, with a marked rose-rash. Both cases convalesced in the fourth week, and made a rapid recovery.

On November 18th, a large, muscular young man, 21 years of age, fell ill with a general feeling of dull pain in the back; but he did not take to his bed until the 23d, when I first saw him. Then his pain in the head was severe; the tongue was covered with a white creamy coat, and swollen, showing indentations of teeth. The conjunctiva was injected; skin dry. There was muttering delirium, and he continually grasped his head, crying, "It will burst." The pulse was 160, weak and threadlike; temperature 105⅘°; the abdomen tympanitic and tender on pressure.

The following is an extract from my note-book:

24th—8 a. m. Delirium becoming more boisterous; he is getting very troublesome to manage. Pulse 180; temperature 105¼°; respiration 28; countenance cyanotic.

6 p. m. Pulse 170, intermitting; temperature 105½°; profuse

perspiration; rose-colored papular eruption over the whole body; frequent watery evacuations from the bowels, of an ochre color; has vomited large quantities of bile during the day.

25th—8 a. m. Very restless through the night. Pulse 174, intermitting; profuse clammy sweat; hands and feet cold. At ten o'clock he sprang from his bed, seized a chair and struck his attendant on the head, felling him to the floor and inflicting an ugly scalp-wound, he was forced to get into bed by his fellow students, and rapidly sank into a deep comatose state, with heavy stertorous breathing. The eruption became vesicular, and in a few hours pustular. At six o'clock, when he died, it had nearly all disappeared, there being but a few small pustules remaining.

On November 17th, a young man on the same floor as the above case came to the infirmary, as did also his sister from the ladies' building. On the 18th, four young men and two ladies were stricken down; on the 19th another gentleman; the 23d, three ladies; the 24th, two gentlemen, and the 25th, one; 26th, a young man rooming in the ladies' building; 27th, a boy thirteen years old; 28th, Professor A., in gentlemen's building, and one student; 29th, two ladies; 30th, three young men; and December 1st, one lady. The above cases were all under my care in the school buildings. Twenty-five other cases were treated at their homes; they were attacked by the disease before going home or soon after arriving. Of the twenty-eight cases treated in the school, three died—the young man whose case is detailed above, another young man 18 years of age, and a girl of 14. The second young man died December 13th, fourteen days after he took to his bed. This case seemed, up to the last two days, one of the mildest, except that the pulse was frequent—from 110 to 160. There was no pain, and the appetite was good, but there was profuse perspiration from the commencement of the disease. The bowels were regular. Every day he said he felt well and wanted to sit up. On the twelfth night of the disease I was called, and found him suffering with intense pain in the head, face flushed, conjunctiva injected; the whole body covered with an eruption, the same as that of the former fatal case. He went into a state of collapse, and died with symptoms like those of the other young man. In this case there was no diarrhœa, tenderness over the bowels, or tympanitis.

The other fatal case was a girl, rather slender, and of poor health. She had suffered several times from pneumonia. She was taken sick on November 23d, and died December 1st, from double hypostatic pneumonia.

Of those who were treated at their homes, five died; they all terminated some time during the end of the fourth week, and all had hemorrhage from the bowels.

The following are the prominent symptoms in all of my cases

that recovered. The disease commenced in most cases with a general feeling of malaise, weariness, pain in the limbs. The countenance was dull, appetite diminished; the tongue coated and swollen. In some cases there was vertigo with frontal headache; the patients were restless at night; disturbed by dreams. In some cases there was diarrhœa, with pain in the bowels and stomach. In most cases following the above symptoms came a distinct chill, or a sense of chilliness with rigors, followed by a rapid increase of temperature from 103° to 105¾°, with dry skin. Later in the disease the pain in the head increased. In others severe pain in the back occurred at the end of the first week; most of them became delirious. There were great thirst and dryness of tongue and throat; tongue tremulous when protruded. Epistaxis occurred in five cases. Diarrhœa was present in all cases in first week, and was troublesome throughout the disease. All the patients vomited large quantities of bile during the high temperature. In second week the headache disappeared, patients became drowsy, and affirmed that "they felt well."

The fœces and urine were passed involuntarily in all cases. The rose-rash was distinct in all cases in the last of second and through the third week. In two cases there was profuse bloody expectoration, accompanying hypostatic congestion of the posterior lower lobes of the lungs. The fever did not tend to diminish or change into the usual subcontinuous or remittent form by increasing the morning remissions, until in the end of the fourth, and in some cases the fifth week.

In the latter stages the weakness was excessive, the patients lying relaxed in the lowest portion of the bed, in a condition of such profound stupor that they could scarcely be aroused by loud cries, or by pulling, pinching, etc., sufficiently to take their medicine and nourishment.

When the third case was attacked (the first young man who died), the water which he drank was suspected, and the pump-rod immediately withdrawn. As soon as it was evident that we were in the midst of such influences, the school, which consisted of thirty-four males and thirty-five females, was closed; all were compelled to leave the buildings as soon as attendants could be procured to take care of their school-mates; but at this time many who lived long distances from the school began to feel the effects of the disease and were compelled to remain.

The two school-buildings are constructed of brick, and are located on the side of the hill, one hundred and forty feet above the level of the river.

The water-supply for the last ten years has been from an artesian well one hundred and forty feet deep—one hundred feet being through solid rock—the water being pumped by an engine into the buildings. About forty feet back and east of the gentlemen's building was a surface-well twenty feet deep; forty feet

southwest of this was a large privy-vault, which has been used for twelve years; this was emptied by a sewer that discharged a long distance west of the buildings, and was frequently cleansed with water. Another drain extended from near the surface-well to the vault-drain, a few feet below the vault, to carry surface water from around the well. The surface-well was used for all purposes up to the time the artesian well was ready for use, ten years ago. Since that time many of the students preferred the water from the shallow well.

A sample of water from each well was sent to Prof. Latimer, of Rochester University, to be tested. (Meanwhile, all water that was used about the sick and for all purposes was drawn from wells in town.)

The following is given by Prof. Latimer:

"The sample A (from artesian well) contains but a small quantity of mineral matter, chiefly carbonate of lime.

"The sample B (from surface-well) contains little mineral matter, mostly carbonate of lime, but abounds in organic matter; it literally swarms with fungoid organisms, and also contains very many animalculæ, besides much *débris* of both these classes of organisms in various stages of decomposition. Chemical tests show the most positive evidence of sewage contamination in large degree. In short, I have rarely if ever examined a water which, on chemical and microscopical evidence alone, I should consider so dangerous."

The shallow well was abandoned and filled up. The vault was emptied of its contents, and all the adjoining soil, which was saturated, excavated, and the place thoroughly disinfected and filled up with fresh earth. The buildings were thoroughly cleansed and disinfected throughout, and the usual good health of the school has continued since its re-opening, January 6th. There was never a case of typhoid fever in the school since its foundation until the above epidemic. A German who worked around the building during the fall and drank the water from the infected well, but who resided across the river, took the fever about the same time the students came down; the disease resembled those in the school, and ran about the same course. None of the hired help had the fever, except a young man who was in the habit of drinking the infected water; the others all drank water from the deep well.

From the above evidence there is no doubt in my mind that the sewage from the privy-vault, after a number of years, had found its way through the soil, and, by backing up the drain, contaminated the water; and that this was the sole cause of this fearful epidemic.—*Medical Times.*

Mansfield, Tioga Co., Pa., Oct. 9th, 1875.

THE BOSTON SOCIETY FOR MEDICAL OBSERVATION.

Dr. C. P. Putnam spoke of the value of bags of ice applied to the neck in croup and diphtheria. These should be made of thin India-rubber by means of a cement of the same, and provided with stop-cocks to let off the air coming from the interstices of the ice. They should be narrow across the neck in front, and possess ears for the attachment of tapes. Such bags, of various shapes, may be employed also for many other purposes, and may be constructed upon the spot, if necessary. Dr. Putnam had noticed no depressing effects from their use, and for superficial inflammations preferred them to the jacket poultice. In the sore throat of scarlet fever he had found them to cause great relief as to symptoms, though he would not assert any changes in the morbid processes from their use.

October 4th, 1875. *Diphtheria.*—Dr. Whittier read a paper upon diphtheria.

Dr. Knight mentioned some cases under the the charge of Dr. Bowen, of Philadelphia, which recovered after the inhalation of sulphurous acid, while other cases in the same family, not so treated, died.

Dr. Minot said he thought that the topical use of nitrate of silver was at present condemned by many physicians of high standing. For himself, he believed in local applications, but preferred the salts of iron to those of silver He had seen benefit from a dilute solution of muriatic acid applied by means of a swab. Permanganate of potassium also gives little discomfort, relieves fetor, and apparently promotes convalescence. The use of ice-bags is approved by every one.

Dr. Inches said that the records of the temperature should always be carefully kept. He considered them of much value, they often even assisting in the diagnosis. Wet packs he held were of great benefit in the treatment. His favorite topical application was oxalic acid, eight grains to the ounce. He believed tracheotomy at times contra-indicated, and he had seen cases in which the cut surface became an ulcer.

Dr. Whittier repeated that in his opinion tracheotomy was called for whenever asphyxia set in. Life might be saved, and it was our duty to try all measures for that end.

Dr. Webber remarked that the mere relief to the patient, and perhaps even more to the friends around, was sufficient warrant for the operation.

Dr. Chadwick recalled twenty-three cases of tracheotomy performed for croup at the Massachusetts General Hospital. The average age of the case which recovered was five years; of the cases in which the operation failed, two and a half years. He thought that the operation was rarely, if ever, successful with children of two years of age or less.

Dr. Webber alluded to the question of drainage and sewerage as bearing upon diphtheria.

Dr. Stedman had never known tracheotomy to succeed upon a child less than three years of age. He had known of an epidemic of diphtheria in Dorchester in which drainage certainly could have played no part.—*Boston Medical and Surgical Journal.*

SOME REMARKS ON THE CONDITION OF THE CEREBRAL CIRCULATION PRODUCED BY STIMULANTS AND HYPNOTICS.

By Herbert L. Snow, M.D.Lond., Bayswater.

It appears to me that the science of therapeutics is at present much impeded by the want of a rational system of classification; and also by the vagueness of the general terms in ordinary use: that when men speak, for example, of a stimulant or narcotic, their ideas of what constitutes a stimulant or narcotic, of the essential feature in the stimulating or narcotising process, are more or less hazy and empirical. Since Dr. George Johnson's discoveries have directed attention to the contractility of the arterioles, it has become obvious that nearly all our drugs (excluding those prescribed merely for their chemical affinities) produce their effects upon the body—of course, through the agency of the nervous system—by the alterations they induce in the calibre of these vessels. The fact is one which it is especially important to bear in mind, in the case of remedies which affect the functions of the brain or spinal cord; inasmuch as, by empirically administering such potent agents, we are sure occasionally to do harm; and, as it is of the highest importance to form definite ideas of the influences that are brought to bear upon parts of such extremely sensitive and marvellously complex organization, I venture, in the present paper, to offer a few suggestions upon this topic, hoping that, if my views are erroneous, they may be speedily corrected by some one qualified to pronounce upon them authoritatively.

Premising that the arterioles are dilated by the vaso-motor nerves, which belong to the cerebro-spinal system, and contracted by the fibres of Remak (sympathetic), I will first notice the medicines which are commonly called stimulants, and which agree in producing exhilaration of the mind, a genial feeling of warmth throughout the body, and increased force and frequency of the heart's contractions. The primary and essential feature of this process I take to be dilation of the arterioles (*teste* the flushed face), to which the increased energy of the heart is but secondary, following as a necessary sequence.

If the dilatation be slight, the vessels soon return to their normal condition, and the above is all that is necessary to the

action of a pure stimulant. Tea, coffee, and guarana seem to be the purest we have; most of the others, as alcohol and opium, are only purely stimulant in small doses. After a larger dose, that is, after a greater dilatation of the arterioles, a train of other symptoms succeeds; and the former stimulant now becomes either a hypnotic or a narcotic. Either the dilatation gives place to contraction; when the previous excitement is followed by healthy sleep, in which the essential feature is a moderate and sustained contraction of the cerebral arterioles, lessening the supply of blood, and so of oxyyen, to the nerve tissue; or, secondly, if the dilatation be extreme or protracted, a state of abnormal sleep or *coma* supervenes; when, although the vessels are widely dilated, the blood moves sluggishly through them, its ordinary chemical properties being at the same time more or less modified.

To the last, when not fatal, succeeds another stage, indicated by the headache following a debauch. There is now pallor of the countenance; the vessels are slightly contracted, and their muscular walls have lost their tone. A repetition of the stimulant dose speedily relieves the prostration, but may aggravate the headache; this being apparently due to distension of the veins, which, dilated by the previously accelerated blood-current, do not readily recover their former calibre, when the *vis a tergo* is removed, supposing the latter to have been protracted. Alcohol and opium furnish us with the most familiar examples of this train of events.

Respecting the phenomena of sleep, I believe that much uncertainty of thought and of language prevails in medical works—at least, so far as regards artificially induced sleep. It was long since proved that, during healthy slumber, the brain is anæmic; in other words, that the arterioles are contracted. Yet it seems to be generally thought that opium acts as a hypnotic by causing venous congestion. As sleep is dependent upon a diminution in the supply of oxygen to the brain-tissue, it is manifest that the veins cannot have any share, at least primarily, in its causation. The arterioles alone regulate the quantity of oxygenated blood which is supplied to the cerebral or to any other tissue, and are the sole agents to be regarded in examining these phenomena; although it is true that, in the case of a mechanical impediment to the circulation, the veins would exert a retrograde influence upon them. As a general rule, congestion of the cerebral veins would cause headache, but not sleep. Opium, therefore, acts as a hypnotic by contracting the arterioles; and it is worthy of note, that the face is at first pale in cases of poisoning by this drug. As has been already explained, however, after a very large dose, the arterioles may be dilated, with the current greatly slackened, and the blood chemically altered. *Post mortem* venous congestion is not constantly present, and only indicates the prolonged action of a stimulant.

So also in slumber brought on by chloral or by bromide of potassium, the same condition of the arterioles obtains; and these medicines have been found experimentally to contract the vessels in the frog's foot. They differ, however, from opium in the absence of a primary stage of stimulation; and hence their use is less frequently followed by headache. They, besides, do not check secretion, and so do not interfere with the purification of the blood by the excretory organs. In some cases, nevertheless, chloral has a marked stimulant effect. Both these drugs cure ordinary headache by contracting the arterioles, and thus shutting off a portion of the blood-current from the already distended veins, so as to give these last time to empty themselves. In sick headache, when we have violent action of the sympathetic, and when the pain is neuralgic and due to the suddenly increased tension of the arteriolar walls, they usually fail; then guarana, strong tea, or alcohol, which dilate the vessels, prove effectual. Probably nitrite of amyl would afford speedy relief, but I am not aware of its having been tried in megrim.

Of medicines which more especially affect the functions of the spinal cord, belladonna in moderate doses contracts, while strychnia dilates the vessels. In large doses, belladonna also has the latter effect, when flushed face, intoxication, and occasionally trismus, supervene.

A good many experiments have lately been made with numerous remedies, by injecting them subcutaneously, apparently under the impression that the effect would thus be different in some way from the ordinary symptoms which follow their absorption through the alimentary canal. Although, when the drug is not such as to cause any local mischief we administer it by this method with greater precision and celerity, still I would venture to point out that in the case of morphia, which may serve as a type, the effects are identically the same as would follow a dose given by the mouth, excepting only a mitigation of those caused by its actual contact with the alimentary canal. It is obvious, therefore, that with drugs which do not occasion embarrassing gastric or intestinal symptoms, the use of the hypodermic method will rarely be attended by any special advantages.

I trust the day is not very far distant when we may be able to predicate of all the medicines we employ, not only what each is expected to do, but also by what peculiar channel it effects this result. When we have attained absolute certainty upon these points, and when the vast multitude of compounds called into existence by organic chemistry—a field which has already yielded rich results to investigations of comparatively trifling extent—have been pressed into our service, then medicine will take its place among the exact sciences, and the healing powers of its professor will become what is certainly very far from being the case now, a true measure of his scientific knowledge.—*British Medical Journal.*

DISEASES OF WOMEN AND CHILDREN.

BY THOMAS LAYTON, M.D.P.

THE ANALOGY BETWEEN EARLY ABORTION AND DYSMENORRHŒA.

By W. D. Haggard, M.D., Nashville, Tenn.

Read before the Nashville Medical Society, June 3, 1875.

I propose as the basis for the reflections I shall offer on this occasion, the subject of abortions occurring at, or previous to, the 12th week of uterine gestation. In so doing, it will, as I conceive, be necessary to point out the close analogy existing between the symptoms and pathology of early abortions and those of dysmenorrhœa.

Abortions, occurring whenever and under whatever circumstances they may, are untoward events, and constitute an important factor in the history of many of the diseases to which females are liable. Whether we consider an abortion as the result of accident or design, we should ever bear in mind that a human being has been sacrificed—a circumstance of the gravest moment, both in a national and moral point of view, and one that has not always been sufficiently estimated, either by the patient or her medical attendant. In view of the daily increasing crime of producing miscarriages by professional abortionists, especially in the larger cities, and those which come under the observation of the regular practitioner, together with, as I believe, by far the greater number that occur daily, without claiming even a passing notice, either by the patient or her medical attendant, under the guise of dysmenorrhœa, we have, as I verily believe, a more fruitful source of female ailments than any or all other causes combined.

With the etiology, symptoms and treatment of abortion, I take it for granted you are all more or less familiar, especially when occurring during the latter stages of gestation. But, unfortunately, the literature of our profession is replete with facts which show how little we know of *early* abortions, and how liable we are to confound, especially those which occur as early as the 4th or 6th week, with menorrhagia or dysmenorrhœa. To illustrate this point, I beg leave to introduce the following quotation from the work of Professor Hugh L. Hodge, page 465. In treating of the diagnosis of abortions, he says:

"This must necessarily be very uncertain in all cases within the first four months of gestation. This uncertainty arises from the difficulty of determining positively the existence of pregnancy in its early stages. Hence, when pain or bloody discharges occur, it is difficult to determine whether it be menstruation or threatened miscarriage." Again, the same author says:

"It has sometimes occurred that the first symptom which excites suspicion of a miscarriage is the appearance of the embryo—the sac having ruptured without much pain or hemorrhage, and its contents expelled—the patient regarding the attack as one of menstruation, or simple flooding."

Again, we may suppose a miscarriage to take place at a still earlier period of gestation; the medical adviser is summoned on account of pain and hemorrhage, which have occurred month after month until the woman seeks relief; or her physician has probably been summoned on account of a membranous substance found in the uterine discharges, which represent an entire membranous cast of the womb, and the affection is pronounced one of membranous dysmenorrhœa, whereas it was really a case of abortion, and the membranes extruded were the decidua of the embryo. To show the close analogy existing between those membranes, I will be pardoned for introducing the following quotation from the admirable work of Dr. T. Gaillard Thomas, in his article on *Membranous Dysmenorrhœa*, page 587:

"Under the microscope, the cast is found to consist of the lining membrane of the uterus, hypertrophied in all its elements, almost exactly as it is in pregnancy. Indeed, as I shall soon show, the most skilful microscopist cannot distinguish one from the other." On page 589, he says: "By some, the membrane is regarded as due to a deciduous formation excited by conception, which has just been established, or is ovular in its character."

The first of these views is entertained by Hausman, and admitted in some cases by Rokitansky; and the second was advanced by Raciborsky. It will be thus readily perceived that the unsettled state of medical opinion, in regard to both the etiology and pathology of membranes formed within the cavity of the uterine organ justify the statement that the differential diagnosis between early abortions and dysmenorrhœa is exceedingly difficult, and often-times impossible, even under the most favorable circumstances. This we can readily appreciate, when we consider how exceedingly painful the catamenial periods are with some females; while, on the other hand, the ovum is represented as sometimes slipping out, and escaping from the uterus almost imperceptibly. Amid all the difficulties which confront us in making up an opinion on the abstruse questions of the etiology and pathology of the deciduous membrane of pregnancy, and the membranous formations in dysmenorrhœa, and especially when we consider the identity of formation and structure, as revealed by the microscope, we have no alternative left us, in the present state of our knowledge, but to reason by analogy.

In reasoning thus, I beg you to remember the following important facts, all of which are well established and conceded: *First*, the great tendency of abortions to occur about the time that the catamenial period would have recurred had not conception have taken place. *Secondly*, the great tendency to the recurrence in successive pregnancies of abortions at about the

same stage of uterine gestation. *Thirdly*, that a woman, otherwise in good health, may be the subject of painful menstruation, and yet possess aphrodisiac sensibility and erotic desire, which always exists in a more eminent degree just after the cessation of the catamenia than at any other period of her lunar month. *Finally*, that fecundation and conception are more likely to occur just after the cessation of the catamenia than at any other period.

I take it for granted these propositions will all be conceded. If so, then I think, reasoning from analogy, a strong presumptive evidence is afforded, that in married women who are in the enjoyment of good health, with the notable exception of painful menstruation, so called and so treated, they are really oftentimes the subjects of repeated conceptions and abortions without either the patient or her medical adviser suspecting that she has anything but dysmenorrhœa.

Another point on which there seems to be a singular unanimity of opinion, among all the authorities to which I have referred, is, that abortions are more likely to occur, and do occur, more frequently about the third month of utero-gestation than at any other period of pregnancy. But viewing the processes of menstruation, ovulation, fecundation and conception from my standpoint, this must be an error. I hold that if copulation takes place soon after the cessation of the catamenial period, if the flow has been in due amount—no matter whether it be the result of an abortion or the extrusion of a dysmenorrhœal membrane, or of an ordinary menstrual period, whether it be attended with pain or not—if the woman be otherwise in medium health, and be not suckling a child at the time, her organs of generation are in a condition most highly conducive to fecundation and conception. And although fecundation may, and doubtless often does, take place without conception following, I believe, as a rule, that both occur; and that if the process of gestation be not suddenly terminated by abortion or miscarriage, a child will be born as the result of an impregnated ovum, following the act of copulation soon after menstruation. If the embryo should be extruded from the womb at the first recurring menstrual period after conception, as the result of habit, accident or design, I see no reason why, after the lapse of a very few days, the woman is not prepared to go through the same process of copulation, fecundation and conception, to be followed, as before, by an abortion at the next catamenial period.

But perhaps some one is ready to say that so soon as conception takes place, menstruation, as a rule, ceases to recur until the womb has gotten rid of the contained fœtus, and that as a rule, a woman does not again conceive until after the establishment of the menstrual function. Grant it; but please remember that we have high authority for saying that a woman ovulates uninterruptedly *from birth*, until her child-bearing period expires. If this be true, as I believe, a Graafian vesicle, with its

contained ovule, forms, and is cast off by the ovaria every 28 days. If an embryo of four weeks is expelled from the womb, at the end of the first lunar month another ovule is in readiness, and only awaits the life-giving power of the male germ to become impregnated; which must then take its chances to become fixed in the womb in its passage, constituting conception, which, in turn, must take the chances of being extruded at the next returning period; and thus the poor woman passes through life unhappy, disappointed and humiliated, laboring under the stigma of sterility, when, in reality, she has perhaps been the subject of 20 conceptions to 1 of her more fruitful neighbor, who has been the recipient of the goal of woman's ambition, in the bestowal of offspring.

The maternal causes of abortion are frequently dependant upon organic and nervous irritation of the uterus, resulting in the contractile efforts of its muscular fibres, which increase in force and frequency until the ovum is expelled, just as the fœtus is expelled at full term, or as a dysmenorrhœal membrane is forced out of the womb at the menstrual period.

In my humble opinion, organic and nervous irritability are the most important factors in the production of abortions. Next to this, I regard the force of habit as exerting the most powerful influence—as many as 13 successive abortions being mentioned by Dr. Young, of Edinburgh, while Dr. Schultz mentions a case in which 22 successive abortions occurred in the same individual at about the same period of gestation. As much stress as has been laid on this latter cause, I do not believe it has been sufficiently appreciated as an active agent in the production of abortions. If we combine these two efficient agents, as they always are, we have sufficient grounds upon which to base the opinion that just as certainly as effect follows cause, so does abortion follow conception, until the cause (organic or nervous irritability) is removed by proper treatment. We should ever bear in mind that the object and aim of the marriage relation is procreation—the perpetuation of the race; and whenever the parties to a marriage alliance fail in this legitimate and laudable design, chagrin, mortification and discontent are the inevitable consequences. Hence it is due to the medical fraternity to secure offspring to the marriage bed through the agency of skill; and a knowledge of the procreative powers of the individual, whenever it is practicable, becomes imperative. This much is due to those who honor us with their confidence; it is due to our profession, our country, and our God, whose instruments we are, in all that pertains to the amelioration of the deviations from the laws of nature.

All women are not equally liable to abort. Those found in the humbler walks of life, who are addicted to daily labor and hardships, though they are much more exposed to the accidental causes of miscarriage, are yet found to enjoy a much greater immunity than those who live in the cradle of ease, luxury and indolence; for these latter conditions cause a high degree of ner-

vous excitability of the uterine system, which, as soon as the habit of aborting is established, will not, without the aid of therapeutics, tolerate the presence of a fœtus beyond the period at which abortions have occurred on former occasions.

I think the facts and arguments adduced prove most conclusively that abortions, instead of occurring most frequently at the third month of gestation, do, in point of fact, occur more frequently at the close of the first lunar month, or at the approach of the first menstruation after conception—in my opinion, in the proportion of at least three to one; and that the liability to abort diminishes in a direct ratio from the close of the first lunar month after conception, until the expiration of each month during the entire period of gestation.

Whenever a given theory in any department of science is generally received and adopted as correct, however far it may fall short of the truth, it is too apt to pass as an established fact, and thus acts as a barrier to further investigations in that direction. So it has been with regard to the generally received opinion, that abortions occur most frequently at the third month, and statistics are not wanting which *apparently* sustain the opinion. The trouble has been that abortions as early as the 6th week in 99 cases out of 100, have not been recognised as such, owing to the fact that cases occurring at so early a period do not often come under the notice of physicians; while on the other hand, they are generally called in when abortions occur or are threatening at a later stage of gestation. This statement accounts for the reported statistics, which, as I have just said, though true it may be, as to fact, are nevertheless false as to the respective periods at which abortions most frequently occur—the natural results of which false statistics are daily errors in practice. When we couple this with the additional fact, that the profession, as a whole, has adopted this view, strengthened by *usually accepted statistical tables*, until the laity, as well as the profession, have come to regard nothing short of a fœtus so large as to attract the notice of the most casual observer as an abortion—I say it is not strange that anything short of this is generally attributed to an abnormal condition of the catamenia—no matter how much pain or hemorrhage may occur. I venture the assertion that there is scarcely a practitioner of any considerable experience who has not known married women, who have been perfect models in symmetry of form, in grace, beauty, and elegance, whose general appearance was that of health; and who have enjoyed all the blessings and comforts of social and marital relations, with husbands, too, in every respect their equals, and yet whose hopes of offspring have been deferred month after month, and year after year, until the hearts have sunk in deep despair at not having fulfilled the mission of woman on earth. Now who knows but that some of these wives, at least, were in reality in possession of their procreative function, although the fruits of successive conceptions were, by reason of intolerance of the uterus to

the presence of an embryo beyond a given time, regularly cast off, and perished, while yet the couple lived in ignorance of their ability, and in miserable discontent on account of that ignorance? It is my fixed opinion, that just so long as women of this class are treated alone for the various forms of disordered *menstruation*, without regard to the actual pathological changes induced by organic nervous irritability—in many cases caused by repeated abortions—just so long will the profession fail to recognize the therapeutical indications in such cases, and just so long will the efforts of nature fail to fulfil its mission, by sustaining the stream that enters life, to supply the never-failing tide departing.

A number of cases are then presented, from which the following observation is selected as a specimen.

Case I. Mrs. ——, of Gallatin, Tenn., a most charming lady, the wife of a leading merchant of that day, who had been under the treatment of some of the most eminent physicians of that town and vicinity during her married life, embracing a period of some six or seven years, for dysmenorrhœa, as they termed her disease. Although at the time a very young practitioner, the case fell into my hands, with the hope that relief would be obtained from the excessive pain which attended each recurring monthly period, and that her nuptial bed would be blessed with offspring, which she and her husband both very much desired. After instituting the most rigid and searching inquiry into the history and symptoms, I availed myself of the use of the speculum. I was amazed to find that the uterus gave evidence of so little disease; I found no displacements, no ulceration, no induration; the only condition which attracted my attention was the os itself, which had the appearance of slight congestion, with the opening slightly larger than one would expect to find in a woman who had never been pregnant, in which condition the lady declared she had never been to her knowledge. The general appearance of the lady as to health, was perfect; she was full of energy and vivacity; fond of fashionable society and dress; was exceedingly nervous and impressible; her general make-up was such as would impress one with the belief that she could scarcely fail to conceive under favorable circumstances. At the first monthly period after I was consulted, I was summoned in obedience to my request, and found the patient suffering with the most inordinate pain coming on at intervals, simulating very closely expulsive uterine pains. These facts arrested my attention. After giving the case the best thought I was capable of bestowing, I became satisfied that my patient had been the subject of repeated conceptions and abortions, and that the slight congestion I had noticed about the os uteri was the result of organic nervous irritation. As her husband was making preparations for a business trip East, I thought it a most opportune time to secure that perfect state of quiescence of her uterine system, which I deemed important to the success of the treatment

upon which I had determined to place her, which consisted in a cold shower bath every morning, to be followed by thoroughly rubbing the skin with a coarse crash towel, until the skin got into a perfect glow. I ordered perfect rest in the recumbent position, the most perfect quietude of mind and body, with a gentle laxative to keep her bowels soluble, together with nervous sedatives and tonics, with opium enough to keep her slightly under its influence all the time, to allay irritability and excitement. At the approach of her expected monthly period, I ordered an injection of 60 drops of laudanum night and morning, with a perceptible increase of the opiates internally; I also placed upon the inner side of each thigh a small blister to act as a revulsive agent from the womb. In this state of perfect calmness she passed her catamenial period without any return of the abortive symptoms. Under this treatment the case progressed well for the next five months—observing a little more strictness in the employment of the agents about the time of each catamenial period, which would no doubt have been attended by menstrual discharge, had not the woman proved to be pregnant. I watched this case with unusual interest, through her pregnancy, and finally delivered her of a fine, healthy boy, at the proper time, since which she has raised quite a family of children.

I cannot close this paper without touching briefly upon the treatment of abortions as we find them in everyday practice. On being called to a case threatened with abortion, my invariable rule of practice is first to ascertain as nearly as possible the stage of the pregnancy, frequency and the extent of the pains, the amount of hemorrhage, the cause, if known, that has induced the symptoms present—whether they be habitual, or accidental, immediately predisposing or exciting. Having elicited all the information I can from the patient or her friends, I then institute an examination per vaginam. If I find the os uteri dilated and flaccid, with expulsive pain at the menstrual periods, whether attended with hemorrhage or not—if the os be dilated to any considerable size, I regard the case as of doubtful character and make my prognosis accordingly. But if I find the os uteri firm and undilated, even if I find hemorrhage attended with severe pain I regard the case more favorably; and if the other symptoms warrant the belief that the fœtus be living, I make the effort to save the conception. I endeavor to bring my patient as speedily under the influence of opium as possible. Having done this, I endeavor to keep her under the influence of the drug as long as any symptoms remain of pain or hemorrhage—experience having taught me that many cases may be carried to a favorable termination that under a more temporizing treatment would result in miscarriage. I am thoroughly convinced that many cases of abortion are caused by nervous irritability of the uterus, resulting in an intolerance to the presence of the fœtus in the womb; hence nature endeavors to rid the organ of its contents by expulsive efforts. If this irritability be overcome by the free

and full administration of sedatives and narcotics, the pregnancy may oftentimes be saved.

I do not think authorities have laid stress enough on the importance of thorough investigations in such cases as I have spoken of, to enable the practitioner to make a clear diagnosis. Neither do I think they attach sufficient importance to the wonderful powers of opium, administered with the view of procuring its full effect. In my hands, it has seldom disappointed my expectations.

Dr. Tyler Smith contends that the process of ovulation exists during pregnancy, periodically as in the unimpregnated state. (See Dr. Hodge's *System of Obstetrics*, page 117.) Bischoff and Barry agree that the development of the Graafian vesicles and ova continues uninterruptedly from birth to the end of the fruitful period of woman's life. (See Kirke's *Manual of Physiology*, page 490.) Again, on page 492, he says, "from the earliest infancy and through the whole fruitful period of life, there appears to be a constant formation, development and maturation of Graafian vesicles with their contained ova."—*Virginia Medical Monthly.*

THE UNMANAGEABLE VOMITINGS OF PREGNANCY.

The *Journal de Médecine et de Chirurgie* quotes a communication from M. Tarnier respecting a case in which, in a multipara in the third month of pregnancy, serious unmanageable vomitings were arrested by the simple application of plug of wadding to the vagina. He collates with this fact three cases published in the *British Medical Journal*, in which Dr. E. Copeman saw very severe vomitings arrested by the dilatation of the neck of the uterus. In the first case, the digital dilatation of the neck was to have been followed by puncture of the membranes to induce abortion at six months. A fortunate delay demonstrated to Dr. Copeland that dilatation had a great influence on the arrest of the vomitings. Pregnancy went on in due course, and the patient was delivered at the proper time. In a second case, the result was intentionally sought and obtained in the second month of pregnancy. In a third, pregnancy had reached the eighth month. The vomitings were also stopped, and the patient was delivered eighteen days afterwards, when she had already regained some strength. The plug and the dilatation of the neck are two mechanical methods which, in the opinion of the writer who comments on these cases in the *Lyon Medical*, are very rational, undoubtedly acting by a different mechanism.

The plug prevents the shaking about of the womb; the dilatation of the neck detaches the membranes over a certain space, and prevents the twitchings or distension of the internal orifice.—*London Medical Journal*, August 28, 1875.

TREATMENT OF HYSTERIA BY CHLORIDE OF GOLD AND SODIUM.

Dr. Martini, in the *Pabellum Medico*, vaunts the efficacy of this drug in the hysteria symptomatic of functional changes in the uterus and its appendages. He says that it is indicated in congestions and obstructions of the neck or of the body of the uterus, in doses of from one-fifth to nine-tenths of a grain. In five cases of congenital atrophy of the neck of the uterus, causing sterility, the use of chloride of gold and sodium produced excellent effects; the neck of the uterus acquired size as well as consistence; and in three cases the treatment was followed by pregnancy. According to Dr. Martini, chloride of gold and sodium has an elective action on the nutrition of the uterus; and it may be employed with advantage for the prevention of abortion and premature delivery, when these accidents are dependent on weakness alone of the womb. This drug should be given in pills only, on account of its disagreeable flavor. Dr. Martini gives a formula for pills, in which it is associated with the extract of dulcamara, in the proportion of one *gramme* of the extract to one *centigramme* of salt.—*British Medical Journal.*

ENGORGEMENT AND HYPERPLASIA OF THE UTERUS.

At page 347 of the *American Journal of Obstetrics* for August, 1874, there appears a review of a pamphlet by Dr. Ludwig Martini, of Augsburg. This pamphlet, entitled "Engorgement and Hyperplasia of the Uterus are *not* incurable." The review says that: "Thirteen years ago, the author published a number of cases of chronic congestion and hyperplastic enlargement of the uterus of all degrees, and in various parts of the organ, which pathological conditions he claims to have removed completely, and cured entirely and solely, by the administration of the chloride of gold. A number of these patients were thereby also relieved of their protracted sterility." After enumerating a great variety of extraordinary results claimed by Dr. Martini to have been obtained by the use of the chloride of gold and sodium, the reviewer continues: "These results appear, and certainly are, marvellous and almost incredible, when we consider that almost all the most renowned gynecologists utterly deny the possibility of *relieving* the affections which Martini *cured* with the chloride of gold, internal remedies, and even topical applications of any kind. Still they are reported by a scientific educated physician, and as such, deserve at least credence, and call for

investigation and proof." With regard to the "treatment of hysteria by chloride of gold and sodium," the reviewer states in the article from which the foregoing extracts have been taken, that "Niemeyer considered the chloride of gold to be a nervine, an anti-hystericum, and attributed the favorable action of the drug in Martini's cases to this cause, and not to the removal of organic lesions, which existed merely in M.'s imagination."

NOEL GUENEAU DE MUSSY ON WHOOPING-COUGH.

Dr. Noël Gueneau de Mussy (*L'Union Medicale*, July 10) attributes those chronic forms of whooping-cough which persist sometimes for several years, and thus form a remarkable exception to the laws which govern other contagious maladies, to a morbid condition of the bronchial glands. He further considers that in whooping-cough generally the affection of the bronchial glands forms the intermediate link between the congestion of the respiratory mucous membrane which characterizes the catarrhal period, and the irritation of the pneumo-gastric which is the special feature of the spasmodic stage of the disease. In the first stage of whooping-cough the congestion of the mucous membrane is visible in the fauces and throat. The uvula is red and injected, and two bands of rosy red color are seen running along the inner side of the anterior pillars of the fauces, until they unite at the base of the uvula. The isthmus and pharynx are similarly injected, and the glands of the latter are prominent, giving to the mucous membrane a granular aspect.

This congestion of the throat and fauces presents special features of form, seat, development, and course, which not only distinguish it from the laryngopharyngeal congestions of catarrh and influenza, but characterize it as an exanthem of the mucous membrane, analogous to the exanthemata of cutaneous surfaces. M. Gueneau de Mussy believes that he has fully proved the exanthematous character of certain other disorders, such, for example, as hay fever, the gastric and intestinal disturbance which often accompanies urticaria, and probably the pulmonary and gastric symptoms in measles. Whooping-cough would seem to have its special exanthem also, and to be further characterized by a special tendency to congestion of the bronchial glands; this latter condition being the immediate cause of the spasmodic phenomena.

The existence of the enlarged glands may be detected, as M. Gueneau de Mussy has previously shown, by careful comparative percussion along each side of the upper sternum, with the finger laid parallel to the axis of that bone, and similarly along the spinal groove from the seventh cervical to the fourth or fifth dorsal vertebra. This gives a difference in the percussion note,

and in the feeling of elasticity and resistance; while auscultation reveals more feeble but rougher breathing than natural on the side of the affected glands. In well marked cases the respiration may be even of a blowing character. Deficient expansion resulting from the compression of the main bronchus, or one of its chief branches, by the enlarged glands, may be detected by grasping the base of the thorax at each side, while the patient makes a slight effort of coughing.—*London Medical Record.*

PROCEEDINGS OF THE NEW ORLEANS MEDICAL AND SURGICAL ASSOCIATION.

REMARKS OF SAMUEL LOGAN, M.D., RETIRING PRESIDENT.

Gentlemen:—The history of medical associations in New Orleans is peculiar. There is probably no city of equal size in the civilized world in which the profession has experienced so much difficulty, not in organizing, but in keeping up a representative society for any prolonged term of years. Without attempting to explain the possibly exceptional circumstances which may have concurred in bringing about this result, it is sufficient for my present purpose to state the admitted fact that these difficulties have hitherto sufficed to thwart all the efforts which have been made by those physicians who have, at various periods, endeavored to remove this stigma from the profession of New Orleans.

These efforts have been numerous, sincere, earnest, and, on the part of many, persistent—but hitherto in vain. The societies organized at various times have, in a few years, become affected with a marasmus which slowly terminated their existence. Our immediate predecessor started under apparently most favorable auspices. Its roll was large, its rooms elegant, and its members for a time punctual in attendance. Before two years were past it was deeply in debt, and a quorum was only exceptionally procurable by tasking the energies and exhausting the efforts of a few who faithfully persisted in their endeavors to keep it alive. At last, it too, like its predecessors, lingeringly breathed its last. From its birth to its death I was with it, did my best to prolong its existence, and as its last presiding officer, I may be said to have officiated at its obsequies.

In pleasing and hopeful contrast with that reminiscence is my position here to night. Our Association at the end of two years of existence shows no sign of that apathy and inactivity which was the sure precursor of the fatal decline of the last. On the contrary, its membership becomes larger, its spirit more active, and its work more thorough, with each advancing year. Permit me, ere retiring from the position you have assigned me, to

heartily congratulate you on its truly flourishing condition, and at the same time to suggest that on this, the night of our second anniversary, we mutually resolve that we will make this Association a permanent success. I feel an abiding conviction that we shall; for have we not the *young men* of the profession fully enlisted in the cause? It was a happy thought, my confrères, to start this organization as a young men's association, however liberal you have since proven yourselves in opening your portals to those, myself included, who no longer can "lay the flattering unction to their souls" that they may claim that title, which once lost is never to be regained. I candidly believe that this feature in your early organization has had very much to do with the decided and enduring success you have attained. Then let the young men bestir themselves in their naturally warmer sympathy for a good cause, and the older members will feel themselves constrained to work up to the mark also, even if only to avoid being laid on the shelf with the fossils.

But, gentlemen, there is one other peculiarity of this Association from which also your success has resulted, and on which a continuance of that success will, in my opinion, very greatly depend. I allude to the strict enforcement of that article of the constitution which summarily dissolves the membership for non-attendance without sufficient excuse on three consecutive meetings. Let us never relax the execution of this law. It will thrust out all drones from our hive, and have a good effect on all, by impressing the mind of each member with the recollection that we owe the society a positive, definite duty, whose performance must not be omitted without a decidedly unpleasant result, to say the least. Unpleasant result I say, because I take it for granted that every member of this Association possesses that gentlemanly instinct which would make it a matter of painful self-reproach to find himself officially informed that his confrères had decided him to have been recreant to the duty—and we may truthfully add, the courtesy—properly to be expected from him. Let it be ever distinctly understood then, that as a body we will not derogate from our self-respect so far as to tacitly receive the discourtesy of neglect to which this rule is intended to apply, to say nothing of the disregard of the implied duty assumed by each member at his election, to faithfully coöperate with those who have admitted him, with this understanding, into their ranks. Let it be borne in mind that each member of this body owes far more to the Association than the Association owes to him. Under these circumstances it would seem that every manly instinct should forbid any true gentleman from the perpetration of the discourtesy against which the article alluded to is directed.

Again, I may refer to a third feature of our Association upon which its successful continuance has depended. With a wise appreciation of the exigences of the times, you have conducted the organization on a very economical basis. The extravagant

management of the last medical society had a great deal to do with its early decadence. Let us always avoid that danger. Our expenses should be so light as to present the least possible impediment on the one hand to the young man just struggling into a practice, and on the other to those older members of the profession whose income is barely sufficient to meet their perhaps yearly increasing family expenses.

Let us then continue to be guided by these wise and conservative principles, and I feel an abiding confidence that we will prove to be the true "New Orleans Medical and Surgical Association," and not still another of the more or less ephemeral organizations to which I have alluded.

Let us also, my confrères, cultivate that *esprit du corps* which should teach us to forget self for the common good; or, if I may so express it, which teaches that higher and wiser selfishness, if you will, embodied in the perception of the fact that what is best for all is sure, in the end, to be the best for each. Let us learn to know each other better; and as we do so, we will surely find that we will like each other better. Much, very much, of the hard thoughts and the heart burnings, alas, too common, we must admit, among practitioners of medicine, is fomented by outsiders, and would fall to the ground by the dead weight of its own absurdity if we only saw more of each other, and therefore, knew each other better. Our lives keep us more apart than is the case with other classes. Let us, in these halls, come nearer to each other; the rest will naturally follow. We must learn to feel more as confrères, and less as rivals; for, on the whole, I really do believe we are a very "good set of fellows" as the world goes.

But, gentlemen and confréres, I am trespassing too much on your time. The spirit of good-fellowship I have been advocating has a worthy exemplification on this occasion in the person of one upon whose time I have already encroached too largely. Even the distant blue-grass regions of Kentucky are not too far to feel its influence, and one who erstwhile was with us is with us once more. We have grasped his hand in a clasp of brotherly welcome; let us now listen to his voice: I need hardly introduce our corresponding member, Dr. McMurtry.

ANNIVERSARY ADDRESS:

Delivered before the New Orleans Medical and Surgical Association, December 4th, 1875,

BY L. S. McMURTRY, M D, OF DANVILLE, KY.

Mr. President, and Gentlemen of the New Orleans Medical and Surgical Association:

Permit me to congratulate you upon the return of another anniversary of the organization of this Association.

It indeed gives me pleasure, after an absence of almost two years, to see that no chair in this hall has been robbed of its occupant, that the membership has increased, and that this society has become one of the fixed institutions of this great city.

Let me pause for a moment here to thank you for the honor conferred upon me by your invitation to address this learned and cultivated body, and to express my high appreciation of this unexpected privilege.

I will not weary you with an apology for my unfitness for the task, which I very deeply feel, but hasten to the consideration of some topics in our profession and in connection with this Association, as are deemed of interest to us all and pertinent to this occasion.

The wild winds of December are now singing the cantata of the dying year, and standing this evening almost upon the threshold of the new one, this anniversary meeting becomes an occasion suggestive of earnest reflection—turning our minds to the past with its toils and pleasures, and opening before us the future with its hopes and promises. It is withal a good custom to occasionally make a halt in accustomed progress, to glance back over the road we have come, to survey the ground under our feet, and look forward into the unexplored country we are about to enter.

If there is one characteristic of the peculiar age in which we live more marked than another, it is the great activity exhibited in every department of human effort. Science is a great traveler, and the advances in medical and surgical science since the last anniversary of this Association have been so marked and numerous as to deserve our careful consideration. The past year, in fact, has been an eventful one, and I invite your consideration, first, of some matters engaging the attention of the profession at large, and finally, to some features of special interest to this Association.

As new remedies, improved operative procedures, and advanced pathological views, are given the profession from time to time, that enthusiasm begotten by novelty asserts itself, and we hear of a panacea, a never-failing operation, and the complete mastery of diseases which have long baffled medical skill. The history of medical progress, however, teaches that it is not by rapid strides, but by steady onward march, that advancement is made; hence novelties require several years to test their value. In recognition of this fact, the great mass of our profession await the result of rigid and repeated experiment, and innovations gradually settle down to the place in the estimation of medical men to which their merits entitle them. Again, how much is yearly being developed in connection with remedies long in use, and methods and processes familiar to all?

From these facts it is evident that any account of medical and surgical progress during any given time would relate, not only

to discoveries entirely new, but also to the extension of what was previously known and the determination of disputed points.

Since the last anniversary of this Association new remedies have been rigidly tested, operations long established have been modified, the application of instruments extended, and pathological views long accepted as final have been vigorously disputed. These matters are still before the profession, and since every physician and surgeon is in honor bound to avail himself of every means known to medical and surgical science to preserve the lives and health of those confided to his care, they demand our attentive consideration. Besides, it is by the labored observation and recorded experience of such members of the profession as compose this Association that advances are to be checked or encouraged, and difficult and disputed points determined.

Two remedies have received such attention from therapeutists during the past year that a permanent place seems promised them in their armamentarium. *Jaborandi* has been employed for some time in South America (its botanical source being pilocarpus pinnatus), but was first noticed by a physician of Rio Janeiro, in 1865. It has only recently been placed within reach of American physicians, having received attention from the profession of Europe. Of late its properties have been carefully studied by German and French experimenters, and a series of careful observations upon its physiological and therapeutical action has been given the profession by that eminent therapeutist, Dr. Sidney Ringer, of London.

It is a powerful sialagogue and diaphoretic; it increases the nasal and lachrymal secretion, and during its action the pupil is contracted and the vision disturbed. The temperature of the body rises one or two degrees during the sweating stage of its action, and afterward falls as much below the normal point. It is said to antagonize the action of atropia.

Salicylic acid is obtained by treating a solution of phenol in caustic soda with carbonic acid under the influence of moderate heat. The influence of salicylic acid upon fermentation and putrefaction has been shown to be marked and prompt, and as an antiseptic it promises more than any other article of that class. As a surgical dressing, as an application for unhealthy ulcers, as an antiseptic and disinfectant, it is claimed to be superior to carbolic acid without the offensive odor and poisonous properties of the latter.

It is evident that experimentation with these new agents is in its infancy, and it is by the coöperative labors of chemists, therapeutists, and practitioners, that the extent and value of their application to morbid processes is to be determined.

Chloral hydrate has passed safely through the period in which popularity is obtained from novelty, and the past year has witnessed its advance in public confidence, an extension of its application, and its security among the most valuable class of our remedies. Anodyne and hypnotic, without the injurious and

disagreeable effects of opium, anti-spasmodic and refrigerant, and in solution recently shown by Dr. W. W Keen, of Philadelphia, to be a valuable preservative for anatomical and pathological specimens, this valuable article has gained in confidence and popularity in every department of our art. Yet who can doubt that much has yet to be learned in regard to the hydrate of chloral?

The alleviation of human pain and suffering has been one of the chief offices of our profession from the earliest ages, and far down the vista of time we find the disciples of Æsculapius with songs and charms and ceremonies vainly endeavoring to release the victims of disease and injury from the pains that rack the mind and torture the body. The surgeon longed for a period when the scalpel would no longer be regarded as an instrument of torture, when operative procedures would no longer be a race with time, and the obstetrician looked forward to that utopia which it is the privilege of our age in marked degree to enjoy, when a remedy could be found which would suspend sensibility and leave irritability and motion unimpaired.

The discovery of anæsthesia is certainly one of the most remarkable in the history of the civilized world. It will always be a source of pride and gratification to Americans to know that one of the greatest boons ever conferred upon man is a discovery in all time to be accredited to the new world. In October, 1846, *sulphuric ether* was first used in surgical operations, and in November, 1847, *chloroform* was first exhibited for a similar purpose. It is indeed singular, that agents so long sought in vain should have been discovered almost within the same year. The magic of these discoveries filled the world with delight, and a new era was opened in operative surgery.

But a short time elapsed, however, before it was found that anæsthesia by ether and chloroform is not without its dangers, and since that time an agent that is perfectly safe has been a desideratum with the profession. The *bichloride of methyline* is subject to additional objections, and has received a very limited approval.

The question of most vital importance to be determined with reference to anæsthesia at the present time is, which can be regarded the safer agent, *ether or chloroform?*

It seems to us, that in no other instance has national pride influenced medical opinion as in the choice of anæsthetics. Since these properties of ether were discovered in America, we find it in almost exclusive use in the greater portion of our country, and for a similar reason chloroform has enjoyed the preference of our European brethren. In some portions of our country the prejudice against chloroform is so strong, and the popularity of ether so great, that it is asserted that a death from the administration of the former would subject the physician to the accusation of manslaughter, while the latter is claimed to be absolutely safe.

In Great Britain, chloroform has been unrivalled to any marked degree until recently, but now ether is being more generally used in both hospital and private practice, and seems in a fair way to supplant chloroform altogether. In this city chloroform is in very general use, and I do not remember to have heard of any fatal result following its administration.*

The choice of anæsthetics is certainly receiving much attention at the present day, and ether seems to be advancing in popularity everywhere. In fact, unless there occurs a decided change in the views now being so authoritatively promulgated on this subject by leading surgeons and physicians, the profession will be compelled to discard that prompt and valuable agent, chloroform altogether. In support of this statement, I would refer to the repeated assertions of eminent authorities during the past year in regard to the great danger of chloroform and safety of ether; and also I would inquire what would be the nature of the criticism incurred by a physician in any of our eastern cities who should be so unfortunate as to have an accident from chloroform occur in his practice?

As already indicated, the choice of these agents is to be determined by their relative safety. In other respects, as convenience, celerity of action, and freedom from inflammability, chloroform recommends itself decidedly to our favor. Although very emphatically asserted it is by no means a proven fact of science that ether is safer than chloroform, for deaths from the former are recorded. In the investigation of this point the statistical method has been fully employed, but the data are insufficient.

Chloroform has been administered in so infinite a number of times more than ether, that the relative mortality cannot in this manner be determined. The experience of the American civil war, as well as that of the Franco-Prussian war, in which chloroform (often impure) was so universally used with so few reported accidents, is greatly to the credit of that agent. While there is strong reasons for considering ether by far the safer anæsthetic, it is not as yet proved beyond the reach of contradiction to be so, and so valuable an agent as chloroform is known to to be, should not be hastily discarded. It is doubtful if any remedy will ever be discovered which will completely destroy sensibility without endangering life.

Two additions to our surgical armamentarium have been in such general use, and have quietly risen to such high favor, during the past year as to demand our notice here; I refer to the *aspirator* of Dieulafoy and Esmarch's apparatus for *bloodless operations*. As stated by its distinguished inventor, with the aspirator the surgeon enters the various regions of the body with a vacuum in his hand. In evacuating fluid accumulations in the

* On investigating this subject in New Orleans, I learn that seven deaths are reported as occurring from the use of chloroform as an anæsthetic.

sacs and viscera it is of inestimable value, while as an exploring instrument it is superior to any other means within our reach.

The application of the bloodless method of Esmarch has been very greatly extended since its introduction, and though attended with some difficulties, it marks a great advance in surgery. In the resection of joints, in the removal of foreign bodies, and in checking severe hemorrhage, this method finds its happiest application. By diminishing the loss of blood, it renders operations practicable which otherwise could not be attempted, and at the same time permits the surgeon to avail himself of the sense of sight where the touch has heretofore been his only guide.

Aspiration and the bloodless method are indeed prominent features of recent progress in surgery; and it may now be safely claimed that their merits are sufficient to retain for them the high position which they have obtained in the estimation of surgeons.

It is the misfortune of our nomenclature to contain numerous terms which have no bearing upon the morbid processes to which they are applied. Prominent among them is that old Scotch word, *croup*, which has for a long period indicated several distinct diseases. It is customary by qualifying this term to apply it to three separate affections: 1, spasmodic croup (laryngismus stridulus, false croup); 2, catarrhal croup (simple laryngitis, catarrhal laryngitis); 3, membranous croup (membranous laryngitis, diphtheritic laryngitis).

It has always been difficult for medical teachers and authors to clearly define the boundary between this latter form of croup and diphtheria. To our mind the distinction has never been satisfactorily made; and since the distinction between, or identity of, croup and diphtheria has of late elicited warmer discussion than probably any other moot point connected with general pathology, I beg to call your attention very briefly to it at this time.

Are the morbid processes underlying the conditions known as true croup and diphtheria identical? Is the difference simply one of degree and extent of surface invaded? The French school of physicians, headed by the great Trousseau, has, as a rule, maintained the identity of these affections, while in Germany opinion has been more divided. In England and this country, while the subject has not been fully removed from the region of controversy, the opinion that the diseases are distinct has been more popular. Early in the present year, however, the identity of these affections received the sanction of Sir William Jenner and Dr. George Johnson, of London, whose opinions upon this subject must be considered highly authoritative.

The features upon which a distinction between laryngeal croup and laryngeal diphtheria is based refer to the morbid anatomy and clinical history of the affections. One prominent distinctive point claimed, is the relation of the mucous membrane of the larynx to the exudation, it being stated that this relation is more

intimate in diphtheria than in croup, its substance instead of its surface being involved. This difference, however, is only one of degree, and has been found to exist between separate points of the exudation in the same subject. That diphtheria always, when affecting the larynx, extends to the pharynx is claimed as an evidence of distinction, but this simply refers to the extent of surface affected. Chemical and microscopical investigations have failed to find any specific difference in the composition of the membranous exudation.

The clinical characteristics which are said to prove the distinct nature of these affections are the origin of the disease, in one instance by contagion, in the other by exposure to cold and other ordinary irritants, and that diphtheria is accompanied with albuminous urine. But it has been shown that these distinctive symptoms do not hold good, while it has never been explained why a mucous surface, which under the irritation of ordinary agents exudes mucus and pus, should another time, under the influence of similar agents, be the seat of a false membrane.

As this subject is more thoroughly investigated, it seems that none of the symptoms furnish ground for separating the two diseases under consideration. Our limited time and your patience, however, will not permit any further discussion of this important and interesting subject to which we have very hastily alluded. It is to be hoped that the discussion introduced during the past year will elicit facts sufficient for the determination of this matter. Since diphtheria is an infectious disease, dependent upon a specific poison, and of asthenic type, while membranous croup is considered a simple inflammatory affection, in most instances the result of cold, it becomes a matter of vital importance to determine positively their identity or difference, so that treatment may be adapted accordingly.

In this cursory manner, Mr. President, I have endeavored to recall a few of the salient features of medical and surgical progress during the past year. It will be observed that some are still within the domain of controversy and experiment, and before the profession demanding consideration. Neutrality here is impossible and indifference fatal. Principles go before practice, and it is incumbent upon every practitioner to weigh well the evidence and determine the tenets that are to guide his action.

With these imperfect allusions to the progress of medicine and surgery at large, let us now turn to a very brief consideration of the work which has been done by this Association, in which we all have peculiar interest.

Two years have now elapsed since a few active practitioners of this city assembled in the reception rooms of the Touro Infirmary, for the purpose of organizing a medical society. The history of medical organizations in this city offered no encouragement to such an enterprise; and only a few years had elapsed since the old medical association had been dissolved in the midst of strife and bitter feeling. In the meantime the

profession of the city was characterized by lack of coöperation and fellowship. Determined, however, that discouraging precedents and prevailing apathy should no longer deprive earnest workers of the benefits of organization, a few zealous members of the profession brought this society into existence. The aim and purpose of the Association were enunciated as follows in the preamble to the Constitution—"for the mutual improvement, instruction, and interchange of opinions and observations, the discussion of medical subjects, and the cultivation of kindly feeling among the members of the medical profession in New Orleans, the foundation of a medical association is deemed advisable." During the two years which have now elapsed the Association has met regularly despite all hindrances, and the question which now presents itself is, How far have the laudable purposes just mentioned been subserved?

Of the various excellent papers which our Committee on Publication have given the profession through the columns of the *New Orleans Medical and Surgical Journal*, not a few have elicited complimentary notice in the current medical literature of the day. The admirable series of observations on *Cephalic Version* read by an accomplished member before this Association, is a valuable acquisition to the literature of that subject, and the clinical reports on distal compression for sub-clavian aneurism, by another, has added much to the value of that method. An essay, with reported cases, on the use of *Villatte's Mixture*, and another on *Divulsion in Stricture of the Urethra*, have brought these subjects vividly to the attention of surgeons, and elicited criticism highly complimentary to this Association and their authors. If time permitted, we might mention numerous other instances to show that the work of this Association is proving of value to the profession.

As evidence of the immense benefit of association and coöperation on the part of medical men in this city, I would refer to the total destruction of that great imposition, the system of society practice. I doubt not that the effort which so thoroughly relieved the profession of this city of that incubus originated in this Association. Although much has been done in these two years, much remains to deserve energetic and labored attention. The dangers to every medical organization are numerous. I beg to call attention to two which should be strenuously avoided, viz., the use of a medical society for the advancement of the interests of individuals and cliques, and failure of attendance and discharge of duty on the part of members as individuals. If the welfare of this Association is a matter of solicitude to each member present, these dangers will be avoided as the ancient mariners endeavored to sail clear of Scylla and Charybdis.

Encouraged by these reflections, Mr. President and gentlemen, and realizing the extent of the labor and the demand for energetic action which the coming year will bring, let us kneel around the altar of science this evening with renewed devotion, and

determine to beautify and keep clean that little space in the great Temple of Medicine which has been allotted "The New Orleans Medical and Surgical Association."

REMARKS OF THE PRESIDENT ELECT, DR. D. C. HOLLIDAY,

To the Members of the New Orleans Medical and Surgical Association.

Gentlemen:—In taking my seat to-night, as presiding officer of this Association, permit me to tender you my sincere thanks for the distinction conferred upon me—a distinction as entirely unexpected as unmerited on my part, having so recently been enrolled among your members.

These considerations, however, render the honor conferred the the more flattering on your part. Many among you know that my sympathies and best wishes have always been with you, even from the inception of this effort to the present time. I know that your endeavor to establish a "Medical *Association*" in *New Orleans* was undertaken not without many misgivings as to ultimate success, having the repeated trials in a similar direction, and in such signal failures matters of historical significance, fresh in your memories. But, gentlemen, here we are; your Association has stood the test of *two* years, and is now stronger, more vigorous, more numerous, and I may, without fear of contradiction, add, more *useful* than ever. Why should it not prosper, grow, become daily more and more useful and beneficial, to the entire profession, until it takes a stands among its more favored peers in other parts of our Union., and its influence, wielded by discretion, courage, and judgment, be felt everywhere amongst the votaries of medical science, and where medical literature forms a band of union and fellowship among its followers?

The answer to these queries can only be in the affirmative, if we but prove true to ourselves and true to those rules of conduct and guidance, which you were judicious enough to adopt in originally drafting your Constitution and By-Laws. You as well as myself, were fortunate enough to hear the eloquent valedictory of my predecessor in this chair; let us unanimously determine to adopt those views, act upon his valuable suggestions, and follow his wholesome advice. This done "*con amore*," and we may smile at the croakings of *many*, who, prompted only by feelings of jealousy and senseless rivalry, invariably predict failure where *their* immaculate conceptions of right and wrong have not been consulted, and the wisdom of their own selfish counsels not been adopted as the rules of action, and the certain road to professional distinction and success.

Let numbers not be our ambition, but *workers*—those who are *susceptible* of improvement, willing to receive and impart instruction, and who are at all times ready to *courteously* participate in

a free and candid interchange of opinions and observations; these are the plastic materials necessary to form a useful, smoothly-working, and harmonious medical organization.

Permit a little advice to our committees, to the "Publishing Committee:" the most careful scrutiny and impartial review of all papers presented to them, and only allow *intrinsic worth*, *originality*, and real merit, to be the grounds for recommending publication; for on *their* important discrimination depends the standing this Association shall have abroad for learning, usefulness, and progressive advancement.

To the Committee on Subjects for Discussion, let them aim at practical importance, general usefulness, and undoubted interest. And to ourselves, let us always aim at brevity, conciseness and originality, as far as practicable in all our papers.

In conclusion, let me unconditionally promise to-night to further by every means I am capable of, the objects and purposes of this Association, until its success in *all* respects—already foreshadowed—shall be acknowledged throughout the length and breadth of our land.

NOTICES OF NEW BOOKS.

Lectures on Syphilis, and on some forms of Local Disease, affecting principally the Organs of Generation. By Henry Lee, Professor of Surgery, Royal College of Surgeons, England, Surgeon to St. George's Hospital, etc. 8vo., pp. 246. Philadelphia: Henry C. Lea; 1875.

Mr. Lee has been a frequent contributor to the British Medical journals on subjects connected with venereal diseases, and some of these lectures have already appeared in those periodicals. The following, from the preface, illustrates some of the peculiarities of the work:

"The chief subjects treated of the following Lectures, which are not dwelt upon in the systematic works of other English authors of the present day, are, the inoculability of syphilitic blood in its various forms; the conditions under which the secretions of primary and secondary syphilitic manifestations may be inoculated naturally or artificially; the morbid processes produced by such inoculations; the modifications of those processes in patients previously syphilitic; primary and secondary syphilitic diseases of the mucous membranes, and their liability to communicate constitutional syphilis; the essential difference of the morbid processes in which the constitutional and local forms of syphilis respectively have their origin; and the pathology and

treatment of discharges from the prostate gland, Cowper's glands, and the vesiculæ seminales."

The volume consists of ten lectures, of which the first treats chiefly of blood-inoculation. This subject, as well as many others, is illustrated by actual cases. Two instances are related of the communication of syphilis by the transplantation of a tooth from a syphilitic to a non-syphilitic individual. These were probably accidental infections, but others are described, by the inoculation of blood, which seem to have been the result of deliberate experiment. The cases are related without explanation or qualification, and some of the experiments detailed by the author evidently were in private practice. It is to be observed that most of them were in the hands of German practitioners, and this would indicate that the pursuit of knowledge is under fewer restrictions in Germany than elsewhere. In some portions of the English-speaking world suits for malpractice might operate to discourage this kind of study; in others, the familiar pistol might afford a sequel to the tale. Instances are also given of submission to such experiments by practitioners and students of medicine in Italy. Such zeal for knowledge is more commendable in a moral point of view, than that of resorting to deception for procuring subjects for experimentation.

With regard to success of the trial, the results were not uniform. As in case of other poisons, susceptibility is quite variable in different individuals, and probably would be in the same individual at different times.

It appears, from evidence collected by the author, that the blood of a syphilitic person adds marked virulence to infected secretions. This position is evidenced by the extreme severity of symptoms where the blood of a menstruous or parturient woman has formed the medium of infection.

In the same connection the subject of vaccino-syphilis is introduced, illustrated with the interesting series of cases which occurred in the practice of Dr. Marone. In these cases the lymph was observed to be tinged with blood, before it was removed from the capillary tubes. While evidence is satisfactory that the blood of a syphilitic vaccinifer poisons the lymph, proof is wanting that the unmixed lymph from such a source conveys anything but simple vaccinia.

It is the commonly received opinion among those who observe a distinction between syphilis and non-infecting venereal sores,

that the ulcers of the former are never multiple, and that an individual is only once in his life liable to an indurated sore followed by constitutional symptoms. Cases are related by the author, which show that this doctrine must receive certain qualifications. For instance, an individual inoculated himself with the secretion of a chancre before it had become indurated, and the result was the production of another indurated chancre. Again, a gentleman was so thoroughly treated for syphilis, that no symptoms of it were observed for 17 years, when he again exposed himself, and again contracted the disease, which ran a specific course through its several stages. Similar cases have been elsewhere published by the same author, and those familiar with the subject know that liability is sometimes regained. Indeed, it is no more strange that one should manifest a returning susceptibility to syphilis than to yellow fever or small-pox.

In Lecture III still more extraordinary results are related, from the inoculation of individuals already syphilitic, in one case with pus non-specific, in another case with secretions from secondary syphilitic products. Characteristic primary and secondary symptoms followed these experiments, showing a susceptibility not exhausted by a recent attack.

In the same lecture cases are detailed, which show that urethral and vaginal discharges of syphilitic individuals are capable of infecting other persons. Very remarkable is the following case, related on page 73.

"Case XLIV.—Gr. C., five or six days after connection, had urethral discharge, and was admitted as suffering under 'gonorrhœa' by another medical officer. After the use of nitrate of silver injections and salines, as abortive treatment, he rapidly improved, but a slight gleet remained, for which the penis was blistered. This urethral discharge afterwards augmented in amount, and became most copious and purulent, and symptoms of cystitis set in. After having been in hospital eight weeks, he came under Dr. Marston's care. Upon the dorsum of the penis were two large, oval, indolent, indurated, raised lumps. They resembled chancres. The glands of both inguinal regions were passively enlarged. In answer to questions, and without any suggestion whatever as to their nature, he said, 'One has existed forty-five and the other about forty-six days, as near as I can tell. They gradually became and remained as you now see them; and they came, I think, from the discharge getting in contact with two sore places from which the skin had been removed after blistering.' In seventeen days both healed under the influence of mercury. A papular syphilide afterwards appeared upon the

trunk. By a later report it appeared that this man had again passed under treatment for marked anæmia, and ecthymatous sores upon the extremities."

The explanation probably is, that this man had contracted gonorrhœa from a woman affected with constitutional syphilis, from which his own gonorrhœal discharge acquired the syphilitic taint. This, inoculated on himself, produced the characteristic effects of syphilitic inoculation. It is elsewhere observed in this work, that primary syphilitic sores, characterized by induration, are not found on mucous surfaces, unless they are much exposed to the air, and this may account for the non-appearance of syphilitic symptoms at an earlier date.

Other instances are told, in which secondary symptoms followed attacks of gonorrhœa, without any known primary sores, and the inference is, that syphilis was communicated by a gonorrhœal discharge from the individual affected with constitutional syphilis. The following quotation confirms the view already stated, and accounts for the opinion of Hunter, that the poison of syphilis is identical with that of gonorrhœa—a doctrine long since abandoned.

"Mr. Pearson's opinion with reference to communicability of urethral discharge may not be uninteresting. He says: 'We have seen so many cases of gonorrhœa communicating syphilis, as to leave very little doubt in our mind of this being the case. We have seen several instances of venereal symptoms following gonorrhœa, and where persons having gonorrhœa have communicated venereal symptoms.' That the infection in these cases did not depend upon a chancre within the urethra, I think is shown by the extreme rarity with which such chancres exist; and with regard to the infecting form of chancre, I should say it is almost if not entirely unknown. Hunter opened the urethra in many cases where he supposed persons were suffering from a discharge connected with syphilis, but never found any ulceration"

On the subject of treatment he shows, by way of introduction:

"The morbid changes observed in constitutional syphilis have been divided into primary, secondary, and tertiary. In uncomplicated forms of the disease, as we have seen, there is no great difference in the kind of action between the primary and secondary symptoms, and the classification of secondary and tertiary syphilis is by no means an easy task. Some have regarded affections of the skin and mucous membranes as secondary, while diseases of internal parts, including the bones, they look upon as tertiary. The secondary symptoms have been supposed to require mercurial treatment; while for the so-called tertiary

symptoms iodine, sarsaparilla, and tonics generally have been recommended. Practically, such distinctions are, in my opinion, of little value, and often lead medical men to treat the name which they may happen to apply in a particular case rather than the disease itself." * * * * * *

"At whatever period of the disease we find the existence of the specific adhesive form of action, whether developing itself as primary manifestation in the shape of an indurated sore, or as an affection of the inguinal glands, or in the form of papular, tubercular, or scaly eruptions on the body, mercury is, in my opinion, sure, if properly administered, to be beneficial.

"When the disease, whether primary, secondary, or tertiary, has a tendency to produce suppuration in the affected parts, mercury should be administered with great caution."

These remarks we regard as very judicious. And, aside from the difficulty of accurately defining the stage of the disease, it is often found that the periosteal affections have commenced before the cutaneous eruptions have ceased. Hence it is advantageous to administer mercurials at the same time with the iodide of potassium.

The method of using mercury preferred by Mr. Lee is that called by him the "calomel bath." It is no longer a novelty, but the author's description is worth a place.

"The plan which I have usually adopted then is as follows: A lamp, in which the methylated spirits of wine is burned, is put into a case, made principally of wire gauze, on the principle of the Davy safety-lamp. The top of the case is fitted with a central, movable, small circular plate, surrounded by a trough; which should contain one ounce of water only. The water should be boiling when first put in, or should be allowed to remain over the lighted lamp until it begins to boil. Thirty grains of resublimed calomel are then spread out on the central small circular plate. This should be quite dry. The patient then sits, without his clothes, on a small stool or chair, and the lamp is placed between his legs. A cloak made of moleskin or some thick material is then made to cover the whole apparatus, and is tied round the patient's neck. It is important that the cloak should go quite down to the ground all the way round. As the water boils a certain quantity of steam is inclosed within the cloak; and, a little later, the vapor of the calomel as it rises passes through the steam and becomes mixed with it. The water first disappears, and the calomel is sublimed in from ten to fifteen minutes. The patient then gets into bed with the cloak on, so as to make it his night-dress. In this way the calomel is necessarily kept on the surface of the skin. The cloak used is furnished with a cane hoop, so as to be kept away from the skin during the action of the bath, and this hoop may be removed as soon as the bath is over, and replaced again before the bath is used the next night.

The cloak has a slit in front, which the patient is generally directed to open for about an inch, so as to allow some of the vapor to escape. This rises in front of his mouth and nose, and he is directed to inhale it for a minute, at the expiration of each five during the continuance of the bath, so as to breathe the vapor for about three minutes altogether. The patient during this time keeps his head up, so that the moistened calomel vapor passes for about six inches through the common air before it is inhaled. This inhalation is not always necessary, but it furnishes a means of regulating with the greatest nicety the action of the mercury, as indicated by its effects on the gums. I have never found mercury administered in this way produce salivation where patients had not also taken it in some other form. The action is upon the surface of the body, and the internal parts are comparatively unaffected. No diarrhœa is produced except from some accidental cause. The stomach and intestines are not irritated, and are free for the use of food or medicine. The perspiration produced amounts only to a slight moisture on the skin, and when this is the case, the patient very rarely experiences any debilitating effects from the continued use of the bath. During this treatment I generally recommend patients to abstain from taking vegetable acids; and for this purpose, as a rule, they are told not to eat raw vegetables or raw fruits, such as salads, cucumbers, celery, apples, pears, and oranges. As the object is to have the calomel in contact with the skin, the patient washes only as much as may be necessary."

As an offset to the advantages mentioned by the author, we must note the trouble of his plan, for he recommends the bath to be given every night for three months.

Mr. Lee has had some observation of the plan of treatment called *syphilization*, and his opinion is unfavorable. The following is his reasoning on the subject, and it appears sound:

"If, then, neither the suppurating venereal sore nor the primary nor the secondary syphilitic affections can be artificially inoculated, so as to produce any constitutional effect, it is scarcely reasonable to suppose that any constitutional disease can be cured by either of these means. By a counter-irritation the disease may perhaps be prevented from attacking internal parts, or the repeated syphilitic irritation upon the skin may tend to wear the disease out, but the mode of treatment can have no specific effect upon a patient's constitution."

Allusion has already been made to recovered susceptibility to syphilitic infection. The author's mode of determining this is interesting. It is indicated by the condition of the inguinal glands. As long as the enlargement exists, the subject is liable to relapse of the original affection, but not to a repetition; while the subsidence of the swelling shows that he is so thoroughly

cured that he will not relapse, but may contract the disease *de novo.*

Other points of interest are taken up in succeding lectures, but this notice has already been prolonged perhaps unduly. The whole group of venereal diseases is one of exceeding importance, on account of their great prevalence, and deserves the careful study of all practitioners. Mr. Lee has for years occupied a position of authority in this department of medicine, and it is enough to say of the present volume, that it is worthy of his reputation.

S. S. H.

Vision: its Optical Defects, and the Adaptation of Spectacles. By C. S. Fenner, M.D. 8vo., pp. 299. Philadelphia: Lindsay & Blakiston; 1875.

The work is divided into three parts, of which the first treats of Physical Optics, or the Nature and Properties of Light. Part II treats of Physiological Optics, Visual Sensations and Visual Perceptions; and Part III of Errors of Refraction and Defects of Accommodation, Hypermetropia, Myopia, and Stigmatism and Difference in Refraction of the two Eyes. Not intended for the instruction of the ophthalmologist, or even the general practitioner, it is serviceable to the optician and any individual seeking to remedy defects of sight by glasses, and will prove interesting to the general reader, as the style is sufficiently popular for ready comprehension. Seventy-four wood-cuts, and some selections from the test-types of Jaeger and Snellen, serve to illustrate the text, and to aid in applying the rules for the determination of one's visual powers. S. S. H.

State Medicine in its Relations to Insanity and Public Charity. By Nathan Allen, M.D., of Lowell Mass. Pp. 31.

This paper was read at the meeting of the American Social Science Association, at Detroit, May 13th, 1875, and was afterwards published in the English *Journal of Psychological Medicine and Mental Pathology*, conducted by Dr. Forbes Winslow. If anything were needed beyond the high reputation of Dr. Allen to give it an attentive hearing, the above statement would command it.

He first gives a brief notice of the legislation enacted, and the existing condition of the systems of treating the insane, in the New England States. Remarks follow on improved methods of treating this unfortunate class, and on measures of prevention. Quotations are adduced from other writers, describing the system practiced in the best asylums of Great Britain and Ireland.

The humanizing tendencies of our age and the advance of medicine are nowhere better exemplified than by contrast of the former plan of treating the insane with the present. It is probably due to these advances, rather than to actually increasing insanity in the civilized world, that a vast increase of lunatic patients is observed in both public and private asylums for their treatment. Many cases are now recognized and treated, which formerly were neglected and unknown. Besides, more humane and skilful treatment has operated to prolong greatly their lives, so that there would be an absolute without a relative increase of lunacy in the population. This view gives a more cheerful prospect of our civilization than that afforded by most writers on the subject. S. S. H.

Scarlatina Statistics of the United States. By Thomas C. Minor, M.D., of Cincinnati. Pp. 55.

The subject is studied on the basis of the census of 1870, with reference to geographical position, temperature and altitude, and also to race, sex and age.

With regard to temperature, he concludes that the disease is not modified between zero and 65° F., but above 75° it is rapidly diminished. It is most fatal at 2 years, and the greatest mortality is under 5 years. From puberty to 45 or 50, females are somewhat more liable. The colored population seem to suffer far less than the white. Altitude, he concludes, "favorizes" a tendency to scarlatina.

His conclusions are undoubtedly correct, and, though he gives no explanation, the reason may be found according as the several conditions affect the habits of people in their daily lives, and have reference chiefly to temperature. When the weather is warm enough, free ventilation is enjoyed and the infection is dissipated. Young children and women are more confined indoors, and consequently are more exposed to the contagion. High altitude gives a colder climate and less ventilation. If

similar investigations were extended to small-pox and measles, the results would be found about the same, and for the same reasons. The colored races are more liable to small-pox, but this is largely attributable to neglect of preventive measures.

S. S. H.

On Altitude and Climate in the Treatment of Pulmonary Phthisis. Pp. 10.

Statistics of Mortality from Pulmonary Phthisis in the United States and in Europe. Compiled from Official Health Reports and from Data obtained from Life Insurance Companies. Pp. 53.

These monographs are by Dr. Wm. Gleitsman, Physician in charge of the Mountain Sanitarium for Pulmonary Diseases, at Asheville, N. C.

Only within a recent period has altitude been recognized in the selection of a suitable resort for consumptives, but it is now reckoned among the most important points. The most weighty arguments in favor of his thesis are stated by the author, with one material exception. He mentions the advantage of being able to choose a Southern and warm locality for a permanent residence, as altitude mitigates extreme heat, secures a limited range of temperature, and diminishes pressure on the lungs, from rarefaction of the air. He might add that this last condition requires the respiration of an increased volume of air, and consequently leads to expansion of the healthy portion of the lungs.

The statistics have reference to age, sex, season of the year, etc., and give ratio to population and to aggregate mortality. Another valuable feature would be the relation of race to liability. Enough has been gathered by other writers already, to show that the African and mixed races in this country furnish more than their due proportion of victims to pulmonary consumption.

The subject is an interesting and important one, and these tables form a valuable contribution to its elucidation.

S. S. H.

Transactions of the Medical Society of the District of Columbia, July and October, 1875. Pp. 44.

This is made up of such portions of the weekly meetings as

are selected by the publishing committee. The matter in this number is chiefly of a clinical nature, illustrated by occasional pathological specimens. It is evident that the Society is a live and working body, and the publication of its proceedings indicates that they intend to let their light shine. S. S. H.

Abortion; its Causes and Treatment. By Walter Coles. M.D. Pp. 71.

By far the greater part of this essay is occupied with the first head of this subject, and the causes are divided into, I. Parental; II. Fœtal; III. Accidental. The most prominent place is given to the first division, under the distinction of maternal causes. These are very numerous, and among them are reckoned many diseases, febrile and otherwise. In addition to those enumerated by the author, practitioners in our southwestern cities will recognize yellow fever as playing a prominent part.

Not deeming an analysis of the essay necessary in this place, we take occasion to express an appreciation of the care bestowed in its preparation, and of its value to the medical reader.

S. S. H.

Transactions of the Medical Society of the State of West Virginia, together with the Constitution and By-Laws. Pp. 129.

This Society was organized in 1867, four years after the dismemberment of the State of Virginia.

Following the minutes of the meeting, which was held at Point Pleasant, June 2d and 3d, comes the address of the President, Dr. Matthew Campbell. The point of chief interest which we discover in this discourse, is the author's answer to his own question, "What can be done to elevate the medical profession—to protect its interests and its honor?" The answer is enunciated in these words: "We believe that a remedy might be devised through proper State or National legislation."

Several times already our readers may remember that this very point has been touched on, in the notice of medical addresses, and it is not necessary now to reproduce our views in opposition to legislative interference with medical qualifications. If the doctors can't devise some mode to render themselves

respectable and respected, without appealing to the politicians, then, we say, they have as much honor as they deserve, and the sovereign people have no right to complain of their physic, as long as they have the right to choose their medical advisers.

A report follows on the Epidemics of Wheeling, by Dr. S. L. Jepson, the Health Officer. Among the epidemic diseases of 1873, typhoid fever and cholera are to be noted. It appears that the privy system of Wheeling is very antiquated and faulty, and people are at a loss to find means to keep water from flowing into the vaults. The natural difficulties of our wet surface in New Orleans have been overcome by the plan of constructing the vaults of brick, cemented so as to be water-tight, and extending some distance above the surface of the ground The author has prepared a tabular form of all the cholera cases, showing, among other particulars, the sanitary circumstances affecting them, and he concludes that these had less influence on the origin and severity of cases than the personal habits of those affected. A difficulty presents itself to his mind in determining whether the dejections of the preliminary diarrhœa in cholera contain the poison of the disease. Disinfection was not resorted to until active cholera symptoms had supervened, while of 700 hands employed at the iron mills of Wheeling only 10 contracted the disease, although all used the same privies. On the other hand, the history of cases in the country indicates that the excreta of the early stage are infected with the poison. He attempts to reconcile the discrepancy by a suppositious process of spontaneous atmospheric disinfection at the iron works, and it is to be regretted that he goes into no particulars, so that we are left quite in the dark respecting a process which might be of inestimable value to other cholera-stricken communities.

A paper on Forceps in Midwifery is contributed by Dr. Wesley H. Sharp. He recognizes and approves a tendency in this country to the earlier and more frequent resort to the forceps than was practiced in the last generation. A table is given, made up of many thousands of deliveries in some of the principal cities of Europe, which exhibits in a striking manner the inverse ratio of forceps-cases to craniotomy in the experience of different eminent practitioners. Moreover he offers evidence to show that still-births diminish as instrumental aid is more frequently offered, and that such accidents as vesico-vaginal fistules and inflammation of the pelvic organs diminish in like manner.

While his conclusions are to be admitted as correct, we approve also in general terms of the rules laid down for the use of the forceps.

The same writer, in a report on Climatology and Epidemic Diseases, notices a fact which has been extensively observed elsewhere, that, as malarial fevers disappear from a locality, they are followed by an increased prevalence of typhoid fever. Each one of these fevers is attributable to its own peculiar poison, and, admitting the above fact, it seems unscientific to look for any antagonism between the two causes of febrile processes. No explanation is offered by the author, and we venture the suggestion that, whereas increase of population brings the soil under general cultivation and substitutes agricultural products in place of miasmatic growths, at the same time neglect of suitable hygienic measures leaves the community more exposed than before to such poisonous germs as are reproduced within the human body.

Passing over a number of cases reported by different members, we come to one reported by Dr. John Frissell, of puerperal convulsions. The treatment resorted to was that of copious venesection, and it is justified by quoting from his own earlier experience. No allusion is made to the modern procedure of inducing premature labor, premised by resorting to chloroform and chloral *pro ra nata.*

The notice of these, the principal topics of general interest, has been imperceptibly so prolonged as to leave no further space for the consideration of the remaining contents. S. S. H.

Iridotomy and its Applicability to certain Defects of the Eye. By A. W. Calhoun, M.D, Professor of Diseases of Eye and Ear, Atlanta Medical College. Pp. 8.

This operation, though not entirely new, has only recently been made prominent by Dr. Wecker, of Paris. It differs from iridectomy simply in this, that no substance is removed from the iris by the operation, but a slit merely is made from the pupillary margin outward, and the pupil is enlarged by the retraction of the cut edges. Though rather more difficult of performance than iridectomy, on account of greater danger of wounding the capsule of the lens, it is advantageous, inasmuch as the enlargement of the pupil can be more readily kept within due bounds.

This operation is considered applicable in case of central opacity of the lens, of the inflammatory production of an opaque membrane over the pupil after operation for cataract, and in case of opacity of the cornea affecting only the central portion.

S. S. H.

Two Cases of Exophthalmic Goitre, associated with Chronic Urticaria; illustrative of the Relations of the Nervous System to Diseases of the Skin. By L. Duncan Bulkley, M.D. Pp. 10.

These cases, in a clinical sense, are interesting on account of their rarity. The author, in connection with them, takes occasion to make some judicious remarks on the neurotic features of other cutaneous affections. S. S. H.

EDITORIAL.

A National System of Quarantine.

This has lately become a subject of great interest, from the increasing intimacy of commercial relations between tropical American ports and our seaboard cities, and between the latter and all parts of the country by river and railroad communication. Hitherto each State or each port has decided the matter without reference to the welfare of those beyond its limits; and, while the question has been agitated between cupidity and fear, each commercial port has been actuated by jealousy, lest a rival in trade might gain an advantage by offering greater facilities of intercourse.

A lumber trade which has sprung up within a few years between the gulf coast of Mississippi and tropical ports annually visited by yellow fever, in the absence of all quarantine restrictions along that coast has resulted for two seasons in the introduction of this pestilence in several of its towns, at the same time threatening and alarming the neighboring cities of New Orleans and Mobile, which are in daily railroad communication along the infected coast. This fact, in addition to the introduction of yellow fever from Pensacola to Montgomery in 1873, and its probable transportation to Shreveport and Memphis from New Orleans the same year, together with its prevalence in several interior

towns of Texas, has led to an appeal to the General Government for action.

During the last session of Congress an effort was made to arrest this annual invader by a bill introduced into the House by Hon. F. G. Bromberg, of Mobile. A synopsis of the bill is here quoted from the *Congressional Record*:

"It provides that it shall not be lawful to bring any vessel or vehicle coming from a foreign port or country, and affected with a contagious or infectious disease, or conveying persons, merchandise, or animals affected with contagious or infectious diseases, into any port of the United States, except under the regulations hereinafter provided.

"The second section provides that the Surgeon-General of the Army, the Surgeon-General of the Navy, and the supervising surgeon of the marine-hospital service are hereby constituted, *ex officio*, a board to make the regulations to be observed by persons controlling vessels or vehicles coming from foreign ports or countries into ports of the United States, by passengers upon and persons connected with vessels or vehicles so coming, and by pilots at the several ports of entry, to the end that no persons, animals, or goods affected with infectious or contagious diseases may enter the United States. And said board may prescribe the times, manner, and places of performing quarantine by vessels, vehicles, persons, animals, and goods coming from foreign ports or countries, and may make all needful rules and regulations not inconsistent with law, and alter and amend the same, for the efficient execution of the purposes of this act; but no rule or regulation, or amendment to the same, shall have effect until approved by the President. The board shall make report annually to the Congress at its meeting in December. Said board shall organize within thirty days after the passage of the act, and establish the rules and officers for its own government.

"The third section provides that there shall be detailed or assigned by the President, from among the commissioned medical officers of either the Army or Navy, or from among the surgeons of the marine-hospital service of the Treasury Department, to be selected without regard to rank, but solely with reference to skill and experience in hygiene and public sanitary science, one who shall be the secretary to the above board, and shall in addition, under the direction of the board, be charged with the supervision of all matters pertaining to the establishment and maintenance of the system of quarantine provided by the act.

"The fourth section provides that for the execution of the duties arising out of this act medical officers of the Army or of the Navy, or surgeons of the marine-hospital service of the Treasury Department, may be detailed or assigned, according to the exigencies of the service, with especial regard to economy

and efficiency; but no person in the employment of the Government, detailed or assigned to duty under the provisions of this act, shall receive any additional compensation therefor; and the President of the United States shall issue such instructions to the officers of the various Departments of the Government, not interfering with their peculiar duties, as shall secure the aid and coöperation necessary to perfecting and enforcing the regulations provided for by the act.

"The fifth section provides that any person wilfully violating the provisions of the first section of the act shall, upon conviction, be liable to a penalty not exceeding $500, or to imprisonment for not more than two years, at the discretion of the court; and the circuit courts of the United States shall have jurisdiction of all cases arising under the provisions of the act.

"The sixth section provides that the provisions of the act shall not be so construed as to prevent the establishment and maintenance by States or municipalities of health regulations and quarantine measures, in addition to or furtherance of and not conflicting with the system constituted by this act; and such local systems and their appendages shall remain under the control of the respective local authorities."

A substitute for the sixth section was offered by Mr. Cox, of New York, and accepted by Mr. Bromberg. The substitute is as follows:

"That the provisions of this act shall not be so construed as to apply to the health regulations and quarantine measures maintained by States and municipalities; and such local systems and their appendages shall remain under the control of the respective local authorities."

Before proceeding to notice the other features of the bill, it may be observed here that Mr. Cox's substitute seems to afford a ready opportunity for any port to evade or nullify the whole force of the act, by the mere formality of establishing the smallest pretence of a quarantine. Uniformity of action is a most important feature of such a scheme, and it must never be sacrificed, if a national system be decided on.

With reference to the formation of the board exercising legislative functions, there is a natural objection to trusting so important powers to three individuals only, selected to preside over the medical department of those branches of the public service without special reference to their knowledge of sanitary science or preventive medicine. The danger of political, class and personal bias, must always be taken into consideration, and it is evident that this danger is generally inversely proportional to the number of individuals affected. It is therefore important

that such extensive powers should be entrusted to a more numerous body, selected on account of their known proficiency in sanitary matters. As all parts of the country are interested either immediately or remotely, all sections should be represented in the council.

These suggestions might naturally lead to the proposal that the American Medical Association be vested with this function, and the idea gains weight from the fact that the Alabama State Medical Society has already been constituted a State Board of Health with certain powers, and that a similar movement has been set in motion in Texas. To this it may be answered that the scheme is yet untried, and the precedent therefore of no value. It may be added that the American Medical Association has made some noisy efforts to elevate the standard of medical education, resulting in conspicuous failure, and that its most brilliant achievements have been in the cultivation of mutual admiration. In reality that body is too large for this kind of work, and its sessions are too short for due consideration of the subjects which would come before it.

Two suggestions worthy of notice have been made to the writer: (1) that the National Quarantine Council should be composed of a delegate from each State Board of Health; (2) that the choice of delegates be given to the several State Medical Societies. As between the two constituencies, it may be supposed that the general sense of the medical profession would be more truly represented by the medical societies than by boards of health, and that in this way there would be greater security against every kind of bias. Most of the States have State medical societies, while a considerable number have no State boards of health. Louisiana presents the anomaly of a State Board of Health, in the absence of a State Medical Society. If a similar condition existed in any other States, the act might provide that, under such circumstances, the State Board of Health send a representative. As regards our State individually, the second mode of representation might lead to the early formation of a State Medical Society, the want of which has been a reproach of too long standing already.

It might perhaps be deemed impracticable for such a purpose to gather a body of men from the extremities of our vast coun-ry, but the difficulty would be no greater than is found in the annual assembling of the American Medical Association, or the

Public Health Association. It would naturally follow that the National Quarantine Council would meet at the same place and time with one of these bodies, and the members of the latter would mostly be found in the others also.

With regard to the execution of measures decided in national council, it is likely that the duty could properly be vested in the three heads of medical bureaus mentioned in the bill quoted, and the routine work might be transacted by a secretary.

The above observations are grounded on a reasonable supposition that the same bill, or a similar one, will be brought up in the present session of Congress. There is a strong demand for action of this nature, particularly from the Southwest, as this section is most exposed to the annual introduction of yellow fever, and the impoverished condition of these States precludes large expenditures for the maintenance of quarantine along an extended coast. This is particularly the case in Florida, Mississippi and Texas.

It is not purposed here to discuss the political aspect of this subject—that is to say, whether the protection of life and health properly belongs to the Federal Government. The National Congress will consider themselves quite competent to decide this question; and if it is done in the affirmative, as may be judged likely from the passage of the bill through one house at the last session, they may then listen to suggestions from a medical source touching the points herein treated. It is desirable that the subject should receive the careful attention of sanitarians throughout the country, and it has been introduced here in the hope of eliciting discussion among the ablest minds in the profession, rather than a desire to advocate any particular plan.

It may be added that the scheme proposed is intended to include in its operations the exclusion of cholera, small-pox, and ship fever, as well as yellow fever, so that our whole borders will come within its scope. The above remarks have been limited to its application to yellow fever, because this is our particular dread in New Orleans.

A Deserved Compliment.

The following is a translation of a paragraph in the "Revue de Thérapeutique Medico-Chirurgicale," of December 1st, 1875:

"Academy of Medicine, Session of November 9th, 1875. M. Gosselin presiding. The Academy proceeded to elect by ballot a member as foreign correspondent in the first division (Anatomy, Physiology, etc.). The committee first presented the name of M. Swann (of Liege), who received twenty-seven votes; next the name of M. West (of London), two votes; third, M. Faget (of New Orleans), twenty-four votes."

Our readers will all rejoice that a compliment so fully merited has been bestowed upon our illustrious confrère, by placing his name so high on the roll of honor. We may look hopefully forward to an approaching day when his vigorous mind, high order of professional attainment, and instructive pen, will win for him yet greater distinction.

Unavoidable.

We regret that a communication from Dr. C. B. White, President of the Board of Health, came to hand so late that we are compelled to defer its publication until our next issue.

A New Medical Journal.

"The Louisville Medical News," a weekly, to be issued January 1st, 1876. The editor is Dr. R. O. Cowling, and our personal knowledge of him induces the belief that the paper will prove a valuable acquisition to our periodic literature.

Deferred.

A number of books have been received, critical notices of which must be deferred until our next number. Among these are reports of the Boards of Health of New Orleans and New York; the former for 1874—the latter for 1873. Also the Report of a Medical Commission upon the Sanitary Condition of Boston. Also the Transactions of the Illinois State Medical Society for 1875.

It gives us pleasure to state in this connection, that we have received Vol. I. of "Medical and Surgical Memoirs: containing investigations on the Geographical Distribution, Causes, Nature, Relations and Treatment of Various Diseases, 1855-1876, by

Joseph Jones, M.D., Professor of Chemistry and Clinical Medicine, Medical Department, University of Louisiana." We do not hesitate to say in advance of the extended notice to appear in our next issue, that the profession will find these volumes an invaluable addition to medical literature. A circular containing a synopsis of contents of the first volume, together with terms of subscription, may be obtained by addressing Prof. Joseph Jones, P. O. Box 1500, New Orleans.

"The Physician's Visiting List for 1876. Twenty-fifth year of its publication. Philadelphia: Lindsay & Blakiston. Sold by all booksellers and druggists." The edition for 1876 is gotten up in its usual substantial and unexceptionable style.

"The Physician's Diary for 1876, containing a Visiting List, Diary and Daily Memoranda, Obstetric and Vaccination Records, etc., etc. Published at the office of Journal of Materia Medica, New Lebanon, N. Y., 1876." We presume that this visiting list was gotten up as an advertising medium. It must be admitted, however, that it is remarkably well executed, whether as it respects the arrangement and objects of its tables and blanks for entries, the character of material used, or the excellency of its finish.

Zell's Popular Encyclopedia and Universal Dictionary. Edited by L. Colange, L.L.D. New and revised edition. Philadelphia: Baker, Davis & Co

We regard this as one of the most important and convenient publications of the present day. It is indeed almost an indispensable requisite to a well selected library. While the subjects are treated with the terseness necessary to an encyclopedia, there is a degree of accuracy seldom arrived at in such works. This criticism is based upon repeated and careful examinations of the first edition, from the date of its publication in 1871 to the present time. The new and revised edition promises extensive additions and improvements. The general agent of the work is J. W. Marsh, St. Louis, Mo.

New Orleans Medical and Surgical Association.

At the late Anniversary Meeting of this Association, Dr. D.

C. Holliday was elected President, Dr. J. H. Crawcour, Vice President, and Dr. W. H. Watkins, Secretary. Communications, circulars, or journals designed to be brought before the Association, should be directed to the Secretary.

OBITUARY.

John Davies Jackson, M.D., of Danville, Ky., died in that place on December 8th, 1875.

He was born in Danville on the 12th of December, 1834. He received his academic and classical education at Centre College, Danville, Ky., where he graduated in 1854, and three years later obtained his medical degree at the Medical Department of the University of Pennsylvania, and he at once began the practice of his profession in his native place, where he labored up to the beginning of his fatal illness.

On the opening of the war between the States, he entered the Confederate service as a surgeon, and served with distinction in the field until the surrender at Appomatox. Hostilities having ceased, he returned to his home and resumed his practice there. He soon became the favorite operating surgeon and consulting physician of central Kentucky, and for a number of years previous to his death did the largest practice in that portion of the State.

The subject of this notice was possessed of quick perception, clear judgment, and a wonderful amount of industry and application. With a thorough classical education and a trained mind, he was an accomplished medical man. Indeed, his familiarity with medical literature was excelled by very few. It was as a general practitioner of medicine and surgery that he particularly excelled. He had familiarized himself with the views and practice of the most eminent teachers and practitioners by his thorough reading and his observations in the various cities and hospitals of this country and Europe. With his superior judgment, clear reasoning, valuable experience, steady hand, educated touch, and inspiring presence, he was a very superior and successful practitioner.

He was devoted to his profession, and took an active interest in every measure which promised to advance its influence and extend its usefulness. His contributions to medical literature were numerous and valuable. He was one of the founders of the "Boyle County (Ky.) Medical Society," and of the "Central

Kentucky Medical Association," an active member of the "Kentucky State Medical Society," and of the "American Medical Association." He was a corresponding member of the Gynæcological Society of Boston and of the Obstetrical Society of Louisville, honorary member of the "California State Medical Society," and at the last meeting of the "American Medical Association" he was elected to the high position of first Vice president of the Association for the ensuing year.

Dr. JACKSON was a man of incorruptible honor and integrity, possessed of the highest sense of duty, and by his superior attainments, modest demeanor, gentlemanly bearing and intelligence, won the respect and admiration of all who knew him.

He was personally very popular with the profession and the public, and by superior merits alone attained the high position which he occupied in professional and public esteem.

In his untimely death the profession has lost an earnest worker and devoted member, who had done much for its interests and for the advancement of its knowledge.

The influence of his pure and upright character, the beautiful example of his brief but useful life, his efforts for promoting the interests of his profession, and his valuable contributions to its literature, will perpetuate his memory in the annals of American medicine through many years to come.

The following tribute to the memory of Dr. JOHN D. JACKSON was addressed to a medical friend of Dr. JACKSON, residing in this city. It is published by the proffered permission of the distinguished writer, and shows in what high estimation the subject of the letter was held by all who could appreciate his high attainments and noble character:

BOSTON, December 16th, 1875.

My Dear Sir:

I received, through your kindness, this morning, a copy of the "KENTUCKY ADVOCATE," containing the sad announcement of the death of Dr. JOHN DAVIES JACKSON, of Danville. My own recollections of this most intelligent and courteous gentleman are such that I could not read of his death without deep personal feeling.

I think it was in the session of 1869–70, that I first made Dr. JACKSON'S acquaintance. He came into my lecture as a stranger, not having any introduction to me. I could not help noticing him, as there was something in his presence which attracted me

and impressed me with the idea that he was a person entitled to special attention. After my lecture I spoke to him and in a few minutes I had given him my confidence and asked him to visit my house. When he came to see me I found that he was not only modest and pleasing in his manners, but that he was, in some respects, the most scholarly member of the profession I had met for a long time. I showed him such treasures as I had in the way of the great monumental works in medical, and especially anatomical, science, and found that he too was a lover of old books—good old books—as well as new ones, and could appreciate, as very few can, an early edition of VESALIUS or of AMBROSE PARE, or still rarer works, such as I had picked up here and there, at home or abroad. He was an enthusiast in books and knew the good ones from having owned many of them. He had lost two libraries, he told me, one by fire and one in the late war—for he was on the other side among

"Nos bons amis, les ennemis,"

in the late interval of suspended friendship which we are trying to forget as fast as we can.

My attentions to Dr. JACKSON were nothing, as it seemed to me, to be especially remembered, but he insisted on never forgetting them. Not long after his return he sent me a great box containing some of the finest fruits he could find in the market, some of the other products, characteristic ones, of Kentucky soil and industry, and at the bottom of the box two rare and valuable works, folios, both of them full of fine plates, neither of which volumes I had ever happened to meet with before, and which I considered a great accession to my library. Several times since this Dr. JACKSON has sent me presents, such as he thought would be acceptable, and always so delicately and gracefully that it almost seemed as if I were doing him a favor in accepting them.

Remembering that I have never met him but two or three times I feel as if my recollections might seem like an intrusion in the midst of sorrows which can hardly listen as yet to words of consolation. If he so impressed one almost a stranger, what must he have been to those nearest to him, and to the community in which he lived and for which he labored!

Let me add my simple record to the eulogies which have been and will be spoken and written of him. I could not say that I knew him as many did, but easily as I made his friendship and limited as has been our intercourse, I feel his loss almost as if I had known him from my youth upwards. Believe me, My Dear Sir.

Yours Very Truly,

OLIVER WENDELL HOLMES.

—*Kentucky Advocate.*

METEOROLOGICAL REPORT FOR NEW ORLEANS.

Table I—November.

Day of Month.	Temperature.			Mean Barometer Daily.	Relative Humidity—Daily.	Rain fall—inches
	Maximum.	Minimum.	Range.			
1	74	53	21	30.215	61	.00
2	78	57.5	20.5	30.107	72	.00
3	80	63	17	30.005	71	.54
4	83	68.5	14.5	29.854	78	.01
5	69	55	14	29.931	83	1.00
6	63	54	9	30.039	88	.00
7	63	55	8	29.973	—	.00
8	66.5	55.5	11	30.111	73	.94
9	66	53	13	29.962	89	.00
10	58	53.5	4.5	30.175	75	.00
11	66	46	20	30.281	75	.00
12	70.5	50	20.5	30.220	72	.00
13	75	58.5	16 5	30.075	74	.00
14	83.5	66	17.5	29.875	78	.00
15	82.5	69	13.5	29.853	78	.00
16	80	56	24	30.057	70	.00
17	60.5	50	10.5	30.308	5[illegible]	.00
18	74	50	24	30.189	83	.00
19	82	70	12	30.075	83	.00
20	81	71	10	30.056	88	.00
21	81	70.5	10	30.137	80	.00
22	73	63	10	30 206	84	.00
23	80	68	12	30 200	82	.48
24	74	64	10	30.258	78	.00
25	72	61	11	30.152	87	.20
26	77	65 5	11.5	30 091	84	.11
27	68	63	5	30.178	88	.00
28	73	62	11	30.130	89	1.90
29	69.5	65	4.5	30.042	88	.27
30	66	60	5.5	30.035	88	.19
Mean..	72.97	59.90	13.07	30.094	79	Total. 5.64

Table II---December.

Day of Month.	Temperature.			Mean Barometer Daily.	Relative Humidity—Daily.	Rain fall—inches
	Maximum.	Minimum.	Range.			
1	69.5	61	8.5	29.967	90	.23
2	67 5	57.5	10	30.054	82	.00
3	70	59.5	10.5	30.131	82	3.74
4	70	63	7	29.933	93	
5	69	61	8	29.832	91	.00
6	72	59	13	29.753	78	.00
7	54.5	46.5	8	29.900	65	.00
8	53	39	14	30.120	55	.00
9	60.5	38	22.5	30.239	62	.00
10	66	47	19	30.245	76	.00
11	67	52	15	30.145	69	.00
12	62.5	49	13.5	30.236	59	.00
13	64	49.5	14.5	30.200	68	.00
14	57	48	9	30.270	59	.00
15	71	49	22	30.165	73	.00
16	72.5	56.5	16	30.096	82	.32
17	54	40	14	30.364	44	.00
18	51	35.5	15.5	30.460	56	.00
19	58.5	46	12.5	30.405	34	.00
20	70	51.5	18.5	30.324	78	.00
21	75	58	17	30.322	82	.00
22	77.5	64	13.5	30.144	88	.00
23	78	68.5	9.5	30.160	83	.00
24	78.5	68.5	10	30.046	85	.00
25	78	70	8	30.038	82	.00
26	78	70	8	30.050	93	.00
27	74	67	7	30.116	93	.00
28	78	69	9	30.034	85	.00
29	78.5	70	8.5	30.034	85	.38
30	79	68	11	30.102	87	.00
31	78	69	9	30.120	82	.20
Mean..	68.77	56.47	12.30	30.130	75	Total. 4.87

Mortality in New Orleans from November 1st, 1875, to December 26th, 1875, inclusive.

Week Ending	Scarlet Fever.	Malarial Fevers.	Consumption.	Small-pox.	Yellow Fever.	Total Mortality.
Nov. 7.....	9	7	15	1	2	114
Nov. 14.....	3	3	15	0	3	116
Nov. 21.....	4	7	10	0	0	106
Nov. 28.....	4	4	12	0	2	107
Dec. 5.....	5	2	7	2	2	92
Dec. 12.....	4	1	8	0	1	92
Dec. 19.....	5	3	6	1	0	97
Dec. 26.....	4	7	28	1	1	133
Totals.....	38	34	101	5	11	857

THE

NEW ORLEANS

MEDICAL AND SURGICAL JOURNAL.

MARCH, 1876.

ORIGINAL COMMUNICATIONS.

THE RESULTS OF LISTER'S ANTISEPTIC TREATMENT OF WOUNDS IN GERMAN HOSPITALS, AND REMARKS ON THE THEORY OF SEPTIC INFECTION.

BY M. SCHUPPERT, M.D.

The following lines form part of a lecture delivered in the amphitheatre of the Charity Hospital, in the beginning of November. In giving herewith a greater publicity to it, I hope to meet the approval of some of my colleagues.

Gentlemen—During my late transatlantic travels I visited quite a number of universities and hospitals, yet the experience I gained of Lister's antiseptic treatment of wounds was mainly due to the hospitals of Griefswald, Berlin, Halle and Wurzburg. Volkmann, Professor of Surgery in Halle, had just published his "Contributions to Surgery," in which he gave ample proofs of the success obtained with the antiseptic method, and his observations represent the experience in the majority of the institutions mentioned, with the exception probably of some points of minor importance and consideration.

Not better may I qualify the character of surgery of our present time and prove the progress which has been made during the last decade, than in citing the diction of one of our modern surgeons: "For every case of pyæmia, for every case of erysipelas, for every necrosis in the stump of an amputated limb, will the surgeon of our present era be held responsible."

Gentlemen—This may appear to many of you a bold assertion, and if it should turn out to be not literally true, with reference to erysipelas it certainly is not; it at least confirms what I have said, and I may add, of what I had occasion to observe during my peregrinations in German hospitals, that I do not feel encouraged to contradict the experience upon which the celebrated surgeon in Halle has based his diction. Amongst the many improvements I met with, nothing indeed surprised me more than the results obtained by the so-called antiseptic method of Lister, and having seen its wonderful and astonishing results, I do not hesitate to proclaim it, with Volkmann, one of the most important improvements in modern surgery, and I stand to-day fully committed to it. You will probably tell me, says Volkmann in his "Contributions," that there is nothing new therein, that you have heard of Lister's antiseptic treatment during the last five or six years, that it has been tried and failed with many, and that Lister himself has so often altered his treatment that your confidence in him has been shaken. There is some truth in these remarks, but with the one essential exception, that whilst Lister constantly tried to improve on his method, he never changed the main idea on which he had been improving; a most important point, forgotten by many who thought themselves entitled and competent to make also alterations, but neglected thereby the most essential points in the treatment. When Lister, after years of trials and experiments, had finally arrived at the present stage of his treatment, many had meanwhile formed their opinion of it, and had given up his method, as either too *complicated* or because it had failed in their hands. It is remarkable, that though we have only to answer a few fundamental questions, in order to come to the true criterion of the practical importance of that method, an understanding of its essential points has not been obtained yet by many who have given it even a fair trial. Another and probably one of the main reasons, why Lister has failed and did not impress the profession with the importance of his method, may be found in the circumstance that his precepts have appeared from the beginning with a theory sharply formulated in its effects; or in other words, that his antiseptic method had its origin in theoretical reasoning. Though it cannot be denied that the manifold alterations the inventor has thought proper to submit his method to, were improvements obtained at the bedside of patients, proving thereby

its empirical offspring; still the method, even in the latest shape, presents so many signs of its deductive origin, that an unbiased judgment cannot be expected from those who have taken a decided position on all such theoretical points, which come in question here, and are of so great an interest in our views. Whoever has had an opportunity to examine the results of the antiseptic treatment in hospitals, thinks also proper to accept its theory; yet many went even beyond Lister himself, who, to its defence be it said, in advocating the theoretical base of his treatment, always thought proper to speak with a certain reservation. Other opponents of the method acted, to say the least, very improperly in not publishing the results obtained, because they were combatting the facts as improbable and untenable. So has it come, that in judging the antiseptic method, we find on one side men not free yet from a principled enthusiasm—men who are very particular in selecting proofs for their assertions; whilst on the other side, we have hardly passed over a passive negation; nevertheless is it proper that practical surgeons should, first of all, become acquainted with the principal points and facts asserted by Lister. These facts made known by him are of such a character, that no conscientious surgeon can hesitate to declare himself either pro or con. The antiseptic treatment of Lister does not consist in the exclusive use of an antiseptic; it is not only a disinfecting treatment, but as he himself said, a treatment with the object of preventing putrid decomposition in the affected parts. (Vide his treatise upon the effects of the antiseptic system of treatment upon the salubrity of hospitals, Edinburg, 1870, page 8.) Lister starts from the idea, that an unfavorable progress in a wound is caused by an abnormal condition of the secretion, a condition produced by elements which must come from without into the wound. Lister's treatment has therefore no other object but to secure the wound against these noxious elements. The main questions to be decided now are: if it is true that every wound, treated from its beginning according to the antiseptic method, does exclude every sepsis, every decomposition, and especially, if those noxious and progressive forms of an acute suppuration, even in most severe cases, be never developed? if it is further true, that the suppurative stage, including the phenomena of decomposition and local reaction, are totally, or as good as totally, absent? if the secretion becomes limited, and primary intention and agglutination of wound-

edges, even in a great depth, are the rule; and finally, if accidental wound diseases are so rare, that when they happen the question may be properly raised: if they have not been caused by neglect in the application of the antiseptic bandage? You will perceive hereby that, we go a good deal farther in the requirements of a proper antiseptic treatment than many would expect from a defender of such a treatment. Now I will meet those questions in stating, that Lister's antiseptic system of treatment will accomplish all that is required here, under the conditions mentioned; that is, when the wounded parts are attended to in proper time, and all the cautels have been observed faithfully. It would be proper to say here a few words of the action of the antiseptic treatment, to give a theoretical explanation of the modus operandi of our method, but all we know positive is our ignorance; all I can state is of a negative character. That the antiseptic bandage does not exclude the presence of bacteriæ (as those minute organisms present in putrid matter have been named) has been proved by Ranke, one of the able assistants of Prof. Volkmann in Halle; and it is further certain, that the application of carbolic acid, without the other component parts of the antiseptic dressing, does not exercise the singular influence in regard to the healing process of wounds; nor does the carbolic acid deserve any preference over other antiseptic remedies, yet it is even a great desideratum to see it soon displaced by others, because it has not the character of an innoxious application.

Gentlemen—Most all of you know, or have heard of the great difference which exists between subcutaneous and open wounds. Even lacerated and contused wounds, if subcutaneous, generally heal without suppuration, whilst a wound exposed to the influence of the atmospheric air will heal under suppuration and the formation of granulations. The influence of the air therefore is obvious. The time is passed in which we thought that the new tissues were formed from pus. We are even trying now to suppress suppuration as much as possible, in order to spare to the body the loss of albuminous matter. Pus is not considered any more a necessary element. There is therefore nothing absurd in the position, that if we could do away with the irritating influence of the air, we might even see a granulating wound heal, like a subcutaneous one, without suppuration. A scab covering a small wound, which scab has been formed by an exsiccation of

the secreted fluid, protects the granulations against the irritating substances contained in the air, the formation of pus ceases, and under the scab the granulations are covered by the newly-formed epithelium. Even larger granulating surfaces, like the walls of an abscess, may heal after the discharge of the pus and if brought in close contact with each other. Such an agglutination would be impossible by a continued secretion of pus, and if the secretion of pus was a necessity, the walls would not agglutinate; but the fact is, that because by the contact the influence of the irritating substances, contained in the air, ceases, pus is no longer secreted and the result is agglutination. From all this it is obvious, that suppuration is not a necessary element in the healing process of wounds, but is produced by an abnormal irritation of substances contained in the atmospheric air. This observation induced Lister to say, that if we could protect an open wound against the influence of such irritating substances, such a wound would heal without suppuration. The question which now arises here is, of what nature are those irritating substances contained in the air? Are they gases or solid bodies? Are they of an organic or inorganic nature? I will not argue this question for the present, but only state here that the gaseous theory, advocated first by Gay Lussac, who thought the putrefaction produced by the absorption of oxygen, is untenable and has become obsolete. The controversy in the cause of putrefaction is at present about its organic character. We see here men like Chevreul, Pasteur, Tyndall, advocating the theory of organism. On this side we meet also Hueter, Cohn, Rindfleish, Waldeyer, Recklinghausen, Klebs, and others, who attribute to these organisms (bacteriæ), the constant concomitants of putrefying substances, the cause of putrefaction. We know that the celebrated chemist Liebig considered that process to be produced by the chemical action of a dead ferment, and the equally great physicist Helmholz, and chemist Hoppe-Seylor, asserted that putrefaction was possible without the presence of such organism. In examining the different experiments and arguments of the different authors, I have taken sides with those who have advocated the process of putrefaction to be caused by these organisms. But whatever the real cause may be, it has had no influence on the theory upon which Lister had based his antiseptic treatment. Lister does not insist that the septic particles causing putrefaction are real organisms. "If any one prefers to

believe," he says, "that the septic particles are lifeless, that those vibriones and bacteriæ, which we always meet with in putrefying substances, are only accidental concomitants, or results of that process and not the cause of it, I, as a practical surgeon, do not like to dispute such opinions, neither do I like to enter into a controversy about the 'generatio æquivoca.'"

Before I now show to you, gentlemen, how Lister has made use of the results obtained by Pasteur and others, and wherein his present method of antiseptic treatment consists, I have to say a few words of the open treatment of wounds, which, though advocated still by some eminent surgeons, will finally have to succumb to the superior method under consideration. The character of the open treatment of wounds is expressed in the name. No bandages are applied. After the wounds have been cleaned they are treated in various ways and manner, but with the object also of keeping off all contagious matter. After amputation, for instance, the stump is put in a van with warm water containing some disinfecting substances, like permanganate of potassa, chloride of lime, carbolic acid, or acetate of aluminium (adopted by Billroth, of Vienna), or the stump is covered with rags saturated with a solution of the named substances. Volkmann, of Halle, who was one of the first advocates of that treatment in Germany, met in the beginning with excellent results, though, as he stated, bad results occasionally happened, and most so when the hospital was overcrowded with wounded; then the open treatment failed to give satisfaction. During the summer and winter of 1871 to 1872, says Volkmann, when I was absent at the seat of war during a term of eight months, the hospital became over-filled with wounded, and the number of lives sacrificed by pyæmia and erysipelas became so exorbitant, that I intended to appeal to the Government to have the institution closed, at least temporarily. The hospital, built at a time when the number of applicants for admission was still a small one, and the requisites for a good constructed hospital were comparatively unknown, it could not give satisfaction any longer with the increase of the material, which placed it on an equal footing with the largest institutions of that kind in Germany. Such were the unsatisfactory conditions at the end of November, 1872. Volkmaan continues: When I began to try the new method of Lister, convinced that it would be only a frustraneous experiment, of a few weeks' duration. Nevertheless I considered

it a duty I had to perform in my professional position. A few weeks of trial were sufficient to enlist my whole attention to the new method of antiseptic treatment, and to convince myself, that with it the healing process of wounds was apparently very much modified, that the chemical quality of the secretions was materially changed, and the traumatic reaction of the tissues in all cases of serious injuries and capital operations greatly diminished; and that therefore, besides the practical final issue, and the in all probability favorable influence on the mortality, even from a scientific stand point, no surgeon could in justice be spared to become particularly acquainted with that method. To-day, in overhauling the clinical experiments made during a term of over fifteen months, I do not hesitate to recognize the extraordinary efficacy of the method of Lister, in regard to its practical final results. It is my earnest conviction, that in Lister's antiseptic treatment we see the way clear, which will lead us, when faithfully followed, most certainly to the object surgery is trying to obtain, namely, to secure to open wounds the protection and the benefit of subcutaneous operations. That this protection is not absolute, but relative, extensively great, nobody will deny who has been a faithful and close observer. Though we place less importance upon the small mortality under the antiseptic treatment than upon the proof of its specific influence on the process of healing, still we cannot deny that it has made a great impression upon us, considering the large number of severe cases and the favorable results obtained, even where death seemed imminent, or unavoidable. I cannot do better, gentlemen, than give here a condensed report of cases antiseptically treated in the hospital of Halle, under charge of the distinguished surgeon I have introduced to you.

The total number of stationary sick who were treated in that hospital from the 1st of February, 1872, till the 28th of February, 1874, amount to 716. Of *eighteen* complicated compound fractures of the lower extremities, conservatively treated, *not one death* had to be recorded.

Of *nine* penetrating wounds of joints, of which number five were of the knee-joint, *no death* happened.

Of *eighty-two severe* injuries of hands and fingers, with lacerations, compound fractures, and opening of joints, *not a single death took place*, yet not even a single acute progressive phlegmonous inflammation was observed.

Do I need more, gentlemen, in order to impress upon you the importance of a method of treatment with which such unheard of surgical triumphs were obtained? And these reports do not come from a private hospital, but they are the statistics of an institution which employs four assistant surgeons, and has been conducted under the eyes of hundreds of practitioners and medical students, who can vouch for the correctness of the statements made. But I have not done with that institution yet. I will mention some of the *operations* performed in that hospital, which has been built in a locality no surgeon to-day would select for such a purpose. An old, dilapidated, miserable building, standing in the midst of a dense population, surrounded by narrow, dark, unclean streets, this hospital, if it deserves that name, is even without any other ventilation than can be obtained by opening the narrow windows, few even in numbers. (To the honor of the Government be it stated here, that soon a new hospital will be built.) Now observe:

Of *thirteen amputations* and *disarticulations* of the upper extremity, of which number five were amputations, and one a disarticulation of the humerus (some cases presented a total destruction of the limb by machinery), and of seven amputations of the forearm, for severe injuries of the same nature, *not one solitary death happened*, and of six amputations of the leg the same result was observed—all recovered.

Of *fifteen amputations of the femur*, we find eight deaths recorded. But the history of these cases fully exonerates the antiseptic treatment. When they were admitted, pyæmia in several cases had been already established, and complications with albuminuria and other injuries of head and chest will explain the unavoidable results.

Of *resections of* JOINTS and of the *diaphysis of bones*, we find recorded *thirty-one cases* with only five dead. Four of these resections comprised the hip-joint, partially complicated with perforation of the acetabulum and pelvic abscesses.

Of *thirty-nine amputations of the mamma, three died*, two in consequence of pleuritis and one not treated by Lister's method.

Of *fifty-seven extirpations of large tumors*, resections of maxillary bones, *only four dead were recorded*, and none of these had been treated according to Lister (therefore out of question here).

Of *five ligations of large and important arteries*, of which one

comprised the iliac, three the femoral, one the axillary artery, *no death* happened.

Of *thirty-one cases of erysipelas*, many admitted with the disease already developed, *one death* only took place.

It is of interest to compare these results with such formerly obtained under the open treatment of wounds. Whilst, as we have seen, of eighteen compound fractures, of which *twelve* were complicated fractures of the leg, under Lister's treatment not a single death happened, there were in the same hospital, under care of the same surgeon, out of *sixteen such cases twelve deaths* recorded under the open wound treatment. Can a better proof be given of the importance of the antiseptic treatment? Gentlemen—I do not hesitate to say that such results as we have just mentioned are unheard of in the annals of surgery. There is no institution in the world which, laboring besides under so many and great disadvantages, can show such a record. With the initiation of Lister's method of treating wounds a new era has begun in surgery, and let us hope that such who are still opposed to the antiseptic treatment may soon meet with their Damascus. A conscientious surgeon will not risk the life of his patient, and advocate any other but the antiseptic treatment.

I will now turn to the modus operandi, or the influence the antiseptic method has upon the healing process of wounds, according to close observers. We will have to separate such cases which come under treatment immediately after an operation has been performed, or shortly after an injury has occurred, from such where, under the admission of atmospheric air, suppuration or putrefaction has already taken place. Under the first named condition only does it happen that a skilled experimentalist succeeds with the trial, whilst in the other instance he will frequently fail, or be only partially successful. In a corner of a sinuous wound, or in an overlooked fistulous tract, there may remain an even minimal quantity of an already modified secretion, and from there the wound will be infected anew in a more or less short time. We therefore cannot be too scrupulous and exact in cleaning a fresh wound, to wash it well out with carbolic water (containing from two to three parts of carbolic acid), and occasionally with the stronger solution of one part of chloride of zinc in eight parts of water, in order to destroy every remnant particle of a septic process. The most astonishing and to the surgeon satisfactory result of this treatment,

consists in the total absence of the stage of suppuration, of the otherwise commonly observed products of decomposition and local phenomena of reaction. The secretion of the sanious fluid with its specific odor, the inflammatory redness and swelling of the edges of the wound, of more or less intensity, which in every other treatment are seldom found missing, are never observed here, even in the most severe cases, if properly attended to. In the more favorable cases, molecular necrosis of the superficial tissues, when exposed to the contact of the air, will not take place; for several days the wound remains unchanged, presenting the aspect of a fresh wound, and will be covered by granulations in small stripes. The serum met with is always modorous in all cases which have been treated properly, a certain proof of the extraordinary efficacy of the method of Lister. Not only that: the common nauseating smell of the serum, usually found during the first days, is totally absent; but even when the wound is covered with granulations, do we miss the specific caseous odor of the pus, though the bandage has not been changed during two, three, or four days, or even at a longer period. In changing the bandage and removing the protective (a part of the dressing) which has been in immediate contact with the wounded parts, and is covered with the secretion, it does not present any other odor, if any, but that of carbolic acid. Even in extended gangrene, with detached necrotic parts, no smell will be observable in the wound's serum. In some cases where, from severe mechanical injuries, mortification has taken place in consequence of a primary interruption of the circulation, the beginning decomposition will always be recognized by a discoloration of the protective, and the surgeon of some experience in these matters will have in it a very sensitive indicator of the condition of the wound. In such an instance a repeated disinfection, or painting of the parts with the solution of chloride of zinc, will remove all traces of decomposition instantaneously, and restore the wound to its former good condition of antiseptic fame. It is known that no fluid inclines so intensively to decomposition, and in that condition acts so much as infectious matter, as blood out of circulation and retained in the tissues under a tightly applied bandage: yet such blood, under the antiseptic treatment, will not be decomposed, but even become organized and be supplanted by granulations. In dozens of well attended cases, I have observed the bloody coagulum,

filling out the wound, retaining a singular *pulpy condition* of a reddish dark color during 6–8 days, without any change whatsoever, either in color or substance. The granulations grow into it and consume it. In other cases the pulpy mass separates from the edges of the wound, and becoming diminished in size, drops out in a solid granular mass. In other cases again, the final result consists in the coagulated blood shrinking more and more during a space of from 8 to 14 days, attaining a color like leather, of an orange yellow, covering the wound like a soft scab and falling off, after cicatrisation has taken place. I have observed these phenomena even in osteotomic operations on the tibia, where the whole defect was filled out with blood, and during a space of 14 days no suppuration had taken place (six weeks even have been observed). Such a healing under a scab, kept wet all the time, has never been observed in any other kind of treatment. When we consider how inconvenient an often repeated cleaning of a wound is to the surgeon, and how much such an action interferes with the healing process, the value and importance thereof must be obvious. In regard to the success of the antiseptic treatment, it is desirable that all bleeding should be arrested before the first dressing is applied to the wound. Only in case when the first dressing should become saturated with blood will its removal be required, whilst otherwise its efficacy would be interfered with materially. How great the confidence in Lister's bandage I had occasion to observe in several hospitals. In the majority of cases I saw treated, every sign of an inflammatory œdematous swelling, as well as redness of the wounded edges, was wanting, even in the most aggravated lacerations produced by machines. In amputated limbs I several times saw the stump, even at the end of the first week, present sharp edges of a rather cadaverous aspect. In the most severe and complicated fractures, with denuded bony fragments, a partial gangrenous skin, and extensive extravasations of blood, no kind of reaction could be detected; the healing took place with a regularity in nowise different from the simplest wound. Seldom, if ever, will similar conditions be observed in any other kind of treatment. With the small reaction, the slow formation and increase of granulations, corresponds the small secretion, even in cases with great loss of substance and gaping wounds. Carbolic acid acts as an irritant, and whenever it has been applied for any length of time, for instance, as spray in operations, much blood

may be expected to be mixed with the secretion. Is the bandage much tinged, it may have to be removed during the first 4–8 hours; still the secretion will be found inodorous and greatly diminished during the next two days. During the following 3 or 4 days, in 24, 48, yes, even in 100 hours, the secretion will not amount to half a teaspoonful, and even less, of an inodorous liquid. Guided by these observations, it has been adopted as a rule that the bandage, in the beginning renewed every morning and night, will have to be changed only once in 24 hours, and very soon remain untouched even during 2, 3, or 4 days, if not longer. Necessarily this requires a close watching with the thermometer, and that the bandage be inspected morning and night to see that no part of it has become saturated with the secretion of the wound. In renewing the bandage great care has also to be taken to keep off all infectious matter, and *that danger* may be avoided best in applying the new dressing under a spray of carbol water, containing 2–3 parts carbolic acid.

The secretion under the antiseptic bandage is usually remarkably thin, and the ideal which Lister has formed of it consists in being rather serous and slimy than puriform, whilst the filling up of the wound with granulations and cicatrisation should go on regularly; but the realization of this ideal cannot always be obtained. So much for the secretion of wounds, and we may now turn to the influence of Lister's method on *the healing process of wounds by primary intention*.

The statistical reports of the hospital in Halle, during the 15 months after the initiation of Lister's method, are going to prove, that acute progressive phlegmonous inflammation with purulent infiltration, diphtheritic and necrotic inflammation of cellular tissue, acute purulent œdema in wounds, which have been treated antiseptically from the beginning, have never been observed even in a single instance; that on the contrary, the healing by primary intention had almost always been accomplished under application of compressive bandages, with carbolized sponges or cotton between the protective and the layers of gauze, and removal of the secretion by proper drainage tubes, and this happened as well with large flaps in amputations, as with deep-seated cavities in muscles, after the removal of large tumors. Knowing the danger from the retention and absorption of purulent matter in wounds, and how much therefore compressive bandages have to be avoided,

we have on the contrary, in Lister's treatment, the recommendation to compress the edges of a wound and walls of a cavity or abscess, even *tightly*, in order to secure good results. In comparing here the antiseptic treatment with others, you may judge of its importance. Whilst herein amongst the advocates of Lister's method no difference of opinion exists, a controversy has been started about the nature and character of the method, and the name some have attached to it in calling it an occlusive bandage, and considering even in the occlusion the cause of its benign influence; others on the contrary are opposed to that name, contending that the air has always free access to the wound, and that the appellation *occlusive* was therefore an improper one. A complete exclusion of air is impossible, and it should not be forgotten, that the object of Lister's method consists not so much in keeping off from the wound those organisms contained in the air, as destroying their vitality, when they should come in contact with the wounded parts. Thereto we have to come, when we meet with these organisms under an otherwise properly applied antiseptic bandage, as shown by Ranke. We may therefore call it, with Volkmann, *occlusive compress bandage*, by which those dangers are removed, which will be produced by the retention of putrescent matter. In the process of healing by first intention, the importance of drainage tubes cannot be too highly estimated; still we should not apply them any longer than necessary and not place them too deep into the cavities, but rather between the edges, so that the secretion of the wound can run off. With the cessation of the secretion they ought also to be removed, and the place which they occupied may be seen to close on the third or fourth day by properly applied compresses. That great men are not always free from uttering occasionally an absurdity, we may see verified, when we hear the celebrated Billroth of Vienna remark, "If an amputation wound heals by primary intention or not, has no weight with me." Most assuredly nobody ought in earnest deny, that with the healing by primary intention of a large wound a great many dangers are removed. No pyæmia or septicæmia can take place any longer, no infiltration of pus, no fever can happen from an amputation wound. Having healed, the stump will present a well rounded form with a good cushion; the bone will be covered, not with skin as usual, but with muscle; neuralgic affections, excoriation of the cicatrix, will not occur here; not to mention the time a

patient may be confined to bed, or have to suffer from a stump healing by granulation, as is the case from the open wound treatment. Gentlemen—I have here again to call upon the non-pariel results obtained by Volkmann and Thiersh, in order to prove to you the importance of the antiseptic treatment, with regard to the healing of even large wounds by primary intention. Of 10 amputations of the upper extremity, including one disarticulation of the shoulder, Volkmann succeeded to heal 8 by first intention, whilst in the remaining two, this was obtained to a great extent. Of all these patients none had to remain in bed longer than eight days; a few of them only suffered a little wound fever during a few days, two of them having had no fever at all. In all these cases Volkmann did not use any stitches, the vessels were secured by catgut ligatures, cut short and left in the wound for resorption. The drainage tubes I have seen in use, in all but one hospital, are of india rubber, of a small calibre, with side openings cut into them. The exception was in Grietswald, where Hueter uses metal tubes made of German silver. Under Lister's bandage, even when two or three such tubes have been placed near each other in a wound, otherwise not stitched, the parts agglutinate perfectly, with the exclusion only of the space the drainage tube occupies. After their removal, the edges of the fistulous tract left do not present the least inflammatory reaction. If not removed daily, for cleaning, the granulations will grow into the side openings.

It remains with us to record here some more benefits derived from Lister's treatment, its action in regard to *pain, fever* and *duration of time* the healing of a wound affords. The effect our method has in respect to *pain* is enormous, we may well say the *analgesy* is complete. In *thirteen* cases of resection of the hip-joint, which Volkmann performed on children, the after treatment was associated with a total absence of all pain. With reference to that particular joint, you will allow me, gentlemen, to engage your attention for a few minutes to a theme, though not under consideration.

During my visit to the various hospitals in Germany, where Lister's method has been adopted, I had the opportunity of meeting with a considerable number of cases with resected hip-joints. After the excision of the joint, the diseased extremity was placed on a pillow, in order to apply the antiseptic bandage properly. I have nothing to say against that,

but have a serious objection to raise against the subsequent after treatment. To make the necessary extension with pulling weights attached to the extremity operated upon, which I saw most universally done, is not sufficient to guard against the subsequent shortening of the limb, and which I met with in almost every instance. There is only one method to prevent the shortening of the limb, often amounting to several inches, and that consists in confining the limb in a properly adapted plaster bandage, with the tuber ischii to serve as a point d'appui for counter-extension. The last one of my cases I have operated upon, in which the head of the bone, including a portion of the large trochanter, had been removed, and also the acetabulum had been scraped out, the extremity had been confined till to the entire consolidation of the bony matter deposited, yet I might even say, restoration of the joint. With a great deal of satisfaction may I turn to that case, and I do not say a jot too much when I remark, that if the identity of the child could not be proved beyond a doubt, and I had witnesses to it in the persons of my distinguished friends, Drs. Lœber and Salomon, that I might be mistaken in the identity of the little fellow, so complete are both the length and mobility of the limb. Without the cicatrix there is no sign that ever an operation had been performed on it. If I am called upon to give my reasons for that extraordinary result, I can only refer to the plaster bandage and the extended time of its application during several months. And this case proves also, that it is not always necessary to practice ankylosis. The child enjoys a perfect mobility and security of the limb. It walks and supports the weight of the body, and it seems is not the worse off by the proper functionary action of the extremity.

I return now to the second point in our discourse, to the *fever*, and the advantages of Lister's bandage to it, and will quote again from Volkmann. There is no question, that by adopting the antiseptic treatment, a great number of the operated and seriously wounded do not present the slightest fever, even after resections of the hip and knee-joints, amputations of femur, extirpation of large tumors, even reaching the utmost limit of operative technic, whilst some may suffer a slight wound fever but for a few days. I will mention here, that the latest writers on fever theories do not seem to have exhausted the matter; there can be no doubt, that more and probably no less important factors than those described, are yet entirely unknown

to us, yet, where do we observe more frequently so great a disproportion between the height of the first, though short fever of reaction, the missing of every local reaction, of every pain and of all processes of decomposition, than under the application of Lister's bandage. I will here call your attention, gentlemen, to a circumstance which will prove to you, and I may say, with the certainty of a physiological experiment, the protecting power of the antiseptic treatment. Nearly in every case of a wound, says Volkmann, with a somewhat extended granulating surface, though it may be for some time free from all fever, the temperature will increase in the evening of the same day on which in the morning the typical bandage has been removed and has been supplanted by an indifferent dressing, say with water or a salve. This will last but 24 hours, but it may, under certain unfavorable circumstances, hold on and force us to return to the antiseptic treatment. It is therefore advisable never to break off *suddenly* with the antiseptic treatment, and then to cover the wound for awhile with a compressing bandage of carbolized cotton.

Of the shortening of the process of healing, nothing definite can be said, but we have seen by reference to the statistical reports of Halle, the great difference existing between our method and others. And so I met it most everywhere. Though I have had reference most exclusively to the published statistics of the hospital in Halle, and have given you the ideas and experience of the distinguished surgeon-in-chief of that institution, still in all the hospitals I have visited, and where the antiseptic treatment had been adopted, I have never heard or saw anything which would gainsay the truth of those statements, or cast a doubt upon the veracity of the reports made by Volkmann. All the surgeons of the hospitals in Halle, Leipzig, Berlin, Griefswald, Würzburg, and other universities, I had the pleasure of meeting, admitted, that since the adoption of Lister's method a great change for the better had taken place. It is not to be expected, that from the beginning you will meet with the same success obtained by those who have acquired great dexterity in the adaptation of that bandage, where so much depends on the closest attention paid to the most minute details; and we know besides, that in learning a trade a certain forfeit has to be paid by the beginner. Nor can it be expected, that the advocates of a method, promising such an unheard of success, should not arouse opposition. The "Contributions to Surgery by Volkmann," and

the ovation Lister met with at his late visit in Germany, and most so in Halle, set in motion the critic's pen. A colleague and landsman of Lister, Prof. Spence, of Edinburg, read an address before the medical society of that place, "On the Treatment of Wounds and Surgical Dressing," in which he says that putrescence may arise from certain states of the blood and general system. He thinks that the antiseptic treatment of wounds ignores the old philosophical views of the adhesive process of Hunter, and the writings of John Bell, Liston and Syme, on the treatment of incised wounds. He remarks: "To consider the new antiseptic treatment of Lister as one of the most important contributions to modern practice, could only arise from want of experience, or misrepresentation of that simple treatment of wounds laid down in the old philosophical views of Hunter." (And why not the evidently older and still more simple views of the Æsculapean heroes of Homer, Machaon, and Podalirius?) The learned professor then pitches into the German confrère of Halle, in putting to him this question, "How far apart from other conditions do different modes of dressing stand in the relation of cause to successful results?" "The answer," he says, "to this important question must rest on sufficient data and carefully weighed statistics," and he then volunteers his opinion how statistics had to be made up and what they had to contain. (The schoolmaster is abroad!) That pyæmia should not appear any more under the modern antiseptic treatment, he explains most ingeniously with the bold assertion, that the disease was fast disappearing, just as we had not met with it at one time in the bills of mortality. That the disease does not show a tendency to disappear in other hospitals, and where Lister's antiseptic method has not been yet incorporated, has no weight with our philosopher, and he concludes his philippic against the man who had had the audacity to pronounce Lister's method as "one of the most important contributions to modern practice" with the sentence: "*All is assertion* or *reference to special cases or to not very definite statistics of foreign hospitals.*" And our philosopher (o si tacuisses!) looks upon it as not a little curious, that he should hear most of the success of that treatment from abroad, instead of a little nearer home. We might answer that question with—because others understood the principle in Lister's method better than Prof. Spence did. Prof. Spence ought to learn that blind zeal brings only harm. He has either acted maliciously, in know-

ing better, or he has been led astray by ignorance. Before he ever tries again criticizing statements, written in a language he evidently does not understand, he ought to first become better acquainted with the matter he intends to deal with; he will then be spared the mortification of running foul of his object.

Another critic—a Dr. Krœnlein, of Zurich—has tried to win the spurs in attacking the celebrated professor of Halle, but has been worsted. In comparing the antiseptic treatment with the "open treatment of wounds," as still adopted in the hospital in Zurich, he comes out in favor of the latter. He accuses Volkmann of having committed different capital errors in his statistics and otherwise; that he had said erysipelas would never happen under a properly applied antiseptic bandage, but which statement he had contradicted himself in the description of several cases, where erysipelas had happened notwithstanding the early application of the antiseptic bandage. If Volkmann has committed errors, they are certainly not such as pointed out by Krœnlein. Whether erysipelas can be prevented by a properly applied antiseptic dressing may be considered still an open question; but so much is certain, that the disease, compared with former times, has considerably diminished in numbers. The main reason why Krœnlein prefers the open treatment is based upon the smaller mortality he pretends to have obtained in amputations of the thigh, in the hospital of Zurich. Even if this was true (but it is not), we know the difficulty in making up such statistics; we are cognizant of such important factors as age, constitution, causality, quality of the cases, cause of death, etc. Volkmann has proven that Krœnlein, in comparing the results obtained under the open treatment of wounds with the antiseptic treatment, has falsified the facts intentionally, and has acted in a malicious manner; "and that is even," Volkmann says, "le mensonge en chiffers"—"in a statistic with an arbitrary tendency." Krœnlein has been unmasked as a "malicious slanderer," and we therefore drop him as unworthy a farther consideration.

Where is a kind of treatment to be met with, we might inquire, which can show such results as Thiersh of Liepzig obtained with the antiseptic method, in the healing of four amputations of the thigh in from 14 to 19 days, under the application of only two dressings, the first of which remained in situ 10 days, and the complete cure obtained in amputations of the leg in a time from

14 to 21 days? And what is time? Time is not only money, it means also health, less loss of albuminous matter, therefore strength. It further means prevention from hospital cachexia, caused by the obnoxious influence of the hospital air. It further means saving of dressing material, which fully compensates for the more expensive antiseptic material; and this will be considered still more important, when the time of healing extends beyond 100 days in one and only 30-40 days in the other treatment. The opponents of the antiseptic treatment have further to acknowledge its superiority, quoad functionum membri, in amputation and with it the more frequently obtained prima reunio, the healing by first intention. The extraordinary cure in 14 days of a resection of the knee-joint, in a boy 7 years old, where, with the exception of a small fistula, a complete healing of the large wound was obtained by Volkmann, ought to impress the admirers of the open treatment of wounds, or of the old philosophical views of the adhesive process of Hunter. Let us recollect, that during a space of 18 months Volkmann performed 87 amputations, of which we find recorded the extraordinary large number of 32 amputations of the thigh with only 12 deaths, or a mortality of 13.7. Yet if we deduct from these, 9 cases which died independent of the operation, the majority only a few hours after the amputation, that mortality would be reduced to 3.4. In the publication of that report Volkman stated that not a single complicated fracture, treated with the antiseptic bandage, had ended fatally, neither had a single case of pyæmia happened, amongst a number of 87 amputations and of more than 40 resections. Amongst 9 resections of the knee-joint only one death took place, and that four weeks after the operation, on an acute tuberculosis of the brain. And at the end of that report Volkmann says: "There may occur alterations in the views of the antiseptic method, but the principle contained in this method will never again disappear from surgery, i. e., the treatment of wounds, it will die with it." On the 16th of December, 1875, another pamphlet appeared from the pen of the same author, wherein Volkmann says: "I am positively assured, that under the use of the antiseptic method the complicated and accidental wound diseases, the profuse and malignant forms of suppuration, will almost disappear. During the last 21 months, I have performed over 100 amputations and over 50 resections, without having had to record a single case of pyæmia or septicæmia following

an operation. Erysipelas has only appeared three or four times."

Gentlemen—I will here take leave of the opposition of the antiseptic method, and call your attention to the mechanical part of the application of the "antiseptic occlusive bandage," in mentioning the different elements of which it is composed. Great importance ought to be placed upon the utmost cleanliness of the parts surrounding a wound, before dressing it, or where an operation will be performed. The surgeon and assistants ought to wash their hands previously with carbol water of 2 or 3 per cent. strength. Volkmann even changes his coat at each successive operation. The instruments should be laid in carbolic water during a quarter of an hour; and all the material which will be used has to be disinfected previously, and some attention might even be given to the room in which the operation is performed. The remarkable results Volkmann has obtained, I believe, will have to be attributed also to the fact that he has built an operating room, with a floor laid out with stones, from which the blood is washed away with water immediately after each operation. The operation is performed, or the wound dressed, under a spray of carbol water, which is continued till the dressing is laid down. After the wound has been closed, and one or more drainage tubes, if necessary, been applied, the wound is covered first by the protective (a piece of oiled silk prepared with a thick coat of varnish of copal and a mixture of dextrin and carbol water). This protective shall form a perfect cover, without causing any irritation of the wound; it has also to be made wet with carbol water before being applied. On top of the protective are placed eight layers of gauze, made antiseptic. (This gauze and the protective, like all the material employed in the antiseptic dressing, are manufactured at Schaffhausen, Switzerland, and lately another establishment has been erected near Studtgard.) The gauze has to extend three or four fingers broad beyond the limits of the wound. Between the upper 7th and 8th layer is placed a piece of mackintosh, or india rubber cloth, of the size of the gauze. This serves that the secretion of the wound, before it reaches and penetrates to the uppermost layer of the gauze, or comes in contact with the air, will have to saturate the whole mass of the gauze covering, but which has to be prevented by exchanging the dressing with another one as soon as a spot of blood, or bloody serum, becomes visible. Every new dressing has to be

applied under spray of carbol water; the dressing is kept in its place by rollers of the same material, also carbolized, or made antiseptic. The renewal of the first dressing depends upon circumstances, as for instance, the quantity of secretion of the wound. It may remain three or four days. In case of a secon dary hemorrhage, of course it has to be removed earlier. In order to secure a good result, the antiseptic bandage requires close attention in all minute details. Ligatures are made of catgut, which are cut short and left in the wound tor resorption. Sutures when applied, have to be laid previously in carbol water, or are waxed with a carbolized wax. The drainage tubes ought to be removed on the third or fourth day, and ought never to extend beyond the covering gauze. The wound being redressed ought never to be exposed too long to the contact with the air. Let me repeat it, gentlemen, the antiseptic method, in order to secure good results, requires the greatest attention in all its details. You ought always to keep the main object before your eyes and not forget, that it is neither the spray, nor the protective, nor the layers of gauze, which will secure the effect, but the combination of all the parts together and a close observation of the rules mentioned. Never forget, that the *to be let alone* of the wound was the main principle upon which Lister builded up his method of dressing. All irritation of the wound ought to be avoided, and herewith I will close the chapter of the "occlusive antiseptic method of Lister" as adopted and improved by Volkmann, the main representative of that method in Germany. Thiersh, in Leipzig, has advocated the salicylic acid instead of the carbolic acid, but though it has been tried by several prominent surgeons, it has been found wanting and given up, as inferior to the carbolic acid. I will now turn to the theory of septic infection.

THE THEORY OF SEPTIC INFECTION.

In the old times of the Roman Republic, long before Rome had been selected as the capital of the vicegerent of the Lord, it seems it had been troubled already by the poisonous evaporations, not of the pontific, but of the pontinic swamps, and we meet there with a Roman author, Varro, who had pondered over the exsiccation of those swamps, stating that from these, small invisible animals were evaporated into the air, from the inhalation of which serious disturbances in the

organization of men were produced. Still it was not but previous to the 17th century that the observation of Varro received a further investigation by a Dutch merchant, who, retired from business, had turned to the study of natural sciences. Anton van Leuwenhœck was the man, who, with a microscope made by himself, first observed in rain water numberless minute organisms. The rain water had been exposed to the air during several days, and Leuwenhœck traced these organism corrrectly from germs, which had been swimming previously in the air. Amongst other discoveries of this rare man, who was centuries in advance of his time, were the germs of fermentation, but these were also forgotten again, till Schwan rediscovered them, during the third decennium of our era, and thereby gave an impulse, the end of which has not come yet. The relation of these organisms with the process of putrefaction was examined into by Helmholtz. This celebrated physicist made the observation, that in a liquid containing substances liable to undergo putrefaction, if boiled and brought in contact with air, which had passed through sulphuric acid, or had been exposed to a high temperature, the process of putrefaction would not take place. He proved hereby that these organisms were of an organic nature. Schrœder and Dusch further proved that these organisms could not be of a gaseous form, but had to be considered solid bodies, because, when the air had been filtered previously through cotton, before coming in contact with that liquid, putrefaction did not set in. It was left finally to Pasteur to make these organisms visible as spores and germs of fungi, in filtering the air through gun cotton, which he afterwards dissolved in ether, under the microscope. Pasteur further proved that fermentation and putrefaction were unexceptional and always induced by these fungi; that each separate fermentation was caused by a separate fungus and putrefaction by the smallest of these organisms. The students of botany, the highest authority in questions of this character, have then made further inquiries and stated, that these minute plants differed from others in not being able, by the want of chlorophyl, to produce organic bodies out of air, water and minerals, but that they could only subsist as parasites, that is, that they depended on organic bodies, already formed. We have learned to separate these fungi into two main genera. Those of the first genus live either as parasites on other living bodies, as the fungi, producing the diseases on potatoes and grapes, the

epidemics amongst the house flies, the silk-worms, and also some diseases of the human skin. The second genus, the sacrophytæ, are living on dead organic matter. Here we number mould, yeast, and the shizomycetæ, (bacteriæ, micrococci, etc.) Of the physiological conditions of the latter we know little, and not more do we know of the development of the different forms. I have given here a few historical facts, so far as they are of interest in dealing with questions, we will discuss in the following pages. But before I proceed in the matter, I will mention some of the objections raised by the opponents of septic infection, or of the living causes in a number of infectious diseases. Their main proof, the critics say, is based upon the steady condition of the observed facts. Klebs asserts to have met with his microsporon septicum in all cases of pyæmia and septicæmia; and he believes to have proved in his experiments the cause to rest in the presence of the bacteriæ. After Klebs came Duvaine with the pustula maligna, Hueter with diphtheria, Obermayer with the recurrent fever, and Burton Sanderson with the pox in sheep, who all are in favor of vindicating these organisms as the *cause*, not the *effect*, of the diseases. One of the most important arguments in favor of the germ theory, it cannot be denied, is the observation Hueter made in diphtheria and Recklinghausen in erysipelas, namely, that the bacteriæ are to be met with at the limits of the hearth of inflammation in healthy tissues, therefore in advance of the inflamed parts; but Arnold Hiller doubts that bacteriæ can enter the tissues, and he thinks it much nearer the truth to suppose that the bacteriæ produced a poison of a chemical action, like the fungus of rye produces ergotin, or to consider the bacteriæ as the *carriers* of the contagion, which is adhering to them and has been contained in the mother liquid. The fundamental proofs of Pasteur are considered by Hiller weak. It is said that some physicists, like Helmholz and Hoppe-Seilor, had declared of late to be in favor of the views of Liebig of the conception of a chemical action, transferring a process of decomposition of protein matter to other substances also capable of becoming decomposed; that there were existing fermenting processes and also putrescent changes of organic substances without the presence of organisms! Billroth, Hiller, and Hoppe-Seilor had observed great masses of bacteriæ in urine, before it had become alcalic and without causing a decomposition of the urea; yet it is even mentioned that urine might contain carbolic

acid (!) and that it did not become putrescent, notwithstanding the presence of great masses of the so-called organism of putrefaction. Equally uncertain have been considered by these critics the anatomical facts. The best observers, it is said, will frequently find it very difficult to discriminate between those minute ball-like forms of vegetation, met with in the human organism of such great variety and the fine corpuscles of protoplasm, or other deposits of albuminous and oily molecules. In short, said Hiller, there existed no justification to believe that all what had been considered to be micrococci, or bacteriæ, were such in reality. Yet the opposition is not at an end here. Panum is said to have given proofs beyond a doubt, that the septic poison could be isolated from the bacteriæ, and that the liquid might act poisonous, after the bacteriæ had been destroyed in it; and it has been considered of great importance to show the presence of masses of vegetation in the healthy body, in the absence of all infectious diseases, and Cohn and others have even calculated that a grown person would daily inhale of mould, yeast, shizomizetæ, etc., over 1000 of living spores and germs, without producing thereby any disease (!) But I hesitate to continue to enumerate all the absurd and abstract objections which have been brought forward to overthrow a theory, or more modestly said, a hypothesis, which we will have to adopt, till at least more and better proofs are offered to consider it further untenable. I will therefore exchange these speculative incongruities and fruitless statements with the experiments lately made by M. Schüller, and which will hardly permit of a doubtful issue.

Though the theory of septic infection, or the relationship between bacteriæ and septic infection, may be considered to be common good of several medical disciplines, the main part of it, says Schüller, belongs undoubtedly to surgery. The question of septic infection is inseparably connected with the yet secret action of those small organisms called bacteriæ, present in all fermenting and putrefying substances. Not to speak of the different objections which, from a scientific standpoint, have been raised against the new theory, the question wins an importance a priori, from the therapeutical consequences which have been brought forward. The improvements made in the treatment of accidental wound diseases, since the opening of the new perspective, are of such immense bearing and importance, that

considered from a practical view, we may turn aside from the hypothetical attacks on the novel conception without further arguments. *Whatever* the final fate of it may be, so much is certain, that from a scientific standpoint, we have a right to congratulate *those* men who have the great merit of having first called the attention to those minute organisms in putrescent matter, even if it should be proved at a *future* day, that these bacteriæ have not either a *direct* or indirect influence on the process of septic infection. Amongst those who deny to these minute organisms the importance attributed by others, are men ranking high in science, as for instance, Helmholz, Hoppe-Seilor and others of no less fame. It rests with us, who have not made any experiments ourselves, to perambulate the field of experimentation and weigh well the arguments which have been advanced, to decide the matter in question, or to arrive at a proper conclusion. It is a logical proceeding, when we observe a certain liquid, containing different agents, to produce a certain effect, to separate these different agents and try *each one separately*, if we want to know if any of them produces the same effect the liquid produced. Since the microscope has shown to us these organisms as constant concomitants of putrescent matter, it is but natural to inquire into their nature. Different methods have been tried to separate these organisms from the liquid which contains them, but this has been accomplished only to a certain degree. Without causing a serious injury to their vitality, they cannot be washed out, or cleaned from the adhering liquid. The only manner to collect them consists in letting the liquid in which they are present rest a few days, when they will form a separate layer. From the experiments of Davaine, Chauveau, Klebs, Bergmann, Kehrer, Cohn, Rindfleish and others it is known, that when that portion of the liquid which contains the bacteriæ is injected subcutaneously into an animal, the animal *always dies* under the symptoms of septic infection, whilst the rest of the fluid body containing *none* of these organisms does not produce the same effect, or if any, only a temporary disturbance and raising of temperature of a few degrees. In order to produce these latter effects, it will even be required to increase the quantity of the liquid to be injected, from three to fivefold of the minute doses containing the bacteriæ. To produce death with the liquid, minus these organisms, can only be succeeded in with small animals, like frogs, and even here

only with comparatively large doses. This experiment apparently proves, that septic infection must be attributed to the bacteriæ. Whatever the opponents of the theory advanced here have said, they are unable to deny the fact, that whilst the unseparated *putrid* liquid acts as a deadly poison, the separated components, when tried separately and in equal doses, act very differently. Even Billroth, though he still denies to these organisms a direct action in septic processes, submits that bacteriæ may play a most important part in it. Though we do not believe we err, if we consider these organisms the originators of septic processes, another question to be decided consists in the modus operandi, their mode of action in the animal system. Some consider their action to be a mechanical one, explaining it as a working through of the tissues, others as a chemical one. In being absorbed and having entered the circulation, they may induce by their own elementary separation a decomposition of the circulating fluid, which will act as a poison. To both modes of action we may add the views presented by Billroth, who considers these organisms only as the carriers of a poison, which he has named *zymoid* and which (by a kind of katalytic action ?) may produce fermentation in the circulating fluid. The most eloquent defender of the mechanical action of these organisms, we find in Hueter. In transplanting diphtheritic membranes from man into the muscles of animals, whereby a muscle-diphtheritis is produced, the spectacle thereby observed was indeed of such a character, says Schüller, as to lay near the idea, that the pernicious action of the bacteriæ consisted in a mechanical working through of the tissues. Another similar observation Hueter made in a case of hospital gangrene. Meeting besides in his diphtheritic patients and in the blood of infected animals the same organisms, he thought that the interruption in the circulation, the general severe disturbance in the system, and finally even death might be produced in that manner. But a chief momentum, to decide the mechanical action of these organisms, lies in the question—*if bacteriæ are able to wander through the walls of the blood-vessels, or if they can enter the interior of blood-vessels from outside.* Experiments lately made by M. Schüller on animals, have decided that question negatively. He injected infected blood, containing coco-bacteria septica (the round or ball bacteria), in great masses into a vein; the vein laid bare, was ligated above and below, leaving about one inch

of the vessel free, from which part the blood was drawn with a fine syringe and the vessel was refilled with putrid blood. An examination of the blood taken from another part of the animal six days later, did not prove the presence of bacteriæ, whilst when the ligatures were afterwards removed, so that the putrid blood enclosed in the vessel could enter the circulation, the death of the animal soon took place. This delicate experiment, repeatedly tried, does not sustain the views that the bacteriæ penetrate the walls of blood-vessels. In order to meet the question about the resorption of putrefying substances, Schüller also made a number of experiments on smaller animals. The results obtained by these well executed delicate experiments prove beyond a doubt, that the infecting substances are to a great extent, if not exclusively, brought into the circulation by resorption through the lymphatic vessels, and that the infection depends on the corporeal elements, the bacteriæ, contained in the septic fluid. In repeating these experiments on larger animals, on rabbits and dogs, Schüller had ligated the thoracic duct before he made the injection, and corroborated thereby the results obtained on smaller animals. To sum up: it has been proved, that in warm-blooded animals the cardinal symptoms of septic infection depend on the presence of bacteriæ in the circulating blood. The septic infection being always absent, if the resorption of the bacteriæ and their being transferred into the blood was prevented by an occlusion of the thoracic duct, but appeared when their admission into the circulation was not hindered. The continuation of life in these animals, after the subcutaneous injection of putrid substances, depended on the proper ligation of the thoracic duct. In addition I will remark here, that one of the main symptoms of blood poisoning, by injecting putrid substances, consists in the obstruction of the circulation, mainly produced by a conglomeration of red blood-corpuscles and parts of their decompositors (what Hueter has called globular stasis), and probably also in a solution of the hæmoglobin. But we do not assert having exhausted the sources of infection, and do not feel justified in explaining the disturbance in the circulation exclusively by the alteration of the red and white blood corpuscles. The chemical influences of septic masses may also have an influence on the nervous centres, the central organs. Of what we have learned from experiments, so much seems to be certain, that the pernicious action of the bacteriæ cannot be

explained by their mechanical action, and that we are not justified in excluding other chemical actions taking place in the tissues. On the contrary, such chemical actions have to be considered as the most important causes of the noxious influence of the bacteriæ. To this view of the noxious agency of the bacteriæ we are driven by all of our experiments and observations, and foremost by the alterations produced in the vital fluid, the blood. The swelling of the red blood corpuscles with their final destruction of the hæmoglobin, cannot be explained otherwise than by the supposition, that through the bacteriæ a chemical noxious influence is exercised on the blood (not being able to define the quality of the chemical action, Schüller proposes to use the word *toxic* instead of chemical). Other noxious bodies can only be extant in the blood in a very small degree, since otherwise, when enclosed in a blood-vessel, they would penetrate its walls by diffusion. It is further obvious, that this noxious fluid must be formed through the contact of the bacteriæ with the blood, or it may be even a product of the altered material of the bacteriæ. In the circulating blood it dissolves the red blood corpuscles, and it seems also to produce alterations in the tissues and to cause the exudation of the white blood corpuscles. With the chemical or toxic action of the bacteriæ on the blood, whereby the red blood corpuscles are destroyed and the hæmoglobin is diffused, we may explain the formation of a stasis (the occlusion of the capillary vessels by an adhesion of the red blood corpuscles and the stroma), a characteristic phenomenon of septic infection. Still, notwithstanding all these different alterations we have to confess, that the infection per se is not fully explained yet, or the totality of toxic actions of the bacteriæ in the animal organism exhausted. But when we come to consider the probability of other actions, for instance on the central organs of respiration, on the vaso-motor nerves, etc., we have to acknowledge our ignorance. That blood from septic infected animals should, even in very minute doses, act in a similar manner infectious, as observed in infected animals, we certainly cannot explain exclusively by the dissolving quality of the soluble hæmoglobin on the red blood corpuscles. Amongst the opponents of the views represented here, stands foremost Professor Billroth, of Vienna. Billroth, as mentioned, believes in the presence of a septic element in putrescent matter, his zymoid, and which, he thinks, originates independent of the bacteriæ,

but which, as he consents, may probably be absorbed by them, and on which they may live. But in order to explain the process of septic infection, we need not embarrass ourselves with this hypothesis. We observe septic infection too closely attached to the presence of bacteriæ, to believe that their presence was only an accidental one. On the contrary, from all our experiments we have to consider them as essential elements, without which septic infection cannot exist; and though we might even concede the idea that the bacteriæ under circumstances could produce a zymoid, this supposition is not necessary, in order to explain the process of septic infection. Billroth concedes the possibility of an accumulation of his zymoid by bacteriæ, but objects to their importance in infectious processes. He thereby points to the observation that the bacteriæ may be met with on membranes without producing a diphtheritic inflammation. Without going so far as to direct the attention to the possibility of different kinds of these organisms, I need only point to the probable absence of lymphatic vessels in such cases, which would fully explain the cause of their inactivity, since we know the importance of a lymphatic current, in order to bring these organisms into the circulation. The researches of Schüller become even more important, in applying the obtained results of bacteric action to the local and general wound diseases of men. If the conclusions of the modus operandi of these minute organisms arrived at in animals are correct, then they must also by necessity be applicable to men, where the equal conditions are present. Bacteriæ cannot be developed everywhere (and so may their development be easily interrupted), nor do we see everywhere the conditions for their resorption equally favorable, or in men, invade the tissues in *such masses*, as we have observed them in animals. In smaller numbers they may be overcome in the human system even better than in the lower animals, and they may under circumstances be eliminated, like other poisons, without causing a general intoxication. Besides it may happen, that where bacteriæ have entered the circulation, producing thereby noxious actions, equally so and simultaneously may the other not indifferent substances enter the circulation, changing thereby the character of a disease materially. This indicates, that we are not obliged to acknowledge a general bacteric effect whenever we shall meet these organisms in wound disease, and that we need not try to explain every accidental wound disease

with their presence, but we are certainly not justified to deny their action in the organization of men, when we meet them in cases where all the conditions for resorption are present.

LECTURE I.---OBJECT OF THE COURSE.

Course of Pathological Anatomy and Histology at the "Charity Hospital Medical College" of New Orleans. Session of 1875-6.

By Y. R. LeMonnier, M.D.,

Lecturer on Pathological Anatomy and Histology.

Gentlemen—That branch of medicine whose object is the knowledge of disease is called Pathology. It is a concrete science, or one of application, treating of the disorders which have supervened either in the material disposition of the constituent parts of the organism, or in the acts which these parts are called upon to fulfil. It is divided into three distinct branches. These are, in their established order, 1st, *Pathological Anatomy;* 2d, *Pathological Biotaxia* or *Teratology;* 3d, in the dynamic order, it embraces the study of *Pathological Physiology.*

Pathological or morbid anatomy is the study of the alterations which may take place in the different organs, tissues and component parts of the organism. It comprises the same subdivisions of normal anatomy, and it would be an error *to ignore the connection which exists between the lesion of one part and the normal state of the corresponding part at its different ages.* Hunter, Bichat, Broussais, are the authors of this manner of proceeding, the only true logical one. Therefore morbid anatomy derives its classification from normal anatomy, and is a study of the excesses, diminutions and aberrations of the form, structure, etc., of the latter. We must, on the contrary, reject the system established by Laennec and Mechel, and adopted by most pathological anatomists of our day, who think they have obtained useful results while searching in morbid anatomy for a method sui generis. They consider it as forming a science by itself, with a classification based on the lesions considered independently of the organs where found, as if an alteration does not suppose a substance which is altered and a spot where this phenomenon takes place. This school proclaims to be purely anatomical, and concentrates itself upon the *examination of the*

forms in order to trace, by a careful dissection, the best description of these abnormal products. But it thus forgets that form is subordinate to the elementary anatomical composition, and that a description of the form, of the color, and of the consistency, leads to nothing, if we do not know to what these characters are due.

Hence, gentlemen, the necessity of a thorough knowledge of normal anatomy, in order to study fruitfully morbid anatomy.

The anatomy of the diseased human body, when applied to medical jurisprudence, is called *Forensic Anatomy*. "Legal medicine," says Prof. Amb. Tardieu, "is the application of the medical sciences to the study and solution of special questions propounded in the name of law and of justice."

Let me, gentlemen, give you an example of the intimate connection which exists between forensic medicine and pathological anatomy. The latter teaches us that old age brings on certain changes in the human body—pathological, physiological changes. One of these is a rarefaction of the neck of the femur from senile absorption of its cellular structure, resulting in a hollow filled with marrow. The neck becomes so weak that it is impossible to bear the weight of the body or resist muscular contractions, breaks, and the man falls.

This rarefaction is greater in the neck of the femur than in any other portion of the bony tissue, both in the young and old, et cœteris paribus, we account for the frequency of these fractures in old age.

Now, a man of 60–70 years of age is brought to you with a fracture of this kind, said to be the result of a fall; he accuses a passer by of being the cause of this accident, and has him arrested. The latter denies the accusation. You are called upon to decide in your capacity of a physician. You examine the patient; you find no signs of contusion or of a fall on the region of the hip. You decide that "the man fell because the bone broke; the fracture therefore caused the fall, and not the fall the fracture." This decision is based upon a knowledge of pathological physiology of old age. The accused is released.

Pathological Biotaxia or *Teratology* is the study and classification of monstrosities. As these are only the result of perturbations in the development of organs prior to birth, they constitute diseases of an embryonic origin. Their description, according to the principles of the comparative method (called the natural

method, in biology), connects teratology to pathological anatomy on the one hand, to pathological physiology on the other, and leads to the classification of monsters according to the laws of biotaxia. This classification, which is pathological biotaxia, has been to the present day the almost exclusive aim of the learned, who have studied the subject. Yet the morbid anatomy and physiology of monsters are a field of important researches. The satisfactory results obtained by comparing monsters to normal beings, may be of great utility to physicians as a guide, in their future conduct, in describing diseases posterior to birth, inasmuch as these, like others, necessitate a constant comparison with the normal state.

Pathological physiology, properly speaking, is *symptomatology;* but for the sake of direct application to the medical art, symptomatology is made to include the examination of divers *anatomo-pathological* peculiarities already visible on the living body, such as stains, petechiæ, elevations, excoriations, etc.

Within the last twenty years great developments have taken place in pathological physiology. The great progress which medicine has accomplished under this move has turned the mind of man to researches in experimental physiology, in their application to the solution of pathological problems. On the other hand, physiology has often obtained from clinical researches what it had in vain demanded of vivisections: palpable proof, gentlemen, of the indissoluble tie existing between physiology and pathology.

This move, as time rolls on, becomes more active and more general. The eyes are bewildered at the results already obtained. Every one sees in this mode of progressing an inexhaustible and most fertile source for science and the healing art. Therapeutics implies a knowledge of *pathology*, to which it demands an incessant and minute application. In fact, the therapeutist is supposed to have discovered the cause of the disease (*etiology*), to have examined the symptoms (*symptomatology*), and established, by his inductive reasoning, the diagnosis and prognosis (*semiology*).

Besides the above three principal branches, pathology is again subdivided into *cellular*, *surgical or external*, *comparative*, *general*, *internal or medical*, and *special* pathology.

Cellular Pathology. That part of general pathology which treats of the alterations of the anatomical elements. This term,

cellular, is derived from the word *cell*, employed synonymously with the term *anatomical element*, from the supposition, confirmed by observation, that in animals, as in vegetables, all the anatomical elements are cells, or are derived from the metamorphosis of a cell.

Surgical or External Pathology. That branch which treats of diseases, lesions, or deformities, which require an operation as a curative means, whether it be performed with the hands alone or with the hands armed with instruments.

Internal or Medical Pathology. Those maladies which are particularly curable by the means derived from materia medica and hygiene.

Comparative pathology is the study of the pathological phenomena which take place in different species of animals, and even of vegetables. Evidently, the nearest the species will be to man, the greatest will be the interest and extent of the pathological comparisons. If pathology should be studied after it has been subjected to the modifications brought about by climates, and those caused by changes in social positions, so should it be studied in the whole animal kingdom. It is an indispensable perfection to human pathology. Moreover there are interchanges of diseases between man and animals. If vaccination is an example of the benefit to be derived from these transmissions, hydrophobia and glanders are calamities. Comparative pathology is a field as yet but poorly cultivated: by Rayer and Heusinger was it, first, cleared with success. Its teaching, vainly condemned, was the consequence of the teaching of *comparative physiology*, which institution was recognized a necessity, shortly after the foundation of *comparative anatomy*, by Perrault, Daubenton, Vic Azyris and Cuvier, and of *general anatomy*, by Bichat. On the documents furnished by the latter (general anatomy) and by comparative pathology general pathology bases its most precious data.

General pathology is that which embraces the cause common, if not to all diseases, at least to the greater part of them, exposes the most general facts of medical science, thereby establishing a technical language indispensable to the clear and methodical exposition of particular facts. Studying the lesions common to anatomical elements, then to the tissues similarly composed, and the perversion of their functions, it leads to the determination of the origin and nature of these lesions. In so doing it points

out the general treatment to be instituted in diseases of a similar origin and nature, whatever be the organ in which they reside.

Special pathology, on the contrary, is that branch which studies one by one the different kinds of diseases to which mankind is subject. It differs from what is to-day called *specialism;* a *specialist* is one who devotes his time to the study of a particular affection, and to the practice inherent to that malady. On the contrary, *special pathology* embraces the field of general pathology, divided into as many chapters as there are diseases.

Histology. The knowledge of the elementary structure of plants and animals dates back two centuries. It was first mentioned by Marcellus Malpighi (1628–1694), and Antony de Leeuwenhœk (1632–1723), when, for the first time, a very plainly-constructed microscope became the means of observation. For nearly two centuries the use of this instrument remained in an embryonic state. It was not until 1801 that the genius of the immortal Bichat placed general anatomy on a level with the other branches of anatomy. Not that he made important histological discoveries, but what no one had done, he realized: he brought together the accumulated materials of his predecessors, and viewing these in their relation to physiology and medicine, rested histology on a solid basis. The *general anatomy* of F. X. Bichat (Paris, 1801) is, in fact, the first scientific work on histology, and is therefore of great importance to science. But what gives to this work a greater significance is that, not only are the tissues morphologically mentioned and minutely described, but their relations, to their physiological functions and pathological states, are examined in all their details.

From this to the present day, thanks to the zeal of observers, science has realized immense progress. To-day, *histology* is the *science of the tissues;* it is the exact definition of that new branch of normal and pathological anatomy. Its advancement is due especially to the high perfection attained in the manufacture of microscopes, and secondly to the employment, tried for the first time in our days, of various reagents, by means of which some of the organic parts of the animal economy are dissolved or preserved, rendered transparent or opaque.

Nothing is easier, gentlemen, than to give you an example of what histological researches are. Leaving aside the minuteness of the microscope, I shall take a coarser example in the shape of india rubber, muslin, velvet and tapestry. Upon examining the

india rubber, I see that it is not, properly speaking, a tissue, for it has no structure. It is, to use a technical term, an *anhistous* membrane, i. e., homogeneous. Muslin and velvet, on the contrary, are tissues, having a structure, with silk threads as their *elements*. These threads are so arranged and interwoven, as to give muslin in one case and velvet in the other, two tissues, with a common element, but a different organization. Tapestry, on the other hand, is a complex tissue, composed of silk, wool, gold and silver threads. Such, gentlemen, is the composition of our tissues. Some are anhistous membranes, some are tissues of a single element, others are of a complex structure. Histology, then, is the study of the component parts of the tissues and of their arrangements. The study of the latter shall naturally precede that of the former. I shall go from the simple to the compound, from the known to the unknown.

Histology, like pathology, like anatomy and physiology, has its divisions and its subdivisions. As these are about the same in each, I refer you to what I have said above on the divisions of pathology.

A single example will suffice, gentlemen, to show you the importance of histology in the practice of medicine. The malignant carbuncle we all know to be a disease affecting both man and animals, and generally fatal. What its exact pathology is, has always remained a secret until lately. It was but a few years ago that Mr. Davaine, a member of the French Academy of Medicine, for the first time, discovered with the microscope, *bacteriæ* in the liquid of the malignant pustules. Later, he concluded that these animalcules might be the cause of the disease. You readily perceive the good to be obtained from the discovery. With his microscope in hand, he pursued his studies on man and animals, injecting the virus in the latter, and examining their blood, in which he again found these bacteriæ. This result led to the conclusion, that whatever would destroy these animalcules might become the curative means. Accordingly different substances, iodine, carbolic and sulphuric acids, ammonia, caustic potash, etc., were placed in contact with the blood of carbuncled patients or the liquid from the pustules. The result was observed with the microscope, and iodine proved to be the most powerful substance in killing these bacteriæ. A solution of one part of iodine to 12,000 of water, placed in contact, killed these

animalcules. Subcutaneous injections of a solution of iodurated tincture of iodine were then tried as a curative means in this disease in man, and to-day we have on record several successful cases.

Luck and quackery have nothing to do in this new mode of treating the malignant pustule. You see in it, gentlemen, the result of ideas exclusively scientific. It is the result of the application of histology to pathological researches. Is not this what happened after the discovery of the acarus in itch, and of the vegetable growth in scald head? As soon as histology had made known the etiology of these diseases, their pathology and treatment became known.

After searching with the naked eyes, we fall back on the microscope for further discoveries.

Thus, gentlemen, you see the close analogy existing between pathology and histology, and the necessity of their knowledge to become good practitioners, of either medicine, surgery or midwifery.

LECTURE II.

AUTOPSY (ANATOMY).

Gentlemen—This word, from ὄψις, a view, and αὐτος, one's self, seems to have been formed by the empiric school of Alexandria, to express the act of looking by one's self, and was employed in opposition to the word *tradition*, which meant notions transmitted to us by our predecessors. In our days, autopsy means the operation by which the different parts of the body are subjected to our *direct examination*. It is therefore employed synonymously with the word *necroscopy* (from νεκρός, death, and σκοπεῖν, to look), *necropsy* (from νεκρός and ὄψις), and even with *the opening of the cadaver*, though this last expression, properly speaking, is only the preliminary step of an autopsy.

To make an autopsy, therefore, is *to place under the eyes of the physician the deep seated organs*, with the view of allowing him to verify, *de visu*, their lesions and alterations, and thereby deduct from this examination solutions to doubtful questions, relating either to pathology or forensic medicine, the starting point of pathological anatomy, which constitutes the basis of the science of disease, an autopsy comprises the *ensemble* of the operations by which we obtain an exact knowledge of the condition of the organs and their tissues. Besides the opening of the cadaver,

or of the splanchnic cavities, it embraces therefore the removal of the organs, and the different preparations to which they are subjected, to facilitate their examination with the naked eyes, and their study with the microscope and chemically. As these preparations necessarily vary according to the nature of the different tissues and their alterations, I shall mention them in detail, as I proceed with the pathological anatomy of each organ in particular. To day, I shall teach you the rules to be observed in opening the cavities, and in the removal of the organs from the body. As to the condition of the parieties of these cavities, and that of the extremities, the general rules of dissections laid down, for the study of normal anatomy, are equally applicable to the study of the lesions of these parts.

In making an autopsy, when we know what disease caused death, or it we have observed the patient during life, we sometimes content ourselves with examining the organs which are supposed to be the seat of the lesion. This is a great error, as in so doing, we often lose the opportunity of verifying very interesting alterations, connected or not with those causing death. We should therefore make a post-mortem examination as complete as possible, i. e., open all the splanchnic cavities, and examine all the organs. The result should be recorded at the time of the inspection. This manner of proceeding, gentlemen, is absolutely indispensable, when we have to deal with a subject whose cause of death is unknown, as I will explain to you in our next lecture, on the medical jurisprudence of an autopsy.

(a) *Instruments.* The *instruments* necessary in making an autopsy are more or less numerous, according to the extent and nature of the anatomo-pathological and histological researches to be made and studied. Those contained in this *autopsy* box have, after many years of service, proved themselves sufficient; they are—

1st. *Strong scalpels* of different sizes, straight or curved, called cartilage knives, and used to cut the costal cartilages and the resisting soft parts.

2d. *Smaller scalpels* of different sizes and shapes, used for the ordinary and fine dissections.

3d. *Two pairs of straight scissors*, large and small.

4th. *Two dissecting forceps* of different sizes.

5th. *An autopsy hammer*, with a steel handle ended by a blunt hook, with which to remove the calvarium.

6th. *A saw*, with a movable back.

7th. *A double rachitome*, with which two parallel sections of the vertebral column, at different distances, one on each side of the spinous processes, can be made, at one and the same time.

8th. *An enterotome*, for opening the intestinal canal through its whole length.

9th. *A costotome*, for cutting the ribs.

10th. *An insufflator*.

11th *Two hooks*, one single and one double, mounted on handles.

12th. *A grooved director.*

13th. *A metallic catheter.*

14th. *A lever*, to disarticulate or prize up fractured bones.

15th. *Large pins and packing needles*, with which the bodies are sewed up.

16th. *A flexible meter.*

Lastly. *Sponges and a pair of scales and weights*—a four pound scales being sufficient.

(b) *Manner of Proceeding* In opening the different splanchnic cavities, the manner of proceeding is not indifferent. For this reason, in most hospitals a tradition exists, based on a long experience, from the rules of which students rarely deviate, though they cannot always account for the motives which have created it. The cadaver resting usually on its back, I open first the abdomen, then the thorax and neck, next the cranium, and finally the spinal canal. Prior to opening these cavities, a careful and minute external inspection should be made.

This mode of proceeding is actuated by the following reasons: in opening the abdomen *alone*, which is very easy, the body not being jolted its organs are not displaced. These organs and the effused liquids may be studied, in their cavity, in the position in which death has left them. The liquids are not mixed with others, as those from the chest, for example. The diaphragm retaining its normal position, the influence which an effusion or a tumor, of either the abdomen or the thorax, may have on the capacity of one or the other cavity is seen.

In opening the thorax alone, great precautions are necessary not to injure the diaphragm, which would allow the liquids of the abdomen and thorax to pass from one cavity into the other and become mixed.

The abdomen being open, the thorax and neck are next exa-

mined by extending the incision upward; then the head, and finally the spinal marrow, when the body is turned on its anterior surface, without fear of displacing the thoracic or abdominal visceræ. When the spinal marrow is to be examined, its inspection should follow that of the brain.

Mr. E. Goubert says, "though we should *commence by opening the abdomen*, nevertheless, in most cases, the two cavities of the trunk being open, the thoracic organs are first examined, next the digestive, then the genito-urinary, followed by the opening and the study of the head and vertebral column."

The heart should be examined in its place before cutting through the vessels at its base. If the liver be removed, the inferior vena cava and portal vein are opened; the blood which distended these vessels and the right cavities of the heart flows into the abdomen, and leaves these organs in a state of flaccidity, different from what they were when full. Of course a ligature, placed on the inferior vena cava below the diaphragm, would obviate this, but it is useless to complicate the autopsy with operations which cause a loss of time.

In my opinion, therefore, *the best manner of proceeding in making an autopsy*, is the following:

1st. Open the abdomen, then the thorax and neck; examine in place the organs contained in the cavities; 2d, remove the organs of respiration and the heart, then those of digestion, next the genito-urinary organs; 3d, open the cranium and rachis, and remove the nervous centres; 4th, finally, examine the limbs.

A. *Opening of the Cavities.* 1st. *Opening of the abdomen and thorax.* I generally open these at the same time, unless there be an effusion in one or the other cavity, or both, or some special reason for opening them separately.

The cadaver lying on his back, with a strong scalpel two oblique incisions are made, one on each side, extending from the sterno-clavicular articulations to the anterior extremity of the last rib, and from this to the anterior superior spinous processes of the ilii. These incisions are made over the sterno-costal articulations, through the whole thickness of the soft parts, down to the costal cartilages. Inferiorly, they are united by a transverse semi-lunar incision, passing over Poupart's ligaments on each side, and over the symphysis pubis. The abdominal incisions are made through the whole thickness of the parieties and also through the peritoneum, taking care not to injure the small or

large bowels, which would allow excrementitial matters to run out. The abdominal flap is then raised, and with the costotome or cartilage knife the costal cartilages are carefully cut at their union with the ribs, taking care not to injure the pleura or thoracic organs. The clavicles are next disarticulated from the sternum. After dividing the anterior insertions of the sternum with the diaphragm, it is raised, its adhesions with the cellular tissue of the anterior mediastinum, pleuræ, lungs or pericardium, destroyed, taking care not to injure the visceræ. Here, I either turn, over the face and neck, the sterno-abdominal flap thus obtained, or, uniting the lateral incisions by a transverse one at the base of the neck, remove it. You now have exposed to view, in situ, all the organs contained in the abdominal and thoracic cavities. When I wish to examine the organs of the neck, I continue the lateral incisions, on each side, to the inferior maxillary bone, and here unite them by a transverse incision, or turn the flap over the head. Instead of making two lateral incisions, only one may be made, commencing at the superior end of the sternum down to the xiphoid appendix. Here, one on each side, descending to the ant. sup. spinous process of each illium, the two thoracic flaps are dissected beyond the chondro-costal articulations, and the cartilages dissected as before. The abdominal flap is turned down over the pubis. Again, one straight incision is made from the upper border of the sternum down to the pubis. These two last procedures, in simplifying the incisions, facilitate the suture of the body after the autopsy.

When I wish to expose more fully the organs contained in the thoracic cage, I make a transverse incision over the clavicles, and dissect the flaps backward beyond the costal cartilages, dividing the ribs and clavicles with the costotome or the saw, taking care not to injure the thoracic organs.

2d. *Opening of the Cranium.* After placing a block under the nucha, the hair is cut close, or what is better, the head is shaved, when the scalp is to be examined. Then, according to Chaussier, I make two incisions, crossing each other perpendicularly on the top of the head, the first from the root of the nose to the external occipital protuberance, the second extending from one ear to the other. In making these incisions, the whole thickness of the scalp is cut, down to the bone. Four triangular flaps are thus obtained, which, when dissected down to their base, leave the whole surface of the cranium exposed.

This is the best way of denuding the skull, for a clinical demonstration. When I have a subject which is to be buried by the friends, in order to dissemble, as much as possible, all traces of an autopsy, I first part the hair across the head from one ear to the other, and here make an incision through the scalp.

The calvarium is now removed, by a circular incision above the supra-orbital ridges, the zygomæ of the temporal bones and the external occipital protuberance. This section I make with the saw, when I wish to verify the condition of the bone in connection with a fracture, a tumor, syphilitic necrosis, etc.; otherwise I use the hammer, which is more expeditious. By striking lightly, but smartly, the bones are fractured all around, without injuring the dura mater or the brain tissue. In spite of all precautions, these tissues are often penetrated by the saw. Then, passing the hook of the hammer under the frontal bone, the left hand pressing against the root of the nose, with a sudden jerk the calvarium is wrenched off. Adhesions generally exist between it and the Pacchionian bodies.

When I wish to remove the cerebro-spinal centres entire, before removing the calvarium, I turn the body over on its anterior surface, and proceed to the removal of the spinal cord. Or else I first remove the brain.

Having examined the external appearance of the dura mater, the state of its vessels, the superior longitudinal sinus, which may be opened to observe its contents, two antero- posterior sections of the dura mater are made, one on each side of the sinus, from the crista-galli to the cerebellum. The falx is then carefully removed from the process and turned downward. Turning down, on each side the dura mater, the brain, covered with the pia mater, is left exposed.

3d. *Opening of the Spinal Canal.* This is the most difficult part of an autopsy, and for this reason is generally left untouched, except in cases where a lesion of the cord or its membranes exist.

To open it, the body is placed on its anterior surface, with a block under the thorax and one under the abdomen, with its head dropping over the edge of the table. An incision is made through the skin and muscles, along the entire length of the spine, from the external occipital protuberance to the coccyx The soft parts are now dissected off on each side, and the vertebral column exposed. To open it, the rachitome is used, or the saw and chisel, or a sharp chisel, or strong cutting forceps, as

those of Ludovic Hirschfeld, with which the laminæ of the spinous processes are severed, close to the articulating processes. These are then removed from below up, and with the scalpel all adhesions are cut. The posterior surface of the cord is then exposed, enveloped in its membranes. I generally remove the cord in its membranes, to avoid injuring it.

B. *Removal of the Organs.* Rarely, gentlemen, is the examination of the organs in their respective cavities sufficient. In the immense majority of the cases, their removal is necessary for the inspection of their surfaces, for obtaining their weight, and subjecting them to the different preparations necessary for a thorough study of their textures and alterations.

1st. *Thoracic Organs.* The lungs, heart, and thymus in the infant, are generally removed together; the larynx and thyroid body are often removed with these.

The hand is first passed between the lungs and thorax to destroy the adhesions that might exist; they are sometimes so solid as to necessitate the use of the scalpel. The lungs being set free, the trachea is removed, either with the larynx or severed below it, and drawn forward and downward, its adhesions posteriorly and laterally being cut loose. Near its bifurcation, the vascular branches coming from the arch of the aorta, the descending or ascending venæ cavæ, are severed, and all the thoracic visceræ removed.

2d. *Abdominal Organs.* A ligature being placed across the cardiac orifice of the stomach, and one across the rectum, the intestinal tube is cut below the one and above the other. Sometimes one is also placed across the pylorus to retain in the stomach its contents. The suspensory and lateral ligaments of the liver are next severed. Then, passing the left hand under the diaphragm, the connections of the liver, stomach, pancreas and spleen, to the abdomen, are either destroyed with the fingers or cut. Before doing this, a ligature may be thrown across the inferior vena cava and portal vein, if it is desired to prevent the effusion of blood in the cavity. The adhesions of the mesentery to the vertebral column are now severed, then those of the colons and sigmoid flexures, after which these organs are removed, *en masse*, from the abdomen. Lastly, the extraction of the kidneys and ureters: that of the former is easily done, by destroying their cellular adhesions with the fingers; the latter must be dissected, down to the bladder. It is better to remove one-half of

the ureters with the kidneys, the other with the bladder, and preserving thereby their connections to these organs.

3d. *Pelvic Organs.* To completely remove the *organs contained in the pelvis* in connection with the *external genital organs*, it is necessary first to divide the anterior parieties of the pelvis. To do this, two incisions are made through the soft parts, at an inch and a half to the right and left of the symphysis pubis, passing down, externally to the scrotum in man and to the labia majora in woman, internally to the tuberosities of the ischia, and ending on each side of the apex of the coccyx. The horizontal branch of the pubis and ascending branch of the ischium are then sawed across. With the left hand the rectum and other organs are pulled forward, while with the right hand and scalpel their adhesions are destroyed. In doing this, I follow the concavity of the sacrum and coccyx; here I plunge the scalpel through the soft parts of the perineum, and by a transverse cut unite the two lateral incisions. A few strokes of the scalpel here and there, aided by a little traction, and I remove the contents of the pelvis, with the pubic arch and external genital organs attached to it.

4th. *Cerebro Spinal Centres.* Having exposed the convex surface of the encephalon, and removed the dura mater, the falx is carefully removed from its insertion to the crista-galli and turned down. Supporting the anterior lobes of the brain with the left hand, with the right the cranial nerves and vessels at the base are sectioned with the scalpel or scissors. The sections are made at the entrance of the nerves, in the foramina. Care should be taken not to tear them off. The pituitary membrane is cut at its attachment to the pituitary gland, and the tent of the cerebellum at its insertions to the margin of the petrous portion of the temporal bone, the transverse ridge of the occipital bone and the clinoid processes. By pulling gently backward the anterior lobes, the medulla oblongata is fully exposed, and should now be cut, in the rachidian canal, as low down as possible, and the brain thus removed. To do this, a narrow-bladed scalpel is plunged in between the bulb and the anterior border of the occipital foramen, and the cord cut across.

In removing the *spinal marrow*, enveloped in its meninges, I clip with the scissors the spinal nerves, as far back as possible, in the inter-vertebral foramina. Generally a few adhesions remain to be destroyed on its anterior surface, especially at the cervical and lumbar regions.

LECTURE III.

AUTOPSY (MEDICAL JURISPRUDENCE).

Gentlemen—To-day I will entertain you on the subject of autopsies in a medico-legal point of view; here the meaning of the word approaches to its true etymology of *an inspection by one's self*, and differs from its meaning anatomically speaking. Here, it is an opening of the cadaver, and a study of the normal or pathological condition of its organs. Here it is not only this, but also a view, an exploration, by a physician, of that cadaver, internally and externally, and all the necessary explorations to satisfy justice.

An autopsy is to the cadaver what the physician's *visit* is to the patient. It is the most difficult part of medical jurisprudence, and demands a thorough knowledge of medicine, surgery, chemistry, law, and a great practical experience,

This operation is of recent date. A natural repugnance, respect for the dead, and above all the ignorance of anatomy, were the reasons why medical jurisprudence remained so long a dead letter. In the days of antiquity, an external inspection of the body of the murdered person was all that was known. With the Israelites, the judges descended to the spot, to inspect the corpse and measure the distance to the nearest town, which was made to pay the expenses of the expiation. It is fair to presume that men of experience, not entirely ignorant of medical notions, so often applied by the laws of Moses, did obtain from these examinations the means of discovering a crime, and in this lies the origin of the verdict of experts in cases of murder. Gericke maintained that necropsies were performed in Rome "apud Romanos in usu sectionem cadaveris fuisse." This is probably an error, as historians mention nothing beyond the exposition of the body on the public square. During the middle age, the bodies were examined to ascertain whether or not the blood flowed in the presence of the murderer. Hortius, in 1606, treats of the *cruentation* of the cadaver. Before being adapted to legal researches, autopsies were made to study anatomy. We know not positively, prior to 1532, when they were first made for judiciary purposes. At that date (1532), in Germany, under the Caroline

Constitution, article 149, we see that "no individual, dying of an unnatural death, was buried before the cadaver was carefully examined by surgeons, who made a report of their examination." From this we see that, under the law, the autopsies increased. The autopsies on the bodies of Charles IX., Henry III., Henry IV., were made, but it was some time before the necessity of this operation was recognized, first by physicians, then by jurists. In 1723, Leysser published a treatise on the "*de Frustanea Cadaverum Inspectione.*" It was then that physicians understood the necessities of autopsies. In 1790, Guérin published a medico-chirurgical treatise on the same subject. Who, to-day, doubts the necessity of medico-legal autopsies in the verification of the cause of death? It is the basis of all medico-legal researches, and even in cases of an undoubted cause it furnishes additional evidences of great value. Medical jurisprudence keeps up with the progress of anatomy and pathology, which increase the surety and extent of the limit of this mode of investigation.

The public safety, the interest of the law, demand that an operation of such importance be not neglected. An autopsy is *medical* when made for a scientific purpose, *medico-legal* when required by law. In making an autopsy in either case, the physician is expected to know the regulations and precautions to be taken. Their neglect engages his responsibility.

In France, a delay of twenty-four hours is required before a *medical autopsy* can be made. The Code Napoleon, Art. 77, says: "No inhumation shall be made prior to 24 hours after death, except in specified cases, provided for." The sanction of this rule is Art. 358 of the Penal Code, which says, "All contraventions to the laws and regulations relating to inhumations, shall be subject to imprisonment of from from 6 to 60 days and a fine of from 16 to 50 francs." By ordinances of the Prefect of the Seine, dated the 6th Sept., '39, and the 21st Jan., '41, this delay takes place from the time when the declaration of death was made. The law about this delay of twenty-four hours, before a medical autopsy can be held, or the body buried, exists over the greater part of Europe. In this city, no specified time exists before which a medical autopsy can be held or a body interred, but laws do exist concerning the time within which bodies shall be buried and how to proceed to their burials. These laws are to be found in the Revised Statutes (1870). An ordinance relating to cemeteries and interments, reads as fol-

lows: Art. 159. (1) "That no keeper of any burial ground within the limits of the city shall receive or bury any corpse unless the bearers or carriers of the same shall deliver to him the certificate of a licensed physician, or of a magistrate, or of the coroner, containing a statement, specifying as nearly as possible the death, name, age, birth-place, sex and color, and setting forth the location of the house or place whence said corpse was taken for burial, giving the name of the owner or lessee of said house or place, and the number of street where said house is situated, and if there is no number, as close a description of said house as possible; and should any keeper of any burial ground refuse or neglect to perform any of the duties required by this article he shall be fined the sum of fifty dollars."

Art. 172 (14). "It shall be the duty of every person, at whose domicile any person shall have died, to cause the same to be buried within forty-eight hours after his death; and any person offending against this section of this ordinance shall pay a fine not exceeding one hundred dollars for each offence."

From the above ordinances, you see, gentlemen, that no mention is made of medical autopsies. This is a question which is left to the friends and physician to decide upon, whether or not it shall be made, and at what time. In no instances whatever is the physician authorized to force a *medical* autopsy on the family against their consent. In hospitals, as a rule, autopsies are performed, unless the bodies are claimed by the relatives for burial, in which case permission must be obtained. It is generally granted; yet I have met with cases in which, through the obstinacy of friends or religious ideas, I have been deprived of my pathological researches, after carefully treating and observing a patient. This is very unjust. It is a misfortune to be poor: but when one is so poor that he is obliged to apply to a charitable institution for assistance, this institution should not be deprived of the right of making autopsies.

The sooner an autopsy is made after death the better, and the slightest will be the post-mortem changes. I have made necroscopies two and three hours after death. Besides, this delay of twenty-four hours is inapplicable in a country like this, where, in six or eight hours after death, bodies have sometimes been seen in such an advanced state of decomposition that a hasty burial was demanded.

In Europe, so great is the fear of being buried alive, or having

a hurried death, through whatever cause, that in France, a Parisian doctor was condemned for having, for a scientific purpose, opened the trachea of a child, six hours after death, to remove therefrom a pea which had caused asphyxia. Here the spirit of the law clearly shows itself to be opposed, during the twenty-four hours that follow death, not only to autopsies, but to all operations which might, by themselves, cause death or mutilate. Hence the delay of twenty-four hours, considered as being the longest time after death during which all apparent signs of life can last. And yet, we have heard of parties buried alive more than twenty-four hours after a presumed death!!!

This, gentlemen, very naturally brings forth the following question, "Have we a sure sign of death—if so, what is it?" The Marquis d'Ourches, a noble-hearted Frenchman (who had been twice very rich and once very poor), fully appreciating the gravity of *premature inhumations*, bequeathed the sum of 25,000 francs ($5000) to be distributed as follows: 20,000 ($4000) to the discovery of a sure and simple means of determining death; this means to be so simple that the *poor uneducated countryman might apply* it. The remaining 5000 francs ($1000) to the discovery of scientific means.

The contest was open to the world. Contributions from candidates came, not only from Europe, but from the United States (Chicago), China, and Asia, showing how great was the interest taken.

The result was that the prize of five thousand francs for the discovery of scientific means was divided as follows: five hundred francs ($100) to the discoverer of the sign which consisted in the difference existing in the *cauterization* of the pulp of the fingers during life and after death. During life blisters are formed, containing serosity; after death they contain steam. A second prize of five hundred francs to the discoverer of that *grayish* or *dusky* spot which shows itself, prior to decomposition, first at the external portion of the sclerotic, prior to its total invasion. As positive a sign of death as this one, is the *general discoloration of the fundus of the eye after death.* During life it is of a dark red color, and after death of a yellowish white. A third prize of two thousand francs to the author of researches made on the *livid patches* found after death. The author concludes that they are a sure sign of death, as they were found in every case on fifteen thousand cadavers. Another important

fact is, that they appear shortly after death. Finally, two prizes of one thousand francs each, for researches on the *temperature* after death. The lowest temperature compatible with life has generally been supposed to be a fraction over 54° F. (30° C.), until last year, when a woman was brought to the Pitié Hospital (Paris), in the wards of Dr. Michel Peter. She was frozen unto death, with a temperature of 46° 8′ F. (26° C.) only, and yet by artificial heat she was recovered. This is the only case on record with such a low temperature where life was saved.

No one proved competent enough for the prize of 20,000 francs. Prof. Weber, of the chair of medical jurisprudence, at Leipsick, obtained a very honorable *mention*, for his easy means of recognizing death. His theory was, that if a few hours after death any portion of the skin was rubbed with a wet brush, it infallibly assumed a parchment-like appearance. He reported this as an infallible means in recognizing death; unfortunately it did not prove to be so in the hands of the judges, or he would have obtained the 20,000 francs prize.

This does not mean, gentlemen, that prior to this competition no positive signs of death existed. We have many of them, too numerous to be mentioned here.

An autopsy being decided upon, the presence of no public officer is required, in this country, while making it. But in no cases where a violent death is suspected—an abortion or poisoning, for example—should a physician proceed to an officious autopsy. The best intent physician would engage his responsibility in thus acting. His duty is, the moment he suspects a violent death, to inform the law.

A *medico-legal autopsy* differs from a medical one in this, that it is made under the requisition of a competent authority. The city ordinances and State laws on the subject are as follows:

City Ordinance Revised Statutes, 1870—An Ordinance relating to Cemeteries and Interments.

Art. 160 (2). "Whenever the keeper of any of the said burial grounds shall discover that the formalities required by this ordinance cannot be complied with by the bearers or carriers of the said corpse, or by any person or persons bringing the same for burial, he shall immediately inform the coroner thereof, in order that said officer may proceed to ascertain whether any crime has been committed; and for any neglect to comply with this provi-

sion, the said keeper shall be fined, as provided for in the preceding section."

The laws of the State of Louisiana, Revised Statutes, 1868, on the subject of Coroner, says:

"Sec. 651. The Coroner shall be a conservator of the peace.

"Sec. 653. It shall be the duty of the Coroner, on being informed of the violent death of any person within his jurisdiction, the cause of which is unknown, immediately to proceed to view the body and make all proper inquiry respecting the cause and manner of the death; and if from such inquiry he shall be satisfied that no person has been guilty of causing or procuring the death, and that there are no suspicious circumstances attending it, he shall, without further proceedings therein, deliver the body to the friends, if any there be, for interment;" * * *

* * * * * * * *

"Sec. 654. Where inquests are not held, the Coroner shall issue a certificate to the following or similar import:

"I, ———, Coroner of the [parish or district, as the case may be] of ———, having been certified of the death of ———, and having viewed the body of the said ———, and made inquiry respecting the death, do certify that I am satisfied no guilt attaches to any person by reason thereof, and that an inquest is unnecessary." * * * * *

"Sec. 655. If the Coroner shall have reason to suspect that the person whose body he shall have been called to view came to his death by violent means, then, and not otherwise, it shall be his duty forthwith to proceed and take inquest of said death."

"Sec. 657. When inquest is to be held, the Coroner shall summon forthwith five citizens residing in the parish to appear before him at the time and place expressed in the summons, then and there to inquire upon view of the body of ——— there lying dead, when and by what means he came to his death."

"Sec. 660. * * * * * *

* It shall be the duty of the Coroner, if adjudged necessary either by himself or by a majority of the jury in order to ascertain the cause of death, to order a *post-mortem* examination, whether surgical only, or chemical also, to be made on the body of the subject of the inquisition, by competent medical practitioners." * * * * * *

"Sec. 663. The jury upon the inspection of the body, and after hearing the testimony of witnesses and making all needful in-

quiries, shall sign and deliver to the Coroner their inquisition, under their hands, in which they shall certify when and by what means deceased came to his death, and if it shall appear that deceased was feloniously killed, the jurors shall further state who were charged with being guilty, either as principals or accessories, if known, or with being in any manner the cause of his death, which inquisition may be in substance as follows: An inquisition taken at ———, on the —— day of ———, in the year ——, before the Coroner of the parish [or portion of the parish, in case of the Parish of Orleans], there lying dead. The jurors whose names are hereunto subscribed having been sworn to inquire on behalf of the State when and by what means said ——— came to his death, upon their oath do say; [then insert when, how and by what person or persons, means, weapons, or instruments, he was killed.] In testimony whereof, the Coroner and jurors of this inquest have hereunto subscribed their names the day and year above stated."

"Sec. 673. Any person who shall have knowledge of a drowned person, or shall find a corpse adrift, shall be authorized to take it ashore, and shall be required to cause notice to be given to the nearest coroner having jurisdiction; *provided*, that in case a coroner cannot be notified in time to hold an inquest thereon forthwith, a justice of the peace of the neighborhood, or two witnesses, shall be immediately called to view the body, ascertain its condition, and draw up a *proces verbal* thereof, to be forthwith transmitted to the coroner."

Section 650, regarding the qualifications of coroners says: * * * * "he shall be of fair education, good moral character, and possessed of good business qualities, and it shall not be necessary that he shall have had a medical or surgical education, or have been a regular practitioner of either branch of science."

This, gentlemen, embraces all, or mostly all, our legislation on the medical jurisprudence of autopsies. It is proper, in fact necessary, for you to know this, as you know not how soon you may be called upon to perform, extemporaneously, an autopsy, or hold an inquest, in the name of the law. This may happen either before or after you have obtained your degree of doctor of medicine. Gentlemen—I have seen in this very town, autopsies made and verdicts rendered that were most absurd, showing on

the part of the officers of the law the grossest and most unpardonable ignorance.

True it is, the law says a man need not be a physician to be a coroner, but it is evidently the spirit of the law that he who is elected to such a trust shall have for his assistant a man well versed in the art of making autopsies and instructed in medical jurisprudence.

In some countries the attending physician is not allowed to be present at an autopsy of one of his patients. Here these restrictions do not exist.

The delay of twenty-four hours after death in Europe is not exacted in medico-legal autopsies, though generally observed. In cases of poisoning by phosphorus this delay should not only be shortened, but the autopsy shold be made as shortly after death as possible, in order better to observe the phosphorescence of the alimentary canal. In Prussia, it is forbidden to make even legal post-mortem before twenty-four hours after death.

When called upon to make an autopsy for a coroner, the physician should take pains to show him the lesions as he discovers them. He should not be guilty of hasty conclusions, which a careful examination might alter, and should reserve for his report his final appreciation of the case.

Rules to be observed in making an autopsy. In some countries, as in Prussia, autopsies are made according to rules prescribed by law. In this State, post mortem examinations are entrusted to competent medical practitioners, who regulate the *modus operandi.* The first rule to be observed, is a great punctuality in the researches and a most absolute veracity. In 1816, two health officers made a post-mortem examination, and though they had not opened the cranium, reported that the brain had been found congested. Suspicions arising as to the cause of death, a second examination was ordered, and it was discovered that the cranium had not been opened. The officers were prosecuted and acquitted. "A long detention, laborious debates, costly proceedings, such was, says Orfila (vol. ii., p. 54), the result of overlooking the most simple proceeding of judiciary medicine." Another similar case happened in 1829. A man was found in a dying condition on the public thoroughfare on a bitter cold night. He died, and the physician making the autopsy, finding the lungs congested, concluded that the man had died of pneumonia. The cranium was not opened, yet in

his report he declared having found nothing abnormal in the brains. It was afterwards ascertained that a scuffle had taken place. A second post-mortem examination was ordered, and it was discovered that the cranium, which had not been opened, bore traces of fractures and the brains serious lesions.

It is no more a question to-day of knowing whether or not a body in an advanced state of decomposition, and horribly mangled, should be opened. The physician should obtain whatever information he can from the facts as they present themselves. Important discoveries might be made in most putrefied organs. Another important rule is always to open the three cavities. Though a sufficient cause of death may be found in one of them, this rule should be applied in all cases. All authors give examples of the unfortunate consequences caused by the neglect of this rule. A man died during a scuffle with his two children. The surgeons who were called in viewed the body, and declared that the man had died from the effects of maltreatment. The children (man and wife) were accused of parricide and condemned to death. They would have died on the scaffold, had not the immortal Louis showed the nullity of the proces verbal of the visit by proving that the man had died of an attack of apoplexy. In the affair of Peytel, death was attributed to gunshot wounds. The body was found in a pool. The accused declared that the wounds were not mortal, and that his wife had drowned herself. He was released, the physicians not having examined the windpipe. A father suspecting his daughter of impure action, struck her. She died, and the cause of her death was attributed to the blows received during life. Medico-legal researches proved that no traces of violence existed, that the signs of virginity were present, and that she had died from having taken arsenic. Wildberg reports that a young girl who had committed a theft, while being beaten by her father threw up and died. She also had taken arsenic. Coincidences have occurred of an attack of apoplexy and a poisoning while eating. Besides the causes of death, there are other accessory facts, which can only be revealed by an autopsy, such as acute or chronic alcoholism, the time of digestion, and the nature of the alimentary substances taken. Again: the post-mortem examination enables us to answer questions propounded during the debates.

While making an autopsy, the physician should refrain from making any unnecessary incisions and should spare the face.

The incisions should be made according to the rules laid down, in order to expose to the best advantage the visceræ, and examine them in situ. If wounds exist, they should be probed with a gum elastic probe, in order to ascertain and preserve their directions. No researches of any kind should be omitted, but made methodically, so as not to render a counter-examination impossible. Chaussier thus speaks of autopsies made without management: "When we see the body of a man thus altered, bloody, mangled in all its parts, far from considering this the result of the researches of a wise and sensible man, we would rather look upon it as the carnage of a wild beast." An autopsy should be made in one sitting and by daylight. When this cannot be done gaslight may be used, and the body kept in a cool place and on ice. If an organ, or part of one, is carried away for a special inspection, this should be mentioned in the report, as this organ might be sufficient to convict. The autopsy completed, the organs are replaced in their cavities and the body sewed.

In making a medico-legal autopsy three things are to be accomplished: 1st, an external inspection; 2d, an internal inspection; 3d, accessory researches.

1st. *External Inspection.* Before commencing the examination of the internal visceræ, it is always necessary to make an external inspection of the body. This is called viewing the body. In some cases it is sufficient. This inspection comprises three views: 1st, that of the localities; 2d, that of the clothing, and 3d, that of the external surface of the body.

It is important that the first visit be made at the place where death occurred, and that the body be viewed in the position in which death left it. This is necessary in order to ascertain the relations of the wounds, fractures and effusions.

In *inspecting the localities*, the physician shall notice everything relating either to the body or to the supposed act, inhabited or isolated places, the position of the furniture, presence of rocks, projections, various marks, nature of the soil, whether it be muddy or dusty, dug up or battered down (it was the inspection of the soil which led to the discovery of the famous Troppman murder in Paris, six or seven years ago, when the bodies of the victims were found buried in a field), proximity of a route, forest, gutter, pool, its depth. In a case of murder by strangulation, the place where the crime was committed was identified through the presence of a

branch of a privet tree, which was tied to the rope. Traces of blood, dejections, hair, debris of organs, shall be carefully inspected. Also firearms, whether discharged or not, different weapons or instruments, whether or not in close proximity to the cadaver, if in its hands, whether loosely or tightly grasped.

Identification takes place by the *clothing;* it is more or less tightened on the body, torn, soiled, stained with blood, spermatic fluid, urine, fœcal matters. Surgical dressings should be inspected. If practicable, the physician should have the body undressed in his presence, and superintend the necessary cleaning and washing of the corpse. In a case of infanticide, the body of a child that had been washed in a tub of water was produced with the trachea filled with water. A verdict of death by drowning would have been rendered, had not accessory researches decided otherwise.

The *external inspection* is now made. The general aspect and attitude of the body shall be carefully noticed, as also the expression of the face. Recent researches on the attitude of soldiers dying on the battle-field, show the importance of this. The attitude of a man asleep, or of a man trying to escape, should be observed; the body will be directed towards the door, the hand raised as if to strike. The importance of these attitudes were seen in the case of a whole family asphyxiated by gas (carburetted hydrogen); one was found in bed, one on the floor, and the other near the door, where he had attempted to escape. It is clear that this one had died last. Thus you see how attitude may decide who was the last survivor.

After this external view, the physician will proceed to a methodical examination in the following manner: investigate, 1st, *the signs of death* and the traces of putrefaction, the temperature, rigor-mortis, meteorism, coloration, and especially the post-mortem lividity, which should be minutely described; 2d, *signs of identity*—this search is often useless, yet should not be neglected; any physical peculiarities, as the hair, eyes, moles, old scars, size of the body, conformation, etc., should be recorded; in a woman, fissures of the abdomen, the state of the mammæ, milk. 3d. *Traces of external violence*, such as wounds, contusions, suspected regions, the neck, the orifices of the cavities, the blood that trickles from the nose or external meatus, the laceration of the tympanum. The cases of pistol shot wound of the brain through the mouth, that I have seen, have left no external sign.

In one case, twenty minutes after the accident the head and face were blueish black, the mouth and tongue burned; in the palate bone was an opening through which the ball had penetrated. Death was instantaneous. The anus should be explored. In the case of a man found dead upon the public thoroughfare, this exploration had been neglected; the deceased having been accused of pederasty, as a cause of the crime, medical proofs were wanting. 4th. *Traces of diseases* either general or local, such as eruptions, hemorrhages, different dejections, hernia, syphilis. To make these different researches, the physician will commence with the head and descend, on the anterior surface, then the posterior, and lastly the lateral. The different regions should be palphated and percussed, and the joints examined but not opened.

In many cases this external view, with testimonies of eye-witnesses, is sufficient to render a verdict. It is very important, gives an approximate idea of the time at which death occurred, enables identification, discloses certain diseases and traumatic lesions, and furnishes useful data on the circumstances of the crime. But should the least suspicion exist, the internal inspection of the cadaver should at once be proceeded with.

2d. *Internal Inspection.* It comprises the preparations and the operation.

Preparations. The body is carefully carried to a convenient place to make the autopsy. A hospital amphitheatre, prepared for the purpose, is the best place. It is a pity that a room fitted up for this does not exist in every district in this city. In Germany, such a place is to be found in each cemetery. Great would be the knowledge acquired, to law as well as to medicine, did such places exist here, where post-mortem examinations, so frequent in a large city, could be properly made. In the country, the physician should choose a place where he has plenty of light, under a tree, a shade, or in a room; a narrow plank supported by trestles, or placed over one or two barrels, with a billet of wood for a block. Water, sponges, old linen, strings and basins, complete the apparatus. He will order away all inquisitive and curious spectators. It is important, gentlemen, that you should know all these details.

Disinfectants should be procured, chloride of lime, permanganate of potash, carbolic and muriatic acids, etc. The atmosphere of the room may be disinfected with chlorine gas; this is done by

pouring vinegar on diluted chloride of lime, or what is better, such a portable apparatus as this one, that I have contrived, for disinfecting my wards. It has the advantage of enabling me to disinfect at will, by loosening this screw. Thus. You immediately see the fumes rising. Besides, these fumes are composed of chlorine and oxygen, which is much preferable to chlorine alone, if we operate in a closed room or one with small openings. This gas is obtained by placing in this bottle about two drachms of black oxide of manganese, half an ounce of salt, and, say one of sulphuric acid. The chemical decomposition which takes place is very simple; the sulphuric acid combines with the salt and black oxide of manganese, forming a sulphate of soda and sulphate of manganese, and setting free oxygen and chlorine. Your professor of chemistry will give you the details of this decomposition, which time and space do not allow me to do. All disinfections should be used outside of the body; none should be poured on the organs.

An autopsy may be made with a saw and scalpel, but in order to operate with satisfaction, the physician should provide himself with the necessary *instruments*. These are, besides the instruments which I have shown you in our last lecture, a razor, one or two accessory saws, curved and straight needles, syringe with different nozzles, mecometer to measure the fœtus, compasses, magnifying glass, microscope, alcohol lamp, and some reagents, such as nitric acid, turmeric paper, etc.

Operation. The *order* in which the cavities are opened depend on the cause of death. I generally commence at the seat of injury, otherwise I operate according to convenience. I some times commence in the manner I mentioned to you in our last lecture, but for a legal autopsy it might be better to operate in the following order: the head, face, mouth, pharynx, throat, thorax, abdomen, anus, genital organs, posterior surface of trunk, vertebral column, superior and inferior extremities. The organs should first be examined in situ, then removed for further investigations.

The head being shaved, if the condition of the scalp is to be ascertained, not otherwise, different modes of proceeding exist for removing the scalp. An incision is made from one ear to the other, passing over the vertex of the head; one flap is reversed over the face, the other posteriorly. This incision is the one most easily sewed up afterwards. Chaussier recommends two inci-

sions, crossing each other on the vertex. One extends from the root of the nose to the external occipital protuberance; the other from ear to ear. After carefully examining the calvarium, it is removed by means of the saw. Here the use of this instrument is obligatory; the hammer, which is more expeditious, can only be used in cases of sudden death, poisoning, asphyxia, when no lesions of the head exist, and that this has been verified by the external inspection. As a general rule, in a medico-legal autopsy it is better to use the saw, with which a circular incision is made. It passes above the superciliary arches, in front, above the roots of the zygomatic arches, laterally, and just above the occipital protuberance, posteriorly. Care must be taken not to injure the dura mater. The chisel and hammer may be used to finish the sections not completed by the saw. With the hook at the handle of the hammer, assisted if need be by this lever, the calvarium is removed; its thickness, translucency, and condition of the sutures, are now examined. Should any fractures exist, the cranium should be but partially opened, if necessary, in order to preserve them untouched. In children, the adhesions of the dura mater to the bone are such, that its removal with this one is obligatory. In fact, with a saw having a large blade a very neat and complete section may be made, through the bone, dura mater and brain.

The dura mater is now exposed to view. It shall be carefully examined. Adhesions generally exist near the median line, where the pacchionian bodies often project through the membrane. This state of things is normal. Very extensive and firm adhesions are generally produced by inflammation. The outer surface of the dura mater should be examined for clots, new growths, and inflammatory lesions. The longitudinal sinus may now be laid open with the scissors and its contents examined. A longitudinal incision is made on each side of the sinus, and the dura mater turned down on the sides; then the insertion of the falx to the crista galli is clipped off and the falx turned down. This exposes the external surface of the brain covered by the pia mater, which is examined as was the dura mater. Adhesions of the membrane to the pia mater are noticed. The head should be elevated, to prevent the flow of blood, which gives a better appreciation of the condition of the vessels, and whether they are congested or anæmic. If no

lesions or tumors exist, and after examining them if there be any, the interior lobes of the brain are pulled gently backward, the vessels and nerves and the tentorium are divided with care, so as not to tear off the nerves, and the brain, together with the cerebellum and medulla oblongata, are removed: the latter should be cut across as low down as possible. The brain is now examined on all its surfaces, and then cut up in slices. Its consistence, color, quantity of serosity, foreign bodies, as bullets and bones (if any), are noticed. The superficial veins of the brain once laid open, are easily filled with air. If necessary, the orbit and internal ear are laid open. The dura mater is scraped off from the base of the skull, which is carefully inspected for fractures, inflammations, new growths.

One incision, extending from the inferior maxillary bone to the pubis, is sufficient to examine the *neck and trunk*. The flaps are dissected off on each side, and easily adapted and sewed up after the operation.

The inferior maxillary is now sawed across at its centre, or cut through with the costotome in very young subjects. The two halves, stripped of their soft parts, are separated. The mouth is now laid open and exposed without any injury to the face. By drawing down the tongue and incising the soft palate, the pharynx and upper portion of the larynx are seen.

To examine the neck, two incisions are made on each side, one parallel to the inferior maxillary, the other parallel to the clavicle. To see the situation of the epiglottis, in drowned and asphyxiated persons, a neat section is made through the thyro-hyoidian membrane. The different regions of the neck are now examined, also the anterior surface of the vertebral column.

The opening of the trachea and larynx is postponed until after that of the thorax. When one central incision is not made, the soft parts of the thorax may be removed by one oblique incision, starting from the upper border of the sternum to the last rib, on each side. Disarticulating the sternum with the clavicles, the costal cartilages are then cut with the knife. The sternum is now either turned over the face, after cutting its adhesions to the diaphragm, or vice versa. If a better view of the organs is desired, the clavicles are sawed across, and the ribs cut with the costotome, at their posterior third, and this large breast-piece turned down over the abdomen. When it is

desired to avoid the risk of wounding the arteries behind the clavicles and sternum, this bone is sawed across between the first and second ribs, and the cartilages cut from this rib down. In this manner no blood is effused in the thorax. After carefully examining the cavity, the remaining fragment of the sternum, together with the first ribs and clavicles, may be removed. It is often useful to open the thorax, without touching the abdomen, in order to prevent the admixture of effused liquids. In this case, the oblique incisions are the better mode of proceeding, as the diaphragm is not touched. The abdomen may be opened, inferiorly, by a semi-lunar incision passing over the pubes and Poupart's ligaments. This is the best mode of exploring the diaphragm, whose integrity is shown by its tension. Mahon employed artificial light for this examination. A candle, held in one or the other cavity, allowed a small rent to be discovered. An inspection, in place, of the visceræ of both cavities, is now made, after which their removal is accomplished, commencing with those of the thorax, by removing first the heart. After first noticing its condition, whether full or empty, the hand is passed over the arch of the aorta, to detect the presence of aneurism. The pericardium is now opened and inspected, intus et extra. If the quantity of fluid it contains be abnormally great, it should be measured, by being taken up with a pipette or a sponge, and put into a graduated glass. This rule is general for all abnormal effusions, pleuræ, abdomen, and ventricles of the brains.

The *heart* may now be removed. If there be an aneurism of the arch, this vessel should be cut, below the tumor, otherwise at about two inches from its cardiac region. The innominate, cava, and pulmonary veins are now cut, previous to which a ligature may be thrown around each vessel. As these vessels are sectioned, the presence of gas, the quantity, quality, and consistency of the blood, are noticed, also the presence and extent of heart clots. The heart may be normal, hypertrophied, or atrophied. The sufficiency of the aortic and pulmonary valves is now ascertained, by pouring a stream of water in the two arteries, and observing how well they hold it. The right ventricle is now laid open by an incision carried through its anterior wall near the septum, reaching to the apex. Through this opening the blade of the costotome is passed into the pulmonary

artery, and both laid open. With a little care, the section will be made to pass through one of the points of junction of the pulmonary valves. The left ventricle is opened in a similar manner. The contents are noted. The capacity of the auriculo-ventricular valves are now examined, by pouring water into the base of the ventricles and examining as for the arteries. The tricuspid valve is normally somewhat insufficient. The heart is now weighed, the thickness of its parieties measured. Their condition carefully inspected; they may be thickened, thinned, soft, hard, degenerated, rigid or flaccid.

The larynx, trachea and bronchi, should be opened in situ and examined, especially in cases of death by drowning. They are then removed, together with the lungs. These are weighed, incised and inspected: the incisions extend down to the minute ramifications of the bronchi and arteries.

The *abdomen* is now opened, according to the rules I have laid down. An inspection in situ of the organs, peritoneum and pelvis, is made. The greater omentum is now cut across, at its base, to expose the posterior surface of the stomach and the duodenum. After exploring the bowels, their positions, transpositions, diverticulums, and the state of the other viscerae, double ligatures are placed at the base of the œsophagus, at the pylorus, interior extremity of the duodenum, cœcum and rectum. The stomach and duodenum are now removed, opened, and their contents examined. If need be, they are placed in bottles, for a chemical or microscopical examination. Anything taken away for a further investigation should be specified and reported in the *proces verbal*. The œsophagus is then inspected. The small and large bowels are now removed, and opened by an incision along their mesenteric origin, their mucous membrane examined, and if necessary they may be put aside for chemical or microscopical examinations. After the examination of the other organs, anus and genital organs, the body is turned face downward for the inspection of the vertebral column.

After a careful external inspection of the *genital organs*, the horizontal branch of the pubis and ascending branch of the ischium are sawed across, the first opposite to the obturator foramen. Or again, the pubis is cut through in its centre, and the two sacro-iliac articulations laid open. The bones are widely

separated, and the parts easily inspected. The bladder is opened, and the urine collected and examined chemically and microscopically. The organs should be very minutely inspected. The following facts are to be especially noted: presence of semen, congestion of the cavernous bodies, state of the corpora lutea, menstruation, recent or ancient traces of confinement, form and dimensions of the uterus, virginity.

The body being turned face downward prior to examining the *vertebral column*, wounds of the back should be probed and slit open, to be inspected and their directions ascertained. An incision is now made through the soft parts and muscles, over the spinous processes, from the exterior occipital protuberance down to the coccyx. The soft parts are dissected off on each side, so as to expose the laminæ of the vertebral column. These are then divided close to the articulating processes with the double rachitome, the saw and chisel, a sharp chisel, or with strong cutting forceps. The spinous processes and laminæ are then torn away together, and the cord exposed enveloped in its membranes. The cerebro-spinal fluid and injection of the vessels are noticed. In certain deaths this injection is very intense. It is better to remove the cord with its membrane. The nerves are cut in the inter-vertebral foraminæ and the cord removed. Its dura mater is now incised through its whole length and the spinal marrow exposed. The existing lesions are often visible only to the microscope. Generally the examination of the spinal cord is made only in special cases. The limbs are now inspected. Incisions are sometimes necessary to examine deep-seated intra and inter-muscular hemorrhages. It must not be forgotten that the rigor-mortis is often the cause of these hemorrhages.

The post-mortem examination over, the viscera are replaced in the cavities and the body sewed up. All legal proceedings being over it may now be delivered to the friends for burial. If not, it is wrapped up in a sheet, which may be sewed up and sealed, as recommended by Chaussier, before being placed in the coffin. An absorbent powder may be placed in the bottom of the coffin, but no disinfectants whatever should be thrown into the cavities or on the organs.

While making the post-mortem examination, should the surgeon or his assistants be *cut* or *pricked*, the wound should be in-

stantly washed and sucked. It is seldom necessary to cauterize them. Should the nature of the disease or the advanced state of decomposition require it, it should be done, and with powerful cauteries, such as nitric acid, nitrate silver, and even the red hot iron. These wounds should be carefully searched after the operation. The best disinfection with which to wash one's hand, to destroy the very tenacious smell of an autopsy, is a solution of permanganate of potash, one to ten of water, which dyes the hands; then with a weak solution of muriatic acid, which, while it warms the hands, removes this dye and with it the smell.

Accessory Statements. Microscopical examinations are to-day necessary in many autopsies. They are sometimes made on the spot, or subsequently, when it is then mentioned in the report. Microscopical analyses are useful in recognizing the alteration of tissues, nature of liquids, of substances found in the stomach and bronchial tubes, of fœces which have penetrated in the air passages of new-born infants immersed in privies, presence of semen, etc. *Chemical analyses* may be made immediately, as in the examination of the urine for albumen or sugar, or postponed, as in cases of poisoning. The contents of the stomach and bowels, and different organs, brains, liver, are examined, as in cases of alcoholism, poisoning by arsenic, mercury, saturnine intoxication, asphyxia by oxide of carbon. Here spectral analysis is very useful. The *preservation* of organs, of a part, or of the whole body, is often necessary. 1st, to *identify* the subject, the body is kept in a cool place, on ice, is injected; 2d, as a *specimen for conviction*, dessication of fractured bones, soft parts preserved in a weak solution of alcohol, or chloral hydrate; 3d, *for microscopic examination*, the use of glycerine, chromic acid. 4th, *for chemical analysis* the viscerae and liquids are put in bottles and kept in a cool place or on ice. If this will not do, a weak alcohol may be used, and a sample of it kept.

Drawings, photographs and *mouldings*, are also useful to help the memory and to identify.

Such, gentlemen, are the general rules for making medico-legal autopsies. They are modified according to cases: 1st, *age*, as new-born infants, infanticides; 2d, *cause of death*, as by wounds, drowning, hanging, poisoning; 3d, *in opening animals*, as in cases of hydrophobia, wounds or poisoning.

HISTORY OF SOME CASES OF YELLOW FEVER OBSERVED AT BAY ST. LOUIS IN 1875, FOLLOWED BY AN ACCOUNT OF A RARE CASE.

BY CHARLES DELERY, M.D.P.

Whenever there is an epidemic of yellow fever in New Orleans, the disease may be confidently expected to show itself at Mandeville, at Bay St. Louis, Pass Christian, and at the other watering places on the shores of the Gulf of Mexico. Even the distant inhabitants of the piney woods are not exempt from its baneful influence. The year 1875 has been an exceptional one, however, as typhus icterodes has been met with at the Bay, although at the time it existed in New Orleans merely in sporadic form.

The miniature epidemic at the Bay, this year, is therefore deserving of special notice, and presents certain peculiarities worthy of attention.

1st. With reference to the origin of the malady.

2d. Considered in its mode of propagation.

3d. In its different periods of incubation.

4th. On account of certain symptoms of grave import which, instead of presenting themselves together, in the same individual, were noted isolatedly, in different subjects.

5th. Owing to the simple therapeutic course I adopted, the result was four cures in four patients, two of whom had black vomit. Of the two cases with black vomit, in one the icteric hue was limited to the sclerotic coats, the other had passive hemorrhage from the gums. Black vomit is looked upon as being merely an internal passive hemorrhage. Before publishing the four observations, which have been collated with the greatest care, I will proceed to examine, seriatim, the five divisions marked out above. I must remark here, however, that intermittent bilious fever was prevalent among persons born in this locality, whilst yellow fever was observed only among strangers. I will add, that at the outset, the similarity between this bilious remittent fever and typhus icterodes was so great, that the most experienced eye could detect no difference in the diseases. As a proof of the foregoing statement, I have introduced, further on, the carefully given history of one of these cases of bilious fever.

1st. *Origin of the Malady.* It is not necessary to narrate the

many reports which were current here with reference to the origin of the troubles. I intend to furnish only facts which can not be disputed, and data whose authenticity I guarantee, and which I have myself obtained. It is useful, first of all, to state that the disease began in a house belonging to Mr. John Martin, adjoining the one inhabited by that respectable citizen, and situated at the N.N.E. end of the Bay, the centre of the village being taken as a starting point. This house was occupied by the Gallagher family. The Gallaghers were from Michigan, but they had arrived here from Missouri, in February last, *from which time they had never been absent from the Bay, nor had they ever received any merchandise from New Orleans.* This family was composed of five persons, as follows: a little boy, Myron, aged six years; a young girl, Emma, aged fifteen years; a young man, Edward, aged twenty years; and the father and mother. A young colored man, who was at Pascagoula during the heat of the epidemic there, escaped from that place and came to the Bay on the 22d or the 23d of August. He resided in a house distant about sixty paces from the one occupied by the Gallagher family. Myron Gallagher (both his father and the colored man have assured me of this fact) visited the latter daily, and the child became sick, eight days after making his first visit. The day following (Sept. 1st), the young girl was taken down, etc. Having been called to see neither of these two patients, I content myself with the foregoing details, which to a great many will be sufficient to establish the fact of importation. I will not argue this point, and I will even admit that such inductive process strikes me as being plausible enough.

2d. *Mode of Propagation.* On the 16th of September I was called to see the father, Mr. Gallagher, and on the 18th—two days later—I was summoned to attend Miss Eliza ———, who lived in a house about two squares away from the Gallagher family. The two residences were separated by a tolerably extensive open field. On the 20th I was requested to visit Miss Fanny ———, at the Douglas House, distant from two to two and a half miles from the original seat of infection. The Douglas House is located at the southwestern end of the Bay, reference being of course had to the centre previously adopted.

I will add, that Miss Fanny ——— had always staid at home, since her arrival at the Bay, and that she had never been in the infected part of the village. The disease can therefore have

been conveyed to her only either by the ice man, or by the baker, or by some wandering pedler; so that one may truly say with Montaigne, "Que sais—je?"

6th. *Different Periods of Incubation.* It is easier in the country than in a city to appreciate the difference in periods of incubation. In this respect, the Gallagher house will furnish us interesting data. The six inhabitants of that house, namely, the three children, the husband and wife, and a young man—either a friend or relative of the family—all had yellow fever. The young man, I do not know why, did not wish to have a physician, and with the assistance of an intelligent nurse, gave himself up to the curative efforts of nature. I must add, that his wishes met with success, owing, as I suppose, to the non-malignity of his case. Here, now, is a tableau of ten different periods of incubation, arranged chronologically:

Myron Gallagher, 31st of August.
Emma Gallagher, 1st of September.
The mother, 13th of September.
The father, 16th of September.
Edward Gallagher, 21st of September.

I cannot say exactly when the young man, alluded to above, was taken sick, but I know positively that it was at about the time indicated for the children, Myron and Emma. If it be admitted, which is not at all unlikely, that the germ of the disease had been imported by the colored man who arrived at the Bay, from Pascagoula, on the 23d of August, the following periods of incubation will be remarked.

For Myron, nine days.
For Emma, ten days.
For the mother, twenty-one days.
For the father, twenty-four days.
For the son, twenty-eight days.

I foresee an objection which will be made to the above calculation. Certain physicians will say, "Why suppose a common point of departure instead of admitting a series of foci of infection succeeding each other by weekly periods, and logically connected by successive strata of patients? My answer is, that I see no necessity for such fractional division. It is evident, that from the day when the first case of yellow fever broke out in the Gallagher house, all the inmates of that house were simultaneously subjected to the influence of the same morbific cause. It

is not at all strange that the periods of incubation were so varied, if the differences in individual idiosyncrasies be remembered, and if it be taken into account that certain natures resist pathogenic germs powerfully, while others, on the contrary, succumb with the greater facility. I am convinced that the course of events is the same in large cities, but, owing to the multiplicity and dispersion of cases in populous centres, it becomes extremely difficult to appreciate facts, as they are.

4th. *An Account of certain Symptoms of Grave Import, which, instead of presenting themselves together, etc.* The observations numbered 3 and 4 offer this peculiarity, that in the one there were black vomit and passive hemorrhage from the gums; in the other there were black vomit, deep icteric hue, limited to the sclerotic coats, and delirium: nothing of the kind was noticed in observations 1 and 2, although in both these cases the fever made its appearance with great intensity at the outset. This feature was especially marked in observation 1.

5th. *Owing to the Simple Therapeutic Course, etc.* In my opinion black vomit is, without any doubt, the most serious symptom in yellow fever; the only one which, if it be not promptly arrested, entails death with almost unerring certainty. Those physicians who have enjoyed favorable opportunities for the careful study of this terrible malady, are fully aware of the rapidity with which the strength of the patient fails after each attack of black vomit. All the attention and solicitude of the physician should therefore, in my opinion, be concentrated upon this capital point; the tendency must be to avoid, at any cost, the setting in of this terrible spectre. How may this be done? By carefully nursing the stomach. For this purpose, during the two or three first days of the disease, attention must be had to the giving of *only such drinks* as are the best suited to dispel the "molimen hæmorrhagicum." I adopted the following treatment for my four patients at the Bay. This treatment may perhaps be called "abstention," which was in reality the object I had in view. I used: 1st, a purgating citrate of magnesia, in order to completely evacuate the bowel; 2d, as a drink lemonade was employed, the acid being either the citric or the sulphuric, or the juice of lemons. I had this drink *cooled*, by means of ice, and I only allowed two tablespoonfuls to be swallowed every hour. The patients were, however, advised to take a little of the lemonade often, merely holding it in the mouth until it lost its coolness. Notwithstand-

ing this rigorous diet, two of my patients had black vomit, which I succeeded, however, in checking immediately, by the application of a blister to the epigastrium, and by the administration of a few drops of Magendie's liquor, given in doses repeated every half hour, the interval being afterwards increased to one hour. Towards the end of the third day, when there was no contra-indication, I caused a little chicken broth to be given alternately with the lemonade, once every hour or so. When it was necessary, I made use of injections, whose composition varied with circumstances. Sedative draughts were also employed.

Until science will have discovered a specific for yellow fever—and of the possibility of this we should not despair—it seems to me that the most rational treatment is the one whose outlines have been sketched above.

Any treatment which contemplates calling many drugs into play appears to me simply disastrous. On account of the violence of the symptoms of this terrible malady, one feels tempted to make use of heavy artillery; after more mature study, however, one becomes inclined to employ only weapons of a much lighter calibre. I now give, in the order of the respective dates, the observations of the four cases I attended at the Bay in the course of the summer. I have understood that there were, in all, eight cases at this place. I am not aware of there having been any more.

OBSERVATION NO. I.

On the 16th of September last, at 9 o'clock a. m., I was called to see Mr. Gallagher, who had been taken ill at half-past two o'clock the same morning. The patient, aged 54 years, was born in Michigan. He had resided in Missouri for two years, and he left that State in February, 1875, in order to settle at Bay St. Louis. The following symptoms were noted at my first visit. Face tumefied; injected eyeballs, tongue red at the tip, coated at the base; dry heat of surface; pulse 120; intense headache. He had taken a dose of castor oil shortly before my coming. *Prescribed an infusion of orange leaves.* 3 *o'clock p. m.*—Face still swollen; copious perspiration; headache less severe; moderate thirst; had had one stool; pulse 104. ℞—Citrate of magnesia, then orange leaf tea to be continued. 8 *p. m.*—Perspir-

ing moderately; less heat of surface; headache decreasing; no motion from the bowel; pulse 100.

September 17th, 7 *a. m.* Pulse 80; spent a tolerably good night; slight headache; skin moist; very little heat of surface; no stool; tongue coated; urine copious and apparently healthy; the usual tests show some albumen, however. 3 *p. m.*—Pulse 85; general condition unchanged, has been to stool once; thirst; urinates readily.

September 18th, 8 *a. m.* Pulse 78; some heat of skin; is free from pain; thirst lessened; urinates freely. ℞—Two spoonfuls of chicken broth every hour, to be alternated with the same quantity of citric acid lemonade. 2 *p. m.*—Pulse 78; general condition good; temperature normal; urine abundant. 7 *p. m.*—Condition the same as at the time of the previous visit; urinates freely.

September 19th, 8 *a. m.* Pulse 68; general condition very satisfactory. *Noon.*—No change. 7 *p. m.*—Pulse 64; general condition the same.

September 20th, 8 *a. m.* Pulse 60. The patient complains of weakness; ordered broth in large quantities. 2 *p. m.*—Pulse 72; urine copious; still quite thirsty; the quantity of liquids to be given is, however, kept at the same standard. 8 *p. m.*—Pulse 68. The tongue is cleaning off; free from pain; still thirsty.

September 21st, 8 *a. m.* Pulse 60; complains of thirst; spent an excellent night. 8 *p. m.*—Pulse 56; skin cool and elastic; less thirst; urine copious.

September 22*d*,	7 *a. m.*	Pulse 52.	These variations of the pulse during convalescence are evidently due to the nourishment given.
" "	6 *p. m.*	" 51.	
" "	9 *p. m.*	" 68.	
September 23*d*,	8 *a. m.*	" 52.	
" "	1 *p. m.*	" 60.	
" 24*th*,	7 *a. m.*	" 60.	
" 26*th*,	7 *a. m.*	" 66.	

Observation No. II.

Miss Eliza ———, aged 30 years; born in England; resides in New Orleans, but spends her summers in Biloxi. Last August, however, she staid in New Orleans for three weeks attending a

sick relative. A fortnight after her return to the Bay she was taken with the fever. During the fall of 1869, whilst in New Orleans, she suffered from a severe attack of fever, which the attending physician styled an acclimating fever. She was taken sick *here* on the 18th of September. The following symptoms were observed:

September 18th, 8 *a. m.* Experienced suddenly violent pains in the head and in the lumbar region; initial chill; heat of surface parching; tongue coated; pulse 120. ℞—*Purgative lemonade.* 8 *p. m.*—Has been purged *seven times;* condition unchanged since morning; pulse 120.

September 19th, 8 *a. m.* Condition the same, with the exception of there being less headache, owing to the fact that hirudines, No. iv., had been applied to the mastoid processes; pulse 120. 1 *p. m.*—Pulse 88; skin moist; no epigastric tenderness; thirst moderate; no change in condition of tongue; has urinated. 7 *p. m.*—Pulse 80; tongue coated; violent pain along the course of the spine; heat of surface almost natural.

September 20th, 8 *a. m.* Pulse 88; intense pain in the small of the back; gastralgia; heat of surface moderate. ℞—Dry cups to the loins; citric lemonade. 2 *p. m.*—Pulse 88; violent rachialgia; has passed urine; urine not albuminous; flatus in stomach and bowels. ℞—Scarified cups to the loins; carminative draught. 7 *p. m.*—Pulse 92; heat of surface pleasant; rachialgia almost entirely subsided since the application of scarified cups; hardly any pain at the epigastrium; gums red, but not bleeding. ℞—Chicken broth, etc.

September 21st, 7 *a. m.* Pulse 84; pleasant heat of skin; occasional neuralgic pains in the head; constant thirst; has urinated. 2 *p. m.*—Pulse 88; complains of general lassitude; has urinated copiously; urine deposits a sediment. At the circumference of the vessel there may be seen a yellowish-white substance, having the shape of a ribbon and the appearance of a fatty material. 7 *p. m.*—Pulse 88; general lassitude; skin cool; no tenderness of epigastrium; still thirsty.

September 22d, 8 *a. m.* Pulse 84; spent a good night; has urinated freely; the urine, heated in a spoon, shows no sign of albumen.

September 23d, 8 *a. m.* Pulse 88; general condition excellent; spent a good night. 2 *p. m.*—Pulse 72.

September 24th and 25th. Pulse 72.

Observation No. III.

Miss ———, *a native of one of the Louisiana parishes*, aged 15 years; taken sick on the 20th of September last, at 10 a. m. I saw her at half-past six in the evening.

September 20th 6.30 *p. m.* Countenance tumefied; burning heat; slight perspiration; eyeballs considerably injected; anxious expression; greatly agitated; tenderness over the epigastrium, increased by pressure; pulse 124; tongue coated.

Miss ——— *was born in Tennessee;* spent only the summer of 1869 in New Orleans; this year (1875) she resided in that city until the beginning of June. ℞—Purgative lemonade.

September 21st, 10 *a. m.* Eyeballs greatly injected; skin very hot; less head and back ache; spent a very much disturbed night; pulse 120. 6 *p. m.*—Countenance very red; eyeballs very much injected; skin very warm; intense pains in the head and spine; agitated; exceedingly thirsty; pulse 120; has been to stool several times. ℞—Hirudines No. iv. to the ankles.

September 22d, 10 *a. m.* Skin very warm; tongue still coated; headache lessened since the leeches were applied; pulse 120; urinates as usual. ℞—Sedative draught. 6 *p. m.*—Skin very warm; less pain in the head and back; agitated; some nausea; has urinated copiously, urine dark colored, not albuminous; pulse 120. ℞—Cloths steeped in vinegar to be applied to the forehead; mustard foot-bath; sedative draughts.

September 23d, 7 *a. m.* Heat of skin greatly decreased; hardly any pain, either in the head or in the back; spent a tolerable night; has urinated; pulse 104. *Noon.*—I was sent for in haste, the patient having thrown up a mixture of bile and mucus. The pulse better since having thrown up; no epigastric pain; has had a copious stool; pulse 106; gums swollen and bleeding; a fine handkerchief passed gently over her lips becomes impregnated with blood; the teeth are stained with blood. The lemonade, even in small quantities, is with difficulty tolerated—the patient complains of its producing a scalding sensation in the stomach. 6 *p. m.*—Heat moderate; hardly any pain in the head and back; nausea; has not vomited since noon; has urinated; pulse 100.

September 24th, 8 *a. m.* Skin cool; has thrown up, *once*, well-characterized black matter; gums still bleeding; tongue coated;

no pain. ℞—Blister to the epigastrium. 2 *p. m.*—Skin cool; gums bleeding; less thirst; vomited black once, not so copiously as the first time; pulse 92. ℞—Two tablespoonfuls of ice water every hour. 6 *p. m.*—Skin cool; has urinated; vomited black, once again, since my last visit; pulse 88; no pain; thirst moderate. ℞—Blister to be dressed with gr. $^1/_6$ morphia.

September 25th, 6 30 *a. m.* Skin cool; restless and sleepless night; has urinated; vomited *mucous* matter twice during the night; frequent nausea; pulse 88. Can retain nothing but ice water, and the patient asks for port wine. ℞—One spoonful of port wine, in a tumbler of water, to be exhibited *ut supra*. 1 *p. m.*—Tenderness over the epigastric region; nausea; expectoration of mucous matter mixed with blood from the gums; has urinated; pulse 88. ℞—Port wine to be continued as before. 7 *p. m.*—skin cool; has urinated; patient feels better; pulse 88; same prescription.

September 26th, 8 *a. m.* Skin cool; slept well last night; gums bleeding; no more nausea; has not urinated since last night; pulse 80. ℞—As she refuses broth, the wine and water to be alone given. 5 *p. m.* Skin cool; has urinated freely; inclined to nauseate. ℞—Madeira wine and water.

September 27th, 7.30 *a. m.* Skin cool; gums bleeding; sputa still mixed with blood; the urine, heated in a spoon, shows a white sediment; pulse 80. ℞—Madeira wine and water; two tablespoonfuls of chicken broth every two hours. 5 *p. m.*—Pulse 68; general condition very satisfactory.

September 28th, 10 *a. m.* Pulse 60; patient in splendid condition.

September 29th, 10 *a. m.* Pulse 72. Two hours before this visit, however, she had eaten a soft-boiled egg and taken a little tea.

OBSERVATION NO. IV.

September 21st. Summoned, at 1 p. m., to attend Edward Gallagher, aged 20 years, who became unwell this morning at eight o'clock; skin very warm, although slightly moist; countenance quite red; eyeballs injected; tongue coated; intense pain in the head and back; pulse 88. ℞—Citrate of magnesia. 7 *p. m.*—Tongue dry and like a rasp, as in typhoid fever; countenance tumefied; eyeballs injected; skin very warm; pulse 92; has had two stools. ℞—A draught acidulated with citric acid.

September 22d, 7 *a. m.* Hardly any pain in the head and back; external portions of the conjunctiva still quite blood-shot; pulse 80; has had four stools.

September 23d, 8 *a. m.* Pulse 92; heat of skin greatly lessened; hardly any pain in head and back; tongue coated and furred; has urinated; had a copious epistaxis this morning. ℞—The draught with citric acid to be continued; chicken broth to be given occasionally. 1 *p. m.*—The patient has just thrown up black; the ejection, although not copious, presented however the usual characteristics; patient feeble and agitated. ℞—Blister to the epigastrium; a spoonful of a mixture containing citrate of morphia to be administered every hour. 7 *p. m.*—Has not vomited since application of blister; patient agitated; talks in a loud voice when alone; no nausea; skin moderately warm; has urinated; not much headache; pulse 80. ℞—Gum water, the patient complaining of a sense of burning after the lemonade.

September 24th, 7 *a. m.* Pulse 92; depressed; hardly any heat of skin; great restlessness; continues to talk, as before; answers questions readily, however; tongue red, its condition being similar to that observed in typhoid fever; sclerotic coats very yellow; has urinated freely; has not vomited since the blister; very thirsty; mouth dry. ℞—Purgative enema; a tablespoonful of a mixture containing Magendie's drops every three hours. 1 *p. m.*—Pulse 92; has not vomited; has had a black stool, which was shown to me; skin cool; great thirst; tongue, as before noted; less agitated. ℞—Wine of cinchona, diluted, a tablespoonful every hour. 7 *p. m.*—Pulse 88, very depressible; skin cool; tongue red and furred; has urinated; has not vomited.

September 25th, 7 *a. m.* Pulse 72; skin cool; sclerotic coats completely jaundiced; tongue partly denuded; mouth dry; great thirst; has urinated; suffers no pain; the urine, heated in a spoon, shows a deposit of albumen; considerable emaciation. 11 *a. m.*—Condition unchanged; pulse 92. 2 *p. m.*—I was sent for in haste, the patient having thrown up; the vomited matter was mucus, and contained black specks resembling coffee grounds; pulse 80. ℞—Soda water as a drink; chicken broth every two hours. 6 *p. m.*—Pulse 80; has not vomited again; general condition satisfactory; muscular agitation; tongue, in same condition as previously.

September 26, 7 *a. m.* Pulse 68; has urinated; general condition good. 6 *p. m.*—Pulse 66; tongue still furred; the sclerotic

coats continue to be jaundiced. ℞—Soda water and chicken broth, *ut supra.*

September 27th, 9 *a. m.* Pulse 52; slept well; tongue raw; very thirsty; has urinated. 6 *p. m.*—Pulse 52.

September 28th, 7 *a. m.* Pulse 52.

September 29th, 7 *a. m.* Pulse 50; patient doing very well.

History of a Case of Bilious Remittent Fever, Simulating Yellow Fever at the outset.

October 2d, 2 *p. m.* George ——, 31 years, native of Canada, was suddenly taken sick this morning at 10 o'clock; violent head and back aches; face very much flushed; eyeballs greatly injected; tongue slightly coated; burning heat; skin dry; pulse 120. ℞—Citrate of magnesia. 6 *p. m.*—Skin burning, notwithstanding copious perspiration; face red; violent headache; less back ache; tongue speckled, more coated than before; pulse 120; no epigastric pain.

October 3d, 7 *a. m.* Pulse 88; skin less warm; still a little headache; eyeballs injected, only at the internal and external angle, however. 11 *a. m.*—pulse 80; skin still very warm; face red; eyeballs bloodshot; pain at the epigastrium. ℞—Quiniæ sulph. gr. xvj, in two doses. 6 *p. m.*—Pulse 86; skin hot; but little headache; less pain over the epigastric region; slight perspiration, has urinated. ℞—The dose of quinine to be repeated.

October 4th, 8 *a. m.* Pulse 68; skin and temperature pleasant; the tongue is cleaning off; urine high-colored; bilious; gums coated with a creamy exudation. ℞—Sulphate of quinine.

7 *p. m.*—Pulse 68.
9 *p. m.*—Pulse 68. } The patient feels very well.

He left his bed on the 5th of October.

It would be impossible not to be struck with the similarity presented at the outset by these two fevers—the yellow and the bilious remittent. The initial symptoms were the same: intense head and back ache; countenance very much flushed; eyeballs greatly injected; tongue coated; parching heat of surface; skin dry; pulse 120, etc Certainly any physician, who while surrounded with yellow fever meets with a case like the foregoing one, ought to be extremely cautious in making a diagnosis, or in expressing a prognosis. The day following, however (October 3d, 7 a. m.), the pulse had fallen to 88. Doubt then became no

longer possible. The pulse never acts in this manner in yellow fever; it was therefore not surprising that a few grains of sulphate of quinine should have proved sufficient to establish convalescence. Taken ill on the 2d of October, at 10 a. m.. the next morning at 7 o'clock the patient had a fever, and on the 4th he was able to dress, move about his room, and take nourishment.

Before bringing to a close this memoir on yellow fever, I desire to call attention to Observations 3 and 4. It will have been remarked that the two patients, whose history is therein related (and who were the only ones affected with black vomit), could not tolerate the sweetened citric lemonade which, on the contrary, proved so grateful to the patients of Observations Nos. 1 and 2. Might not the repugnance manifested by the former have been due to a congestive condition of the stomach, and may not acid drinks, in like circumstances, serve as an important guide to the physician, with regard to the prediction of black vomit? Experience must decide this point.

I cannot refrain from calling attention to a few points concerning Observation No. 4. A competent reader will have remarked certain abnormalities in the pulse and in the condition of the tongue, which resembled, in a measure, that observed in typhoid fever. The explanation is to be found in the fact that the two fevers really did exist in this subject, who, besides, admitted having eaten excessively the day before being taken sick. At all events, the characteristic symptoms of yellow fever were so manifest, that doubt was impossible.

History of a Rare Case of Disease.

On the 22d of November last, I was called to see an old negro woman, aged 65 years, who had been living at the Bay for several years, at the residence of E. Forstall. It appears that, for some time back, the old woman had experienced a sensation of weight in the lower portion of the pelvis. She believed, and not without reason, that she was troubled with prolapsus uteri. When I saw her, some hours after the accident, the pulse was thready, her skin cold, and her voice greatly altered. Upon uncovering her, I was surprised at beholding the entire intestinal mass spread out between her thighs, the hernia having taken place through the vagina. Digital examination, per vaginam, revealed a lateral opening, an ulceration, of the size of a Mexican dollar.

I immediately endeavored to reduce the hernia through this opening, but I speedily discovered that this would be impossible unless the rent were enlarged. Having succeeded in this, I succeeded in restoring a few loops of bowel into the abdomen; the hernia was, however, speedily reproduced, owing to efforts at coughing which could not be controlled. In truth, I found that I was merely repeating, *in anima vili*, the task of the daughters of Danaüs. It was evident that gastronomy was the only operation which offered any prospect of success, and then I would be obliged to pull upon the internal loop of intestine, as though I were hauling up a line, so as to cause this enormous mass of bowel to return into the abdomen, loop by loop, as it had made its exit. Owing, however, to the prostration of the poor old woman, recourse could not be had to this last resort. She soon succumbed. I would have liked to examine the corpse, but I made no mention of my desire, persuaded as I was that I would have met with a refusal, from the husband and relatives.

BAY ST. LOUIS, December 9th, 1875.

AGAIN A FEW REFLECTIONS ON TRACHEOTOMY IN CROUP OR DIPHTHERIA.

BY J. C. FAGET, M.D.

I deem it necessary to publish these reflections, after the article of Dr. Holliday, on the same subject, in "The New Orleans Medical and Surgical Journal" of January, 1876.

Our most honored confrère, in his paper, has only considered the results of my own personal practice, and has placed them in a general statistical table, following those obtained in the principal cities of the United States as a whole. This is doing me too much honor.

Thus he presents things at page 505:

	Operations	Recovery.
American principal cities.....	325	84
New Orleans, Dr. Charles Faget, 1st series ..	15	3
" " " " " 2d " ...	6	0

Now 84 cures in 325 operations is an average of 1 in 4, and 3 in 21 is 1 in 7, from which it would appear that tracheotomy

has succeeded here only half as well as in other American cities. This would be strange if correct, for if there is a city in the world where surgical operations generally succeed, it is ours. Why should there be such a fatal exception with tracheotomy?

Fortunately for the reputation of New Orleans, other physicians besides myself have practised tracheotomy with results which have nowhere been surpassed, and it is no more than just that they should receive credit for it. Among others, the late Dr. Daret had formerly one success in three or four operations, late Dr. Alain, Jr., 1 in 1, and more recently Dr. D'Aquin had 3 in 6, Dr. Wiendahl 1 in 2. This is cure in half the cases, which is nearly as well as Trousseau in Paris.

In truth, others of our confrères and fellow-townsmen have operated a number of times without having as yet succeeded; but taking into consideration only the figures known to me, I arrive at the fraction $\frac{1}{2}$ as the average for our four confrères named above, and for myself $\frac{1}{6}$ fraction corrected, which is $\frac{1}{2} + \frac{1}{6} = \frac{4}{4}$. Thus our city rises to the level of the other principal American cities, i. e., cure in one-fourth of the cases.

Statistics, as we see, are very elastic, and in questions like those under examination we can make them show what we wish. But amidst the most fantastic combinations of figures imaginable, we must be careful not to bring forth erroneous numbers; *this Dr. Holliday has neglected!* In his statistical table, page 505, reproduced above, he gratifies me with a second series (of 6 operations all terminating by death); this is twice as much as there is. In fact, if the reader will glance over the latter part of my article of January, 1875, he will see—1st, that this second series is composed of only five cases; 2d, that the first of these cases terminated *without operation;* and 3d, that in the fourth case, Dr. Borde operated; therefore in this second series I have only three cases, and not six.

Now those who, from this rectification, may think that I seek and hope for, as before, a brilliant group of statistics of operations in croup, are greatly mistaken. Were I to remind some sarcastic persons of the fable, "Le Renard et Raisins" (The Fox and the Grapes,

> "Ils sont trop verts, dit il, et bons pour des goujats,"
> (They are too green, said he, and good for blackguards,)

I do declare that I care nothing for those brilliant statistics of

operation. I care nothing for it, because I share the opinion expressed by Dr. Holliday in his conclusion: "In conclusion, let me say that my own experience leads me to look with doubt upon the great success of this operation." I also look with doubt upon the great success of this operation, and the reason is very simple.

An operation which, after all, should be considered as a last resource in the treatment of a disease very dangerous in itself, as an ultimate resource, the only object of which is to oppose one of the most destructive elements of the disease, *asphyxia*, such an operation cannot be expected to furnish brilliant results to those who undertake it conscientiously; that is to say, forgetting themselves entirely, to act only according to their duty. (Honi soit qui mal y pense!)

I ask: Is not aiming at successes, at brilliant statistics of operations in the tracheotomy of croup and diphtheria—is it not risking to be driven into one of the two alternatives, equally to be regretted, either avoiding to operate in certain cases because the chances of success seem too doubtful, or operating too soon in other cases when by waiting a little the patient might have got well without operation? It is important to remember that in diphtheria, with or without general poisoning, when the larynx is invaded by false membranes, cure without operation is not absolutely rare.

In a letter from Barthez to Rilliet, published in the *Gazette Hebdomadaire* of Dec. 2d, 1859, we find the following figures on the results obtained at "Hôpital St. Eugenie during five years, from 1854 to 1858 inclusively. I herewith bring them together in tabular form.

Years.	Number Cases	Operated.	Recovered.	Non-Operated.	Recovered.
1854..... ...	17	13	1	4	4
1855.....	18	16	2	2	2
1856.....	18	17	3	1	1
1857.....	33	22	2	11	7
1858.....	186	124	18	62	36
	272	192	26	80	50

Thus, in five years, 272 cases of diphtheritic croup have given 26 + 50 = 76 cures, 26 of which with operation, 50 without. In

other words, the proportion for the operated was 1 in 7.3, and for the non-operated 1 in 1.6.

Evidently it would be absurd to conclude that it is better not to operate. It is clear, in fact, that all things being equal, the chances of cure are greater, as long as the exudation has not extended beyond the pharynx, for it is only when the larynx is invaded that an operation may become necessary, and, when it is so, it is evident that the patient is worse, and consequently the chances of cure have lessened.

In large families we sometimes observe facts analogous to those seen in the wards of a hospital. The following took place lately in one of the oldest and most respectable families of my practice. Six persons (four children and two adults) were successively attacked by diphtheria in the space of a few weeks. In each case general poisoning was evident. The first child died after tracheotomy, and another without operation; the other four recovered, but not without great risks. At a given time I awaited a general disaster for this family, one of those devastations which sometimes occur in like circumstances.

One of the adults had the larynx invaded early; the voice was completely extinct; the air passage remained sufficiently free, notwithstanding several threats of suffocation, so that tracheotomy, thank God, was not needed in her case. But my anxiety can be imagined at this juncture, when I thought of the small chances of success of tracheotomy among adults. Dr. Cohen, after mentioning several cases in his pamphlet, adds, "no one of them resulted in recovery." This was particularly the result of Trousseau's experience, that tracheotomy never succeeds in croup among adults.

On another practical point, what I have observed on this occasion does not accord with the experience of the eminent professor; it is about his despairing prognosis when the nasal fossæ are invaded. Well! the two children who recovered in this family had their noses affected to an extreme degree, and with very long tenacity, at the same time that the ganglia of the neck were enormous. In all, the convalescence was tedious and prolonged.

In the child that died without being operated upon something remarkable occurred. Immediately after the first mishap I hesitated to propose tracheotomy, which doubtless would hardly have been accepted, the child was taken during my absence with

a spell of suffocation, during which it was thought several times he would die. He finally succeeded, after a terrible struggle, in disengaging from his larynx a large mass of false membrane, after which respiration was at once restored. This false membrane, unrolled and carefully examined, represented a hollow tube, looking like a cylindrical fragment of large macaroni; it was as long as the trachea of a child of that age, and was bifurcated at its inferior part, showing that it came from the whole trachea and the beginning of the bronchial tubes.

The child had evidently been greatly exposed to immediate suffocation while this diphtheritic tube was entangled in his larynx, a risk which would have been avoided had tracheotomy been practised a few hours before. Unfortunately my regrets for not operating did not last long; it soon became evident that the bronchial tubes were deeply invaded, and death by slow asphyxia happened in the twenty-four hours.

It is, perhaps, in the case of a child affected with diphtheritic croup, that the judgment of the practitioner is submitted to the most difficult test:—When and in which cases must he operate? Is he not compelled to operate in certain cases, and in others must he not absolutely abstain from it? In the statistical tables furnished above, we have seen that out of 192 children who were operated upon 26 recovered, but where is the proof that out of the 166 who died some might not have recovered had they not been operated? And of the 80 non-operated 30 died; where is the proof that out of the 30 who died some might not have been cured had tracheotomy been practised?

Every physician knows that children operated upon under the most despairing circumstances have recovered, whereas others have died after being operated upon in apparently the most desirable conditions. All agree that the disasters during the first years of tracheotomy must be ascribed especially to the late hour at which the operation was resorted to; because we all admit that there is advantage in operating as soon as the well-weighed circumstances of each case will require and permit.

In conclusion Dr. Holliday says, page 508, "Suffice it to say that every judicious practitioner will weigh carefully all the symptoms any case he may be called upon to treat, may present, surround himself with every reasonable precaution, and then let his own judgment be the monitor."

Very well! but if I am not mistaken, judgment in order to be

correct must by no means be influenced, and will a physician apply sound judgment when called upon to pronounce on the opportunity of an operation which he fears to undertake?

When I ask this question, it naturally does not refer to surgeons; because tracheotomy should not present difficulties capable of making them hesitate a moment; but I refer to physicians like myself, especially those in the country, who cannot always have a surgeon at hand who will come to their assistance, and it is then that I am persuaded that those small details of the operation which have so often aided me, when I was called upon to practise tracheotomy, would not be useless—if, however, I could succeed in having them well understood.

Dr. Holliday's article shows me that my efforts have been *useless* at least with him. Therefore I think it necessary to go back to them in a few words. According to him, my method is simply this, at page 506: "Our confrère, Dr. Faget, here insists upon fixing the cricoid cartilage firmly with the *forefinger* at the upper angle of the wound, and then making the incision into the trachea and the free division of two or more of its rings, so as to avoid difficulty in the subsequent steps of the operation. No doubt this facilitates the operation appreciably."

Indeed, the hand of a surgeon would be very steady that would fix firmly the trachea with the forefinger, and therefore I deem it necessary to insist upon the use of the *thumb also.* Is it not one of the Bérards who, according to Trousseau, missed the trachea and opened the œsophagus?

Thus I expressed myself at page 535 (January, 1875): "The trachea being sufficiently denuded, I introduce the thumb and index finger of my left hand, from below upwards into the upper angle of the incision, and catch hold of the cricoid cartilage, which I apply and steady against the vertebral column. Then, and only then, I thrust the point of the bistouri into the trachea, between the thumb and index holding the cricoid." This gutter or channel formed between the thumb and index finger is of real practical value, especially *at night*, because it leads the back of the bistouri immediately to the inferior edge of the cricoid.

This is not all; please read at page 530 of the same article of January, 1875: "Supposing, however, that the trachea should be sufficiently opened, all is not done," as Trousseau himself says at page 421, *Clin.*, Vol. I.

"The next step of the operation, if not the most difficult, re-

quires at least the greatest coolness and presence of mind;" it is the introduction of the dilator in the tracheal incision. Now it has occurred several times to Trousseau himself to miss the incision of the trachea, and to find that the dilator was between the muscles, or "that only one branch of it was in the trachea." (Page 421, Vol. I., *Lecons de Clinique.*)

This is why, after the trachea is open, I do not yet let the cricoid go; I still hold it with the thumb and forefinger, both to keep the trachea steady and to have, as it were, a *sensitive* grooved probe to direct the dilator. I am then particular to bring together the two fingers so as to form a gutter or channel and, in the same way that my bistouri was guided, I feel sure that the dilator, *thus directed*, cannot miss the incision of the trachea.

I allow that it may be more elegant, more brilliant (jucundiùs), to be satisfied with fixing the trachea with the end of the forefinger; but my aim in my operations was only to proceed faster, and especially with *more certainty.* I have therefore dropped the jucundè of the old surgical device, "*Citò! tutò! et jucundè!*" and feeling content with *citò et tutò* comparatively, I have taken as an epigraph to my paper, "*Citiùs et tutiùs.*"

Doubtless Dr. Holliday has regretted for tracheotomy the jucundè of old surgery, and thus has arrived to attribute to me an operation rendered quite simple surely, but which seems to me less sure, and which moreover is not mine. I will therefore retain the one which I have adopted and described, and will not allow myself to be charmed by the one which our confrère has substituted for it—through inattention.

CURRENT MEDICAL LITERATURE.

PRACTICAL MEDICINE.

BY S. M. BEMISS, M.D.,*

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The method pursued by the author of the following paper is worthy of the highest commendation, and might be imitated with decided advantage to the profession on this side of the Atlantic.

* The great amount of valuable matter laid over from the January issue of this Journal compels us to limit the space for selected articles in the present number.—EDITOR.

THE TREATMENT OF QUINSY.

It has for several reasons seemed desirable to know what is the actual practice of the profession in their treatment of ailments; and in order to ascertain this the Editor of the *Practitioner* issued, some little time ago, the first of a series of circulars which it is his intention to send out from time to time. This first circular inquired as to the management of a well-marked malady, about the diagnosis and prognosis of which there is little or no doubt. To this circular 112 replies have been sent in, one of them coming from Norway, and although this is by no means a large proportion, the Editor feels encouraged by the result, and takes this opportunity of returning his most sincere thanks to those gentlemen who so kindly complied with his request. The reception they have given to his scheme is so gratifying that ere long a second circular will be issued. The following analysis has been made of the different returns, and though such a statistical account is necessarily somewhat dry reading, we trust that it will not be found entirely without attraction for our readers. In some parts the information is not so definite as our readers may desire, and in the future we will endeavor to make the return more exact. In order to do so it will be necessary to modify the form of the questions in such a way that the answer will entail somewhat more trouble on the responding gentlemen, and we beg those who have so far so willingly aided us, to forgive this, as we do it in the interests of our readers.

The first of the questions put is this: "What are the drugs you generally prescribe in this disease?" As might be anticipated, the treatment is far from uniform. The widespread belief in the efficacy of guaiacum in tonsilitis is evidenced by its having the largest proportion of supporters, namely, 36. The doses and the forms of the drugs used will be given under the next division—the second question put. Next followed the chlorate of potash with 30 supporters, 11 of whom prescribe it in combination with the nitrate of potash, and 8 with perchloride of iron. Aconite is third on the list with 27 supporters, 2 of whom give it along with belladonna. These three are the chief remedies in use, being given in 83 per cent. of the whole returns, or 93 out of the whole 112 who have replied to our questions.

Next, but at some distance, come saline purgatives, which find favor with 19; and then saline diaphoretics, advocated by 11 of the replying practitioners. After these come quinine, used by 6, while 4 more give it with iron. With 5 gentlemen the sulphate of magnesia with tartarized antimony forms the favorite measure; with others mercury with belladonna and the sulphide of calcium is prescribed. The least generally used measures are hydrochloric acid with bark (3); sulphate of magnesia with

sulphate of iron (2); actea racemosa (2); Dover's powder (1); carbonate of baryta and opium (1); belladona and chloride of barium (1); sesquicarbonate of ammonia (1); and mercury with turpentine (1).

The second question: "What preparations of these drugs and what doses do you generally prescribe?" elicited an equal diversity of practices, so far as the answers will permit of their being tabulated.

To take the most favorite measure, guaiacum, first, it would appear that the tincture in doses of from half a drachm to a drachm every 2 or 4 hours is in most use. In 9 answers it is given in half-drachm doses every 2 hours; by 2 every 4 hours; while 5 give a drachm every 4 hours. Others again prefer guaiacum powder, which is prescribed in half scruple doses by 6, and in scruple doses by 2; 3 hover betwixt these doses, while 5 give 10-grain doses each of guaiac powder and chlorate of potash together, and 1 prefers 2 scruples of guaiac and 10 grains of the chlorate of potash. Little or nothing is said about the frequency of these doses.

As to the manner in which chlorate of potash is prescribed, it seems that 6 give 15 grains every second hour, and 2 ten grains at this interval. Three give the dose of potash with 5 minims of dilute hydrochloric acid. With 2 the dose is 20 grains every third hour. The combination of the chlorate with the nitrate of potash in 10-grain doses of each, at intervals of 4 hours, found 3 supporters, and 10 grains of the chlorate with 5 of the nitrate also 3. Others prefer to give the chlorate with perchloride of iron, 4 giving 15 grains of the one with 15 minims of the other, while the other 4 prefer 15 grains with 20 minims.

In the administration of aconite the minim dose at hourly intervals found most advocates—namely, 15; while 4 more give 1 or 2 drops every hour. The old-fashioned plan is followed by others; 2 give 5 drops every 2 hours, and 1 ten drops every 4 hours.

Of the least common remedies of which any account of the dose is given, it appears that 9 give the perchloride of iron in doses of from 10 to 20 drops; 1 from 20 drops to half a drachm; and 1 gives half a drachm 3 times a day, Of those who prefer the sulphate of magnesia and tartar emetic, 4 give drachm doses of the sulphate with 15 minim doses of antimonial wine. Of sesquicarbonate of ammonia the dose is 5 grains; 1 giving it alone, while 2 add it to their other measures.

Quinine in grain doses finds 3 advocates, and the tincture of cinchona in half drachm doses a solitary friend. Of the sulphide of calcium the dose is one-hundredth of a grain. The defective answers are conspicuous here, and yet it is an important part of the inquiry, as our readers will feel. Of those who advocate salines in different forms, 3 only say how they prescribe—namely, 15 grains of bicarbonate of potash every six

hours. If our readers will but give us their friendly aid, we hope to make this section more perfect in our future analyses.

The third question is: "What local treatment do you employ?" The variety of measures adopted by various practitioners is here again conspicuous. Poultices find most favor, and are advocated by no less than 40 of our answerers. Gargles make a close second with 39 supporters. Steam inhalations are largely used—namely, by no less than 29. The application of nitrate of silver, either in stick or in very strong solutions, is advocated by 17 practitioners, turpentine stupes by 12, ice by 9, leeches by 6, belladonna liniment by 5, the perchloride of iron 4, tannin and glycerine 3, cold wet compresses 3, and compound camphor liniment 1. It is impossible to give the individual practices of the different practitioners in their use of these varied measures.

The fourth question is: "What diet and regimen do you recommend?" and is answered by a large proportion. A simple diet of milk, slops, with a little beef tea, is advocated by 66 of our correspondents, while a stimulating diet finds favor with no less than 30. In forming these two sets of respondents we must state, in order to be clear, that several of these last 30 are also ranged under the first class. We have given the exact numbers of the supporters of each plan according to their answers. As to separating the treatment into that suited to the pyrexia and that suitable to the convalescence, 6 allude to the second stage and advocate tonics in it, but there are no further distinctions made.

Such are the conclusions to be arrived at in the first section of our questions. The latter half comprises rather more detailed interrogatories, which, however, are not without interest.

The general question of this section stands as follows: "How is your choice of drugs and line of treatment modified by the following circumstances?—(*a*) the constitution of the patient; (*b*) age and sex; (*c*) symptoms; (1) pain in throat; (2) swelling in throat; (3) pain in limbs; and (4) constipation.

A considerable number of our correspondents stop their answers at this point, giving a generally negative answer, such as, they are not influenced by the matters mentioned. Others again give careful answers.

As to (*a*) "constitution of patient" (strumous, rheumatic, gouty, etc.), answers were furnished by 51 practitioners, whose replies were chiefly of a general character. Struma was alluded to in 14 answers, rheumatism in 9, and gout in 7; but little of a definite nature was said, or to which allusion can be made here. One gentleman remarks that the perchloride of iron with chlorate of potash "acts like a charm" in strumous cases; and a second says this combination is very good in such cases.

(*b*) "Age and sex" receives special notice by a few, who confine themselves to the general statement that a less dose is required for women and children than for adult men. One refers to the need for stimulants in the case of aged persons, 1 of qui-

nine in cases in advanced life, and 1 refers vaguely to the desirability of attending to uterine disorders.

(*c*) "Symptoms" evokes a much more general and also more definite response.

The first question under this head is (1) "Pain in throat." The measures resorted to for the relief of this symptom are as diverse and various as any yet mentioned. Poppy fomentations (9) and blisters (9) bracket for the first and second places; leeches (8) and morphia (8) are bracketed third and fourth, while poultices follow with 7,* and incisions 6. The less commonly used measures are—the cold wet compress with 3 advocates, cotton wool 2, chloral 2, bromide of potassium 2, while hot water is relied upon by 1; the æther spray by 1, iodine vapor and steam 1, while 1 is strongly in favor of hot hops.

(2) "Swelling in throat" elicits a fairly general response. The local application of heat and moisture seems in most favor, for hot fomentations take the first place with 14 supporters, steam inhalations follow close with 13, while belladonna liniment finds favor with 9. Ice is relied on by 4, while 1 advocates spongiopiline, and 1 advises no hypnotics.

It will seem that here, as in the answers to the general questions of local treatment, heat and cold both have their advocates, cold however, being markedly in the minority.

(3) "Pains in limbs." This question is answered definitely, but by a small proportion, the general answer being that this symptom is relieved by the treatment given above. Of the definite answers 17 advocate the use of Dover's powder, especially at bedtime, and 7 advise hot baths. Iodide of potassium finds 4 supporters, hyd. c. creta 3, aconite 2, bicarbonate of potash 1, and colchicum 1 advocate.

(4) "Constipation." This symptom meets with pretty general attention. As to the use of different measures to relive this condition, no less than 35 gentlemen resort to saline purgatives, 12 prefer enemata, 5 put faith in calomel and jalap, and other 4 in senna. Colocynth has 1 supporter, castor oil 1, croton oil 1, pulv. jalap co. 1, calomel and James's powder 1, while 1 uses scammony, giving from 4 to 6 grains in milk. Several, in answer to this question, state that the guaiac is sufficiently purgative.

The last question is: "To what extent do you resort to surgical interference?"

The diversity of practice of different medical men is well seen in the answers given to this question.

Scarification to arrest the advancing tonsillitis has 21 supporters, who prefer it to any other form of local treatment. In some answers the practice is deprecated.

As to opening the abscess it finds 62 advocates, of which 4 say that they resort to it it as soon as possible, while 13 state

* These are all that mention poultices here. It will be seen by looking back to question 3, that poultices have no less than 40 general advocates.

that they almost never use the knife. In no less than 17 answers it is stated that it is never required, while 4 state that they have never seen an abscess form since they have adopted the guaiac treatment. Such are the conclusions furnished as to the actual practice of the profession in their treatment of an affection which is so easily diagnosed, and about whose progress and prognosis there exists no difference of opinion. It will be seen that some hold to the old-fashioned practice of sulphate of magnesia and tartar emetic, while others advocate minim doses of the tincture of aconite every hour. In this latter method we see the growing importance of maintaining a steady and regular action by frequent repeated doses, instead of the distinct blows at intervals which was the prevalent practice of yore. The latter practice is supposed by some to savor of a *soupçon* of homœopathy, but such is not the case. The importance of substituting the small but continuous dose for large doses at longer intervals is as well recognized by orthodox members of our profession as by the homœopathic practitioners; and the silent pressure of opinion around us is in favor of such usage in the treatment of many maladies.

In estimating the number who use aconite, it must be borne in mind that the number 27 does not comprise merely those who use aconite solely, but includes the whole number of those who mention it at all, as part of their measures. It will be seen that the number of advocates of every measure in the aggregate amount to 140, or 28 more than the whole number of returns, while 168—or 56 more than the whole returns—are given as the total number of answers to question 3. The numbers represent the answers given, and it would be impossible to arrange the answers in any other way, without returning them to the different respondents for more accurate details; a measure which is simply out of question, for the valid reason that the large majority of the returns are unsigned.

Since the above has been in type, 8 answers have been received from the United States of America. Very curiously guaiacum is never mentioned by them in any form. The most favorite remedy is quinine, which is recommended by 5 writers, one of whom mentions that sulphate of cinchonidia forms an efficient substitute. Aconite and belladonna are advocated by 3 writers, one giving them alternately. Chlorate of potash with iron 1, veratrum viride 1, and iodide of potassium and quinine is strongly advocated by 1. In one case ipecacuanha is recommended along with aconite and morphia. The tincture or fluid extract of Phytolacca in 10 drop doses is considered by 1 to be almost a specific. As to the dose, 1 gives the aconite in 10 to 15 minim doses every three or four hours; another 20 minims every third hour. The iodide of potassium is given in doses of from 20 to 60, and even 100 grains three times a day, with 2

grains of quinine every third hour. As to local treatment they are generally sceptical. Hot fomentations find 3 supporters, ice 2, one icing the food; 2 use gargles of chlorate of potash, 1 water compresses, 1 the nitrate of silver, and 1 external application of iodine. Leeches are also mentioned by 1 respondent. The diet and regimen seem to be in America more liberal than in Great Britain, for 3 advocate as much fluid food as can be taken, one of them adding nutritive enemata and free supplies of native wine. The others advocate fluid food. 1 has the food iced. As to the constitution, 3 just allude to it as of little importance. One feeds up the strumous, while another gives sulphide of calcium with iron; 1 advocates alkalies in the gouty and rheumatic, and another the iodide of potassium, while a third thinks the hepatic functions should be attended to. As to age and sex, only the general rule is alluded to by 3. For the pain in the throat 3 advise ice, 1 incisions, 1 fomentations with iodine, and 1 opium or poppy head fomentations. For the swelling, 2 use iodine and belladonna externally. For the pains in the limbs aconite and Dover's powder are recommended by 1, while the advocate of iodide of potassium finds it take care of them. As to constipation, 1 uses the citrate of magnesia, 1 saline purgatives, and 1 mineral waters; the others give a general answer. As to surgical interference, 4 let out the matter when an abscess has formed, 1 never uses the knife, and 2 are chary of its use. Scarification is employed by two of the respondents. The chief points of difference are that the practitioners of the States do not use guaiac as do the British practitioners, and that the Americans have a more liberal dietary for their quinsy patients than we have.—*Practitioner.*

HEMATURIC MALARIAL FEVER.

By W. B. Tacket, M.D., of Cuthbert, Ga.

This disease being now the great scourge and dread of malarious regions, and as everything that throws even the faintest ray of light on the subject is read with the keenest relish, I am induced to report my last two cases. Drs. Johnson and Bruce have lately written exhaustive and valuable articles on the disease; both having had a fine field for investigation, and being eminent men in the profession, they have given all the history and pathology of the disease necessary to enlighten the uninformed, and to their articles such are referred, my object being merely to report treatment as above stated.

Mr. S. A. G., aged thirty years, having had chills and fever all his life, was taken, October 20th, with a chill, coming on about night, and immediately began to pass large quantities of bloody

urine, the skin and conjunctiva becoming a perfect saffron color in an incredibly short time. It was daylight on the 21st when I reached him, being twelve miles distant. I found him, also, vomiting bile incessantly, with frequent and copious dark discharges from the bowels. I immediately put him on ten-grain doses of iodide potassa and ten drops spirits turpentine every four hours. I hoped to relieve the harassing nausea by a blister over the epigastrium. But in this I signally failed, notwithstanding two ounces of fresh blistering cerate were spread upon a cloth six by eight inches, and allowed to remain on for twenty-four hours. I was anxious for the blister, having no "fears of danger from an aggravation of the urinary trouble." I found, however, that an occasional dose of sulph. morphia and ice had a partial effect in calming the stomach. But it is vain to attempt a compromise with this rebellious organ until the graver symptoms of the disease have passed. I also gave him a three-grain pill of sulph. quinine every three or four hours, as the stomach would bear it. And here I must, with becoming modesty, differ with Dr. Bruce on the administration of this invaluable drug. If the disease is of a malarious origin, as all admit and its name implies, and quinine the only reliable antiperiodic in the known world, and one of the infallibles in the elimination of malarial poison from the system, to say nothing of its tonic effect and as a supporting measure, then why not give it? Because, he says, it makes the patient apparently worse. But how many articles of the materia medica make sick people apparently worse, when we know that it is only apparent, and do not withhold them on that account. The surgeon's knife is not to be spared because of the pain it inflicts.

On the third day of the attack he threw up enormous quantities of matter of an indigo-blue color. I then suspended for the day the iodide potassa, and substituted small doses of calomel in its place, floated upon water, hoping to change the character of the vomited matter, and which had the effect of bringing it back to a yellow, healthy looking bile. The calomel was not given in sufficient doses to defibrinize the blood any more than was being done already; for this red urine is the débris of the red corpuscles of the blood, broken down and disintegrated, and not the coloring matter—the elements of blood before it is formed as such, as was once, by some, supposed. After this the patient was put back upon the former treatment, with milk punch, squirrel soup, egg-nog, etc., as his stomach would bear them. In three or four days the blood entirely ceased to appear, giving place to a perfectly black urine, which became a little lighter-colored day by day, until it resumed a healthy amber color, the febrile symptoms abating in the same ratio, and his appetite slowly returning. To make his convalescence more certain, and prevent a recurrence of the disease, he was put upon the following—

℞—Quiniæ sulph., - - ʒij,
Acid. arseniosi, - grs. iij,
Strychniæ sulph., grs. ij,
Ferri sulph. exsic., - ʒj. M.
Fiat in pil. no. lx.
Sig.—One pill three times a day.

The other case was treated precisely, or as near as could be, like the first, both being young men, and nearly in the same condition. They both made a good recovery, and much more rapidly than any cases I ever treated before. Of course, two cases do not constitute a sufficient test in any disease; but when a certain course is followed, and a signal success had, the mind is strongly prejudiced in its favor, and great encouragement is given to pursue the same course in similar cases, should they occur again.

In the treatment of this disease failure to cure has been almost, if not quite the rule in all the severest cases. Dr. Bruce attaches all importance to nitric acid, and seems almost solely to depend upon it, and it may be powerful for good, for aught I know; but there can be no doubt of the foregoing plan of treatment, if two typical cases can be regarded as a criterion. I hope other members of the profession who live in malarious regions, where abundant opportunities will likely present themselves, will try the remedy, and report success or failure.—*Medical and Surgical Reporter.*

WHEN WE MAY BLEED, AND WHEN WE MAY NOT BLEED.

Part of an Address delivered before the East Sussex District Branch of the British Medical Association

BY HENRY MOON, M.D., F.R.C.P.,

Physician to the Sussex County Hospital.

In therapeutics there has been an immense improvement. I will only take one instance among many others, that of blood-letting. During my apprenticeship at a large London institution, my chief employment from day to day was to bleed and cup those patients who had been seen by the physicians and surgeons. Blood-letting was then used as a remedy whenever there was an increase of the temperature and a quickening of the pulse; and, doubtless this indiscriminate irrational application of so bold a remedy destroyed thousands of lives annually. In some cases, however, blood-letting, with the light of modern science, is still a remedy of great practical usefulness.

We may bleed in, for instance, cerebral hemorrhage, if the impulse of the heart be strong, and its sounds loud; if the pulse be regular, and no sign of commencing œdema of the lungs exist, we should bleed without delay. Here a judicious timely

bleeding may prevent the extension of the paralysis from the cerebrum to the medulla oblongata, which is essential to life.

In order that as much arterial blood as possible may enter the brain, we must try to facilitate the escape of venous blood, without, however, diminishing the propelling powers too much.

We may not bleed when, on the contrary, the heart's impulse is weak, the pulse irregular, and rattling in the trachea is already begun; we may be almost certain bleeding will do harm, since the action of the heart, which is already weakened, would be still more impaired, and the amount of arterial blood going to the brain would be thus still more decreased. When these conditions occur, the indications require just the opposite treatment, in spite of the original disease being the same, and being due to the same cause. Here, by the use of stimulants, we must strive to prevent paralysis of the heart; frictions, sinapisms, wine, ether, and musk, instead of bleeding, are called for.

We may bleed in acute croupous pneumonia, when the pneumonia has attacked a vigorous and hitherto healthy person, and is of recent occurrence; the temperature being higher than 105° Fahr., and the pulse rating at more than 120 beats in a minute. Here danger only threatens from the violence of the fever; and a free venesection will reduce the temperature and lessen the frequency of the pulse. In those, however, who are already debilitated, bleeding increases the dangers of exhaustion. Should the fever in pneumonia be moderate, blood-letting is not indicated, even in healthy and vigorous individuals. It cannot cut the fever short; indeed, the fever is more apt to persist, although in a somewhat more moderate degree, so that the enfeebled patient is thrown into greater danger than if he had to pass through a more violent fever, but with unreduced strength.

We may bleed in fluxion of the lung, arising from excessive cardiac action threatening life. The result of a bold venesection here is astonishing; as soon as the volume of the blood has become lessened, the pressure diminishes in the arteries (as it depends upon two forces: first, the energy of the cardiac contractions; secondly, the fulness of the cavities of the heart). The patients often breathe more freely during the operation, the bloody foam which they were expectorating vanishes, and life may be rescued from the greatest dangers by aid of the physician.

So also in collateral fluxion of the lung (acute hyperæmia) during the course of acute pneumonia, pleurisy, or pneumothorax, we may bleed. Here a large part of the dyspnœa depends upon the overfilling of the capillaries and swelling of the vesicles in the portions of the lung unaffected by the inflammation.

When patients die in the first stages of pneumonia or pleurisy, or shortly after the air has penetrated into the pleural sac and compressed the lung (pneumothorax), they die of collateral fluxion (hyperæmia) and collateral œdema. If collateral fluxion

threaten life during the progress of these diseases, if the patient be attacked with intense dyspnœa, and a moist *râle* become audible; if the sputa become serous—the danger is imminent. Then pay no regard to the small pulse, or rather, look upon it as a new reason for bleeding; for thereby the force of the heart is diminished, the pressure in the arteries of the hyperæmic parts of the lungs is also reduced; the capillaries are less full; the transudation of serum, which was threatening, or had already set in, does not occur or ceases; and here, too, we often see the patient breathe more freely and deeply when the blood is flowing.

Since, however, in by far the greater number of cases venesection has an unfavorable effect upon the main disease by increasing the danger from exhaustion and impoverishment of the blood, we should not be led astray by these striking instantaneous results, so as to bleed without necessity; that is to say, unless life be threatened. Should œdema threaten in the course of disease of the heart, immediate danger to life may demand a diminution of the volume of the blood, and the relief consequent on venesection is usually beneficial.

The blood of persons of long-standing disease of the heart is poor in fibrin and albumen, and has great tendency to form serous transudations. Venesection renders it thinner, and, therefore, bleeding should never be used in these cases but under the most pressing necessity.

Blood-letting should never be used in the hyperæmia of asthenic fever, no matter how great, and though the œdema threaten life.

In endocarditis, as a rule, bleeding is decidedly injurious; still a condition sometimes exists where the indication as to symptoms calls for venesection. In cases where overcharge of the pulmonary circulation imperils life by threatening œdema of the lungs, and demands prompt relief by diminution of the volume of the blood. A great acceleration of the pulse and signs of feebleness, however, in the action of the heart indicate the administration of digitalis. Should palsy of the heart threaten, give stimulants boldly.

If, gentlemen, this imperfect and very limited survey of our store of wealth in knowledge be in any way correct, the question may well be asked, How is it that some persons prosper, ride in splendid equipages, and become rich, who regard none of these things?

The longer one lives, the more proof there is that he possesses many of the prominent faculties of the untutored savage within him, and there is no one perhaps more predominant than that of credulity associated with whatever else he may possess. A small proportion only of the human race exercise thought, and really seek after truth. The confidence, sympathy, and support of this class may be anticipated by all right minded and hard-working men; whereas the majority by far are too much occupied in

many ways to regard physical science and really to appreciate and to think on subjects of this character. The innate credulity of his nature breaks forth, becomes clamorous, and must be fed: to such a person, the truth would be no more acceptable than the doctrines of the Temperance Society would be to a spirit-drinker, because it would cripple and fetter the exercise of the darling faculty of credulity.

To this majority, however, in all ages, have sprung up men willing to gratify their tastes, and such men are often rewarded, from the Holloways downwards, by a short cut to practice and reputation, and they become rich; but do you know any instance where men of this kind have contributed anything whatsoever to physical science? Therefore, to persevere in the love and search of truth, despite the many temptations to deviate from the straight and narrow path, we must be prepared by God's help to sacrifice self, and, if need be, fall short of the wealth which the charlatan possesses, with a noble consciousness, however, that we are doing our best, not for self only, but for the extension of science, and therefore for our fellow-creatures.—*British Medical Journal.*

ON THE TREATMENT OF CHRONIC DYSENTERY.

In the *British Medical Journal* of December 25th, there is a paragraph referring to the treatment of chronic dysentery with Benzoin. Four years ago, when I was visiting physician to the Seamen's Hospital, Greenwich, I made several trials of the compound tincture of benzoin in the cases of chronic dysentery that came under my care. I was not aware that the drug had been tried before in this form of disease; but its use was suggested from its effects on mucous membranes generally. The results of my experiments were, that benzoin had no effect in checking the disease or in alleviating the symptoms, and that it was not comparable to small doses of ipecacuanha frequently repeated. Possibly the cases treated by Mr. R. Donaldson differed in some respects from the cases under my care at Greenwich; and I have no intention of questioning the accuracy of his statements. I only wish to state that the medicine has been tried in this country, and that in my hands it has not succeeded. I found it necessary to exercise great caution in admitting the virtues of any drug in this disease, and it is natural in so chronic and wearing a disorder that any remedy is looked to with expectation by the patient, who is always hopeful that some remedy has been found to alleviate his misery; at least this was my unvaried experience in the numerous trials that I made of various drugs.

The conclusion at which I arrived was, that the disease was best treated by rigidly keeping the patient at rest in bed, in a supine position; by carefully regulating the temperature of the

room to about 62° Fahr.; by restricting the diet to few and simple foods, chiefly milk and mutton; and by administering, at frequent short intervals, every three hours, small doses (three to five grains) of the powdered ipecacuanha. If nausea were produced, the dose was diminished or limited for a time; as I consider that it is very desirable to avoid inducing any disinclination to food. Alcohol in any form very decidedly aggravates the symptoms, and it was always strictly forbidden. These conclusions perhaps contain nothing new, but they result from the trial of many drugs, all of which were found far inferior to ipecacuanha.—(Reginald E. Thompson, M.D., in the *British Medical Journal.*)

EXTRACTS FROM DR. MARY PUTNAM JACOBI'S "REVIEW OF PROGRESS IN THERAPEUTICS."

The use of *atropine in hectic sweating* that has become rapidly generalized, was principally brought into notice in 1874. In the *Lancet* (July 25), 16 cases are related, of which 4 were permanently cured; but in 4 others, the sweating returned when the medicine was discontinued. At first $^1/_{80}$th grain was given, and increased to $^1/_{60}$th, then to $^1/_{50}$th of a grain—the latter being the maximum dose. An article in *Virchow's Archives* (Bd. lviii, 1873) gives the results of experiments upon 75 patients affected with sweating from various diseases. Of 15 cases of cheesy pneumonia, 6 were cured and 7 ameliorated; of 48 cases of phthisis, 22 were cured and 21 ameliorated; of 8 cases of rheumatism, 5 were cured, 2 ameliorated; and in 2 cases of trichinosis, the sweating was arrested. The atropine was given in pills made up with extract of gentian. It is supposed to act by contracting and restoring the tone of the blood-vessels of the sudoriparous glands.

A similar effect upon vascular tonicity is to be inferred in two cases of exophthalmic goitre reported to the *Lancet*, where the exophthalmus and palpitations were both relieved by 5-drop doses of the tincture of belladonna.

We have finally to quote a case of excessive salivation successfully treated by atropine (*Berlin Klin. Wochen.*, June 28, 1873; *Am. Jour. Med. Sci.*, Jan, 1874). After an attack of apoplexy, a patient was affected with left hemiplegia and with salivation to the extent of a pint in 24 hours. Subcutaneous injection was made over the sub-maxillary gland of $^1/_{44}$th of a grain of atropine. The secretion of saliva ceased in 7 minutes, not to return for 14 hours. This fact is merely the therapeutical application of an experiment made long ago by Heidenhain, who ascribed the result to paralysis of the chorda tympani. It is well known that electrical irritation of this nerve causes an abundant secre-

tion of thin saliva. From the history of the case we may perhaps infer that the cerebral extremity of its fibres, mounting to the brain in the facial, was irritated in consequence of the cerebral hemorrhage, and that the flow of saliva resulted from this irritation. This hypothesis would explain the beneficial influence of atropine, but at the same time leaves no reason to hope anything from it in cases of salivation depending on other causes, as vaso-motor paralysis, or elimination of some poison from the blood.

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I would notice that the subcutaneous injection of such a substance as quinine, especially if in acid solution, cannot be relied upon to produce instantaneously an effect proportioned to the entire dose, for the reason that absorption is by no means instantaneous. Its rapidity varies according to the degree of local irritation that will have been caused by the injection, and which, as I have assured myself, is sometimes sufficient to arrest absorption altogether. Again, in dogs, unless the injection be made very deep—preferably into the substance of the gastrocnemius muscle, as suggested by Claude Bernard—the solution is liable to spread between the skin and loose subcutaneous tissue, without penetrating more deeply. The skin afterwards sloughs. It is in order to avoid such irritation that Dr. Lente associates carbolic acid with quinine, in the proportion of ℥v to f℥j of an aqueous solution containing 50 grains of the bisulphate of quinia and ℥ 100 of dilute sulphuric acid. He claims to have made 150 successful experiments, and to have met with only 2 cases of inflammation (*N. Y. Med. Jour.*, March, 1874). These results have been violently contradicted by the experiments of others, and the question is still in active litigation.

In this connection it is interesting to recall the advice given by Bernard, in his lectures already quoted, to inject quinine into the trachea. He quotes two cases where this was done in the algid stage of violent pernicious fever. In the first case, quinine administered by the mouth had been vomited; in the second, the patient, a child of 12 years, was almost unconscious; a ten per cent. solution of muriate of quinine was thrown into the trachea by means of a hypodermic syringe, without causing either cough or local irritation. In the first case, the pulse became perceptible 18 minutes after the injection, and in half an hour heat was restored, and the patient out of danger. In the second case, in five minutes after the injection the pulse rose from 31 to 40 in 12 minutes; the respiration revived, and in an hour consciousness was fully restored, the patient sat up and asked for food. These observations were first published in a thesis in 1868, but Bernard's endorsement will give them more publicity. This distinguished physiologist declares that the method of administering medicines by the stomach, although far the most common, is the most uncertain and inefficacious of

all modes of providing for absorption, and should be replaced by others whenever possible.

On the same principle as the hypodermic injections into the trachea, and far less dangerous, are the inhalations of quinine practised for pneumonia by Gerhardt (*Deutsch. Zeitsch. f. Pract. Med., Centralblatt*, Mai 23, 1874); a half per cent. solution of the muriate was used, and 8 inhalations made in the course of 3 hours. During the next 36 hours the temperature fell 1.54 degrees to 3 degrees.

The effect of quinine upon lowering the temperature is still the subject of ardent investigations. New attempts are made to explain this antipyretic action as the result of diminished tissue metamorphosis. Kerner (*Pflug. Archiv*, Bd. III, s 109) asserts that after a 30 grain dose of quinine the amount of urea eliminated in 24 hours fell from 18 to 14 grammes. On the other hand, —— (*Archiv f. Pharm.* Bd. II, Heft 5) found that when quinine lowered the temperature of healthy rabbits, the exhalation of carbonic acid was not diminished; and in fevered rabbits this exhalation was even increased. But not enough facts have been brought forward to prove any important influence of quinine upon tissue changes, and the conclusions of Jerusalimsky in the memoirs quoted still seem the most valid, namely, that quinine acts upon the temperature by stimulating the heat-regulating centre in the medulla. After section of the cord below this centre, quinine has no influence upon the temperature.

Binz, in a new memoir published in the course of this year (1875), reaffirms the parallelism between the antipyretic and antiseptic action of quinine, and the dependence of the former upon the latter. But clinicians continue to deny that the therapeutical effects of quinine can be explained by its action on white corpuscles or on microzymes. Professor Sée, in a clinical lecture that has been extensively quoted, insists that quinine cannot be given in sufficiently large doses to destroy infusoria in the living blood (*Am. Jour. Med. Sci.*, Oct., 1874). Nevertheless, every theory admits that it may check septic changes (*Practitioner*, Nov., 1874). Accordingly, in observations on puerperal fever, Breisky has found that out of 54 cases treated by quinine 47 recovered (*Mem. Bern.*, 1875); of these 30 were without local lesions. But from a case of septic fever continuing three weeks after small-pox, Clifford Albut infers that quinine may flatten fever curves almost to a normal temperature without being useful as an antiseptic. His patients died of exhaustion without fever.

The unquestionable and remarkable influence of quinine over white corpuscles, when directly brought into contact with them, has been utilized in the topical treatment of suppurations. Morland, of St. Louis (*Pract.*, Nov., 1874), injected 6 grains of quinine, dissolved in ¾ oz. of water, into the cavity of a suppurating pleura. The discharge of pus rapidly diminished, as it had not done under carbolic acid treatment. An ulcer on the leg, of

two years' standing, and associated with initial heart disease, was treated with an ointment of quinine, 10 grains to the ounce. In two to three days, suppuration diminished, then healthy granulations appeared, and the ulcer was rapidly healed. The third experiment, equally successful, was on a mammary abscess, treated by an injection of 10 grains quinine to ℥j of water.

The treatment of whooping-cough by quinine has been tried by Rapmund, in France *(Bull. Therap.*, Juni 30, 1874), upon 34 cases. He found that the disease was never shortened, but the number and violence of the paroxysms was lessened. Instead of administering the medicine hourly, however, it was only given twice a day.

The latest alleged property of quinine—namely, its effect as an oxytocic—is disputed by Weatherly *(Richmond and Louisville Med. Jour.*, January, 1875). He relates 5 cases where large doses were administered for intermittent fever, to women in various stages of pregnancy, without producing even a threatening of abortion.

Such cases, however, prove nothing in regard to the action of quinine upon a uterus whose contractility was already excited, and where parturition or abortion had already begun.

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In the last No. of the *New York Medical Journal*, *salicine*, in grain or half grain doses, has been strongly recommended for chronic diarrhœa, either in infants or adults. It is supposed to act as an antiseptic upon the substances whose fermentation maintains the irritation of the intestine. Still another article appears in the last No. of the *Deutsches Archiv.—Virginia Medical Monthly.*

PROCEEDINGS OF THE NEW ORLEANS MEDICAL AND SURGICAL ASSOCIATION.

EIGHTY-FIFTH MEETING.

JANUARY 23D, 1876.

The Association met pursuant to adjournment—a quorum present.

The President, Dr. D. C. Holliday, in the chair.

Reading of minutes of preceding meeting dispensed with.

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The President announced that the subject for discussion was Diphtheria, and that Dr. J. W. Watkins would open the discussion.

DR. WATKINS SAID:

Mr. President and Gentlemen—The plan adopted in the discussion of this paper differs no doubt from that originally intended by the Committee, but I have been led to so consider it from the opinions expressed from time to time by members of this Association. Interesting as may be a review of the clinical history and pathology of this disease, yet from the knowledge every medical gentleman possesses with regard to these, and the special interest pertaining to other features of this subject, I shall refer to them only as they are suggested in connection with the points to which I intend specially directing your attention. With a brief sketch of the history of diphtheria, we will next proceed at greater length to examine the important facts embraced under the head of Causation, Diagnosis, Prognosis and Treatment, on which much has been said; yet still more will be said, as future investigations establish the negative or affirmative of opinions now accepted. Originating in Egypt, it is one of the oldest epidemic diseases known, spoken of at the time of Homer and Hippocrates as Malum Egyptiacum, afterwards by Macrobius, of Rome, A. D., 380. In 1557, Powest, of Holland, and in 1789, Bard, of England, both gave an account of it—the latter under the name of Angina Suffocativa. It was not until the time of Bretonneau, however, in 1821, that it received special attention, and was called by him Angina Diphtheritis, from the characteristic exudation.

Seldom occurring sporadically, it is essentially an epidemic disease, originating in a specific cause, the contagiousness of which is demonstrated by experiment as well as by actual cases. This cause, according to Oertel, has been discovered to be a vegetable organism, or bacteria, which undergoes development in the blood, while according to Bretonneau, the vegetation is the pathological product of diphtheria, consisting of bacteria, occurring in every part of the tissues, exudations, blood, tracheotomy incisions, ulcers, etc. An increase in the severity of the symptoms present in the disease is marked by a rapid increase in the blood, of these organisms. Micrococci, whether inoculated in mucous membranes, cornea, or muscles, rapidly increase, the point of inoculation forming a centre from which they radiate through the body, becoming heaped up in the uriniferous tubules, malpighian corpuscles, muscles and other tissues, giving rise to exudations, albuminuria, paralysis, etc. As to its method of propagation, air seems to constitute no medium, but actual contact or inoculation is necessary; this, it is thought, may be accomplished by water, from its being limited to narrow strips of land along the banks of rivers. As regards proofs of its inoculability, the experiment was performed of injecting under the skin of a horse some of these micrococci, with the result of developing in the throat the characteristic exudation. Social position, climate,

soil and season, have no effect in producing the disease; still, from the irregularity of the epidemics, the special cause seems to depend on unknown auxiliary causes. All periods of life are not equally susceptible to the disease, as the analysis of statistics furnished indicate a gradual increase from the age of 2 years up to 10 or 12, after which the relative number of cases gradually diminish. There being nothing peculiar in the premonitory symptoms of diphtheria to distinguish it from other diseases of this class prior to the appearance of the false membrane, Bretonneau, whose opinion is sanctioned by other members of the profession, states it as a rule, that without false membrane there can be no diphtheria, and no inflammation with false membrane is diphtheria unless it spreads by contagion. This diptheritic affection, which is at first strictly local, and afterwards becomes a constitutional disease, is attended by general symptoms for a variable period, either slight or extremely violent. It is sometimes acute, commencing with a pronounced chill, preceded perhaps by a cough, which is followed by high febrile excitement, pulse rapid and irregular, painful deglutition—not frequent, however—slight stiffness of the neck, pain in the head, glands at the angle of the jaw swollen and tender, incomplete paralysis of the muscles of deglutition, ptyalism, hemorrhages from the nose and mouth, spasm of the larynx, etc. On the other hand, the symptoms may be so slight as to attract no attention to the throat, which if by accident should be examined, nothing is observable except perhaps a limited patch of exudative material confined to the fauces, or to one or both tonsils, and attended with little or no febrile excitement. Though many authors, as well as members of the profession, are disposed to regard laryngitis with exudation, or true croup and diphtheria, as the same disease, other authors, of no less repute, after a careful study of its history, based upon an extensive acquaintance with numerous epidemics, are fully persuaded of the distinct character of the two diseases. Among these latter may be mentioned Oertel, Virchow, Ziemssen, DaCosta, and others. According to DaCosta, to consider croup and diphtheria identical is taking too narrow a view of the subject. Croup, which is not a specific disease, but results from cold, exposure, irritations, etc., though attended with a similar exudative process, is purely local, lacking the peculiar constitutional symptoms and sequelæ of diphtheria. As regards the local manifestations of the two diseases, diphtheria first makes its appearance usually on the fauces, gradually extending to the tonsils until one or both are involved, the anterior pharynx, buccal mucous membrane, nares, etc.; lastly attacking the larynx, which in the majority of cases is never involved; if so, it is the result of a gradual extension of the inflammation, and takes place late in the disease. Laryngeal affection is by no means an essential element. In croup, however, the first symptoms, after the existence perhaps of cold for a few days, usually attended by a slight cough, are especially refer-

rable to the larynx, even before any false membrane is observable either on the fauces, tonsils or pharynx; if present on the pharynx, it is confined to the posterior portion. To quote from DaCosta, "Diphtheria affects the throat and may extend to the larynx, while croup affects the larynx, and may extend to the throat." The glandular enlargements which accompany the diphtheritic process occur as the result of a deposit in the gland of this peculiar morbid material which excites inflammation, while in croup it results from the extension of the inflammation, and is not specific. Since the poison of diphtheria exists in the blood, as may be demonstrated by the microscope, it is conveyed to all portions of the body, and consequently we may expect functional derangements and inflammatory changes in the different organs, from the deposit in their tissues of these organisms or bacteria. Inflammation of the kidneys, as manifested by the presence of albumen in the urine, seldom absent, especially in the latter stages, fatty degeneration of the muscles of deglutition and rupture of the capillaries, giving rise to hemorrhages, clearly demonstrate the constitutional tendency of the disease. As regards the paralysis, it may be limited to the muscles of the palate or pharynx, or general, affecting either or both the upper or lower extremities; it ensues gradually, preceded by numbness, and usually comes on two or more weeks after apparent convalescence. To determine its cause is difficult. Degeneration of the muscular structure, or innutrition of the nerve centres from the impoverished condition of the blood, are both adequate causes, and may combine to produce this result. In croup albumen is seldom found in the urine; general paralysis rarely occurs; epistaxis is not frequent, while the offensive and irritating discharge which takes place from the nares in diphtheria never occurs in uncomplicated croup. According to DaCosta, croup never becomes constitutional, but, as a matter of course, the system must suffer from the patient's loss of rest, febrile excitement, anorexia, fatigue from the labored attempts at respiration, and the failure of the physiological processes normally taking place in the lung.

Symptoms attendant upon the invasion of the disease cannot be regarded as indicative of the mildness nor severity of the attack which is to follow. Climate and season, though they exercise little influence as regards being factors in its causation, affect considerably the prognosis, owing to the liability in cold, damp weather, to the supervention of laryngeal inflammation, and the lung diseases prevalent at this season occurring as complications. In the majority of cases the prognosis is unfavorable, though different epidemics are attended with variable degrees of mortality irrespective of invasion of the larynx, which is always an unfavorable complication. The violence of the attack may cause death in less than 48 hours. The fatality is from 30 to 40 per cent. greater in children than in adults, and especially in children between the ages of 2 and 5 years. In

cases where the larynx is unaffected the prognosis is unfavorable, if the buccal mucous membrane and nares are extensively involved, or if frequent vomiting, diarrhœa, copious epistaxis, irregularity or feebleness of the pulse, abundance of albumen in the urine, convulsions, coma, or delirium are present. According to Professor J. G. Richardson, a temperature of only 102° or 102⅘° is not to be relied upon as evidence of a successful termination, though a temperature of 106° is a sure precursor of death. Ulcers on the tonsils when clean, small and superficial, are benign; but if extensive, deep, livid or blackish, and putrid, are termed malignant, and usually accompany a typhoid condition of the system and great nervous prostration. Oertel observes, that the severer the affection of the mucous membrane, and the longer its duration, the greater the liability to paralysis as a sequela. In a case of uncomplicated diphtheria (that is, the larynx being unaffected), the danger to a fatal issue is by means of either of three of the four modes in which death always takes place: it may result from asthenia, under which head may be included heart clot, resulting from general exhaustion, anæmia from blood destruction, and asphyxia from paralysis of the heart or muscles of respiration. Death from dyspnœa belongs more especially to croup, or to diphtheria with the larynx involved; hence the more unfavorable prognosis which attends laryngeal complications, as the last pillar which supports the temple of existence is shaken to its foundation. Progress in medical science culminates in the successful treatment of disease, to which all the other considerations are subservient, and only valuable in so far as they suggest the best means of accomplishing this object; consequently the intimate relationship existing between cause and effect, in the development of disease, constitutes the field from which will be garnered the choicest fruits of medical research. For more than 2000 years we have labored to discover some remedy which would prove antidotal to the poisonous agent producing diphtheria, without success, as up to the present time no specific graces the pages of our pharmacopœia. Different systems of practice, from the leeching, blistering, blood-letting, starvation calomel plan, of our forefathers, to the tonic and stimulating plan of to-day, have been adopted with varying results, sooner or later to yield to some new-fangled idea, which is itself soon to be wrecked upon the shoals of inexperience or popular prejudice. The system most practiced now may be divided into local and general, the former having reference not alone to the allaying of the inflammation, but also the prevention of septic poisoning. Recent authors seem disposed to discountenance the application of cold, and the use of astringent washes to the throat, as the relief from pain by the cold is not permanent, and has no effect on the micrococci whatever, while the astringents are liable to the same objections which pertain to a forcible removal of the membrane, in that as the slough is removed the sub-epithelial tissue is deprived of its

protection against the reabsorption of the poison existing in the mucus and saliva, and in no way prevents the formation of either a second or third membrane. The natural means by which the false membrane is removed, is a process of suppuration taking place in the tissues underlying the membrane, accomplishing its gradual removal, at the same time that resolution occurs under protection of the exudation and the layer of pus; hence the plan of treatment so highly recommended by Oertel and others, which consists in an effort, by means of warm applications and inhalations, to excite an abundant secretion of pus, or in other words, "further the diphtheritic process." According to Oertel, the result is always constant, and notable as early as 12 or 18 hours, during which the inhalations are practiced a quarter of every hour, and the warm applications unceasingly continued. If considerable fibrinous exudation, with partial decomposition of the membrane, exists, the effects will be developed more slowly, consequently the degree of the inflammation and the extent of the exudation will indicate the frequency and length of time necessary to continue the applications. Warm water alone, or a solution of sodium chloride, aqua calcis, or potass chlorate, may be used as inhalations. With reference to the protection afforded by remedial agents in the prevention of septic poisoning, many interesting and valuable experiments have been performed, and with satisfactory results. In a solution of quinine, 2 grains to ℥i of water, the micrococci, after remaining in it for 48 hours, were found not only to have preserved mobility, but had actually increased greatly in numbers. Alum, chlorate of potass, and the sulphates of iron and copper, yielded similar results. Lugol's solution and alcohol, with equal parts of water, reduced their mobility and lessened only in a slight degree their increase, while chlorinated water, carbolic acid, and permanganate of potass, deprived them entirely of mobility and absolutely prevented development. We may therefore expect to obtain positive benefit from frequently repeated gargles of chlorinated water freshly prepared, in the proportion of 15 or 30 parts to 100 of water, carbolic acid from 2 to 5 grains in ℥i, and permanganate of potass in the proportion of 2 grains to ℥i of water. The constitutional treatment has resolved itself into a stimulant and supportive plan, consisting in the free administration of tonics, good food, wine, beef-tea, milk, etc., in conjunction with a warm, moist atmosphere. Chlorate of potass with muriated tincture of iron is a preparation exceedingly popular with the profession, even up to the present time. Mineral acids, phosphate and sulphate of quinine, have been used with success. The danger of death from asthenia should be constantly borne in mind, and every means taken to support the patient's strength, not only until the cause of the disease is ended, but until all danger from heart-clot has passed, which sometimes takes place after apparent convalescence from the slightest exertion. Vomiting, pain, diarrhœa, restlessness and hemorrhages, may require

appropriate remedies. Concerning the operation of laryngotomy or tracheotomy in this disease, the results are far less satisfactory than when performed in croup, owing to the constitutional character of diphtheria and the facts previously mentioned under the head of prognosis. I take it that no case could demonstrate more clearly the difference in regard to the results of tracheotomy as performed in these two diseases, than the case related by Dr. Holliday at our last meeting in December, where the patient dies, not from the obstruction to respiration, imperfect oxidation of the blood, or lung complication (auscultation even up to the time of death revealing no evidence that such was the case), but from the constitutional ravages of the poison. Why would such a case on the one hand be attended with probable success, and with positive failure on the other? Because, had it been a case of croup, by removing the difficulty in respiration you relieve the greatest danger threatening life, while in diphtheria you are only relieving a symptom, the blood-changes on which fatality chiefly depends still existing, though an abundance of fresh air is supplied to the lung. Tracheotomy may be as imperatively demanded in diphtheria as in croup, but little success can be anticipated from the operation. Had the case operated on by Dr. Holliday been one of croup (which it clearly was not, from the history), according to a process of logical reasoning recovery might have been expected. In croup the patient usually dies of dyspnœa, though death may occur from other causes, while in diphtheria the patient usually dies from asthenia or anæmia, the larynx or trachea not becoming affected. To carry the argument a little further: performing tracheotomy in diphtheria is like controlling excessive diarrhœa in typhoid fever, which if neglected would certainly cause death, but the removal of which does not cure the disease. When proper discrimination is made between the cases operated upon, successful tracheotomy in croup will no doubt be the rule, but alas! diphtheria presents no such alluring rainbow hues of joyous expectation.

DR. CRAWCOUR SAID

that he took issue with Dr. Watkins. Drs. Jenner and Gull hold the opinion that the only difference between membranous croup and diphtheria is the location of the false membrane which in many cases may involve either pharynx or larynx. The disease is undoubtedly constitutional, and the best remedial agents are those which act chemically on the zymotic cause. Must say, however, that he has heretofore been unsuccessful in the treatment of the disease. Has recently, however, had a case to recover, where, owing to the gravity of the attack, he expected death: was called to see a child about one year of age; there was fever, no difficulty in swallowing; a leathery yellowish deposit on both tonsils; great depression. Ordered the throat to be mopped out with a solution of carbolic and salicylic acids,

applied quinine inunctions to the body, and gave internally a strong solution of chlorine; gave iced milk freely. The child is now convalescent.

In other cases has used carbolic acid or salicylic acid alone, and has been unsuccessful. Has had two cases recover under the internal administration of bromine—one-fifth of a drop every hour. Advised, when administering bromine, that it be combined with small quantities of bromide or iodide of potassium to insure its solubility. The solution should be kept in the dark, as light decomposes the bromine into hydrobromic acid.

DR. HERRICK SAID

that for several years he had resorted to a plan of treatment suggested by the solubility of the false membrane in lime-water and lactic acid; uses the solution by inhalation. The usual tonic and supportive measures are kept up. Is better satisfied with this treatment than any other. One case where there was complete aphonia recovered. Two similar cases died by suffocation in his practice before he had instituted this plan of treatment. Classes the muriated tincture of iron and chlorate of potash among the best tonic remedies.

DR. DELL'ORTO SAID

that several years ago, in France, Dr. Auburn had used successfully perchloride of iron, both locally and internally, in the treatment of diphtheria. The local application was made with a sponge soaked in a strong solution of perchloride of iron, with the object to clean the posterior fauces of the forming pseudo-membranes, and at the same time to substitute, with the local irritation caused by the iron, a healthy inflammation in place of the destructive one of the diphtheritic poison. Dr. Auburn does not attach otherwise great importance to the local application; he mainly relies on the internal administration of the perchloride, and the way in which he uses it constitutes a peculiar method, really new, and worthy to be mentioned before the Association.

He pours in a glass full of water from 20 to 40 drops (according to the age of the patient) of pure perchloride of iron. Of this mixture he makes the patient drink about two teaspoonfuls every ten, fifteen, or twenty minutes (according to the gravity of the case), and he continues day and night during 4 or 5 days. Generally a patient can drink from seven to ten glassfuls of this solution in the 24 hours, which makes an average of 140 and 360 drops of perchloride of iron. The nourishment must be strictly reduced to pure cold milk, which ought to be given as regularly and often as the solution.

In some very interesting statistics published by the same gentleman in *L'Union Médicale*, December, 1860, he relates 39 cases of

diphtheria treated with this medication during three years, of which 35 recovered, as it is splendidly proved with the following figures.

25 *Diphthéries pharyngiennes.*	Perchloride of iron administered since the commencement of disease.	25 cured.
5 *Diphthéries pharyngiennes. et cutanées.*	do. do.	5 cured.
9 *Diphthéries pharyngiennes laryngées généralitées graves.*	3, treated since the commencement.	3 cured.
	6, remedy used several days after the commencement.	2 cured.

In these last two cases tracheotomy was performed.

Trousseau used this treatment in one case with a good result. Dr. Dell'Orto said that he had administered it twice in his practice, and the recovery was easy and quick.

What is the *modus agendi* of perchloride of iron in diphtheria? Dr. Gerard recognizes in this valuable remedy three actions:

1st. On the constitution of the blood, by rendering its fibro-elements more plastic, and so preventing their exudation through the mucous respiratory membrane.

2d. On the mucous respiratory membrane itself, making the organic tissue of the same more compact, so that the albuminous principles of the blood cannot exude.

3d. On the general mucous system, by giving strength and tonicity to the same.

By virtue of these properties, perchloride of iron stops the progress of the poison, and helps the vital force in resisting it (*Union Médicale*, September, 1859). These facts are very encouraging; the administration of the medicament is so simple and mild, that Dr. Dell'Orto would advise the members of the Association to give it a trial, and apply it as strictly as suggested by its author.

THE PRESIDENT, DR. HOLLIDAY, SAID

that it had been his misfortune to have had constant experience with this disease since its advent here in 1854.

The results of treatment have been but too frequently unsatisfactory.

We are often, and *usually* called upon to treat the throat.

Is the membranous exudation in the throat frequently the cause of death?

In 1862, was called upon to treat a child 16 to 18 months old,

where an eczematous eruption located behind the ears (so frequently met with during dentition), became covered with the characteristic diphtheritic exudation, and which during the subsequent progress of the disease failed to appear on any other portion of the body.

In the above case, as fast as the false membrane was removed, and in spite of all local applications, it ultimately reappeared, and although a careful general treatment was followed, the result was fatal. In this case, death of course occurred from blood poison, there never having been at any time the slightest evidence of any throat trouble.

Thought it just as reasonable to treat the *eruption* in scarlet fever as the throat in diphtheria. Are there many amongst us who are willing to admit that the false membranes are the cause of the fatal issue in dyphtheria?

Has seen a case where the false membrane existed only on one tonsil; still death was the result.

In another case the *hard palate* alone was implicated to all appearances; still death ensued.

Dr. H. believes the chemical treatment theoretically correct, but too slow and difficult in its operation to frequently prove successful.

As suppuration appears to be a truly powerful agent, in *limiting* and *eliminating* this disease, those means likely to produce it, such as cold, and medicated inhalations, are to be advised.

One of the most frequent, intractable, and disheartening symptoms of frequent recurrence in diphtheria, is the *total* loss of appetite, supervening early in the attack, and often defeating all means of cure employed; this symptom should never be neglected or lost sight of.

Dr. H. continued, saying that he had carefully noted the epidemics of diphtheria occurring during the years 1854, 1856, 1858 and 1862, and thinks that diphtheria forms no exception to the general rules of nearly all epidemic visitations, namely, to diminish in severity and gravity by recurrence; still, isolated cases of extreme gravity are not infrequent.

Has a case now under treatment, where the disease commenced as entirely localized on one tonsil; still in spite of both a carefully directed general and local treatment, the progress has been in no degree retarded or altered, and most probably a fatal issue will soon be reached.

Aphonia in diphtheria Dr. H. attributed more frequently to paralysis of the laryngeal muscles, than to the deposit of false membrane; thought the perchloride of iron treatment, as recommended by Dr. Dell'Orto, useful, but too slow in many cases.

Dr. H., in conclusion, asked the following questions:

1. What means have we to sustain the strength of our patients when they absolutely refuse all food?

2. Does the disease usually kill by suffocation?

3. Is the *chemical treatment* easy of application and likely to succeed in the majority of cases?

DR. A. C. HOLT SAID:

In answer to your question, Mr. President, I beg leave to state that in nearly all of the fatal cases of diphtheria coming under my observation, death has ensued from suffocation; in the majority early in the attack, but in a few, later, by the gradual invasion of the larynx and air passages.

The chief experience I have had in this disease was in an epidemic, during our late war, when, returning an invalid from the army in Virginia to recuperate in Alabama, where my family was temporarily sojourning, I arrived to find it already prevailing on several plantations in the vicinity, and saw it sweep rapidly over that whole region of country.

The necessities of the war having depleted the country to a great degree of physicians, I was forced by the dictates of humanity, though almost disabled, to render what aid I could toward the relief of the great suffering which prevailed. I saw and treated several hundred cases; and in comparing that epidemic, which then impressed me as something terrible, with the occasional cases I have treated since, I have been somewhat surprised at the greater intensity and proportionate fatality of the so-called sporadic cases. For in an epidemic exhibiting in a large number of cases great virulence, by violence of onset and rapidity of progress, as well as by its great sweep over the country, one-half, or possibly two-thirds, of the cases were so mild as to demand little treatment beyond that which may be called nurses' treatment, viz., keeping the patient comfortable in bed and supplying appropriate nourishment.

I found myself much restricted in the way of medicine, though my observation then and since has satisfied me that I had enough and of the best for the emergency; for I have a decided conviction that, in the way of active medication in this disease, all desired results, as far as these are attainable by any medicine, can be gained by the proper use of calomel and quinine. In addition to them I had some tincture of aconite root, and some hydrochlorate of ammonia, and these, with some table salt, comprised my whole materia medica; and now, after the lapse of ten years with its added experience, I may say I have seen no reason to attempt any addition or improvement, and have grave doubts whether I could do so with advantage. To control active febrile excitement when occurring, as it often did, in the early stages, I administered aconite in quantities appropriate to age, but lost no time in bringing cases as early as possible under the influence of calomel and quinine. To accomplish this, I gave from one-half to two grains of calomel, according to age of patient, every four hours, and from three to ten grains quinine at same intervals alternately, so that every two hours one of these remedies

was given. So soon as I saw evidence of the action of calomel in the evacuations (either green or yellow stools), this remedy was discontinued, or the intervals prolonged, and so also with the quinine so soon as cinchonism was produced. With the occurrence of these conditions some amendment took place, often only discovered by a check up in progress; then the hydrochlorate of ammonia came in, in many instances with very obvious and decided good effect. I gave this in from five to ten grains, according to age, every three hours.

For the throat I used only a strong solution of salt, either by gargling or syringing with it thoroughly and frequently.

In that condition so forcibly depicted just now by yourself, Mr. President, as one of the most fearful features of this disease (I allude to the total failure of the power of the stomach to discharge the function of digestion), I have no doubt the sulphocarbolate of sodium would prove to be a remedy of value, not alone by its action upon the blood, but also in its powerful antiseptic action upon the contents of the stomach and bowels, which it has been demonstrated to possess by Prof. Joseph Jones, in his researches upon black vomit in yellow fever. I think it more than probable that this paralysis of the stomach may in some cases be due to the ingestion by the stomach and bowels of that detestable poisonous fluid resulting from decomposition of the false membrane. In spite of all efforts to prevent this, or to neutralize the fluid by carbolic acid, permanganate of potash, etc., sufficient will pass in many cases to poison the patient and thwart all efforts to cure. I am sure I had one case to die last year from this cause.

To nourish the patient I prefer milk, and at the proper time eggs, Duero's Elixir, and as stimulants in convalescence, sherry wine, milk punch, and egg-nog.

The discussion now closed, and Dr. Herrick reported the following interesting case.

A QUESTIONABLE CASE.

About 5, a. m., December 8th, I was called to see Mr. W——, a native of New Orleans, 37 years old. He presented an appearance of great restlessness and mental agitation, having been unable to sleep during the whole night. The most urgent complaint was referred to the throat, and he professed a total inability to swallow anything whatever. The skin was moist, the pulse sufficiently full and not hurried; the pupils of the eyes were somewhat dilated. There was considerable faltering in speech and frequent sighing. He was laboring under the most gloomy apprehensions, in the full conviction that he was the subject of hydrophobia.

On December 1st, 38 days before, he had been severely bitten on the left hand by a large watch-dog, which he was punishing

for biting a small terrier. Two days afterwards the large dog was taken from the house, and he and the other members of the family were told a few days subsequently that the dog had been sold to a man across the river. The wounds healed in the course of two weeks, previous to which Mr. W—— had resumed his usual avocations.

January 2d the little dog died, of what was called the "blind staggers," and I am told that it had previously been affected in a similar manner. This animal showed no indication of ferocity, and no one seems to have been afraid of it.

The death of the little dog, which had been bitten at the same time as himself, appears to have excited in Mr. W— the gravest apprehensions for his own safety. His wounds had not even been cauterized, and he had been studiously impressed with the idea that the large dog was well, and that there was no danger. Nevertheless his mind dwelt on the matter, and he now began to inform himself thoroughly on the subject of hydrophobia, by conversation with medical men, by consulting medical books, and by questioning every one who would talk about it. His mind became wrought to an extreme pitch of anxiety, his appetite failed, his sleep was interrupted, and he began to drink to an unwonted degree, having previously been a temperate man. He was out for the last time January 6th, in company with his brother, who exerted himself to the utmost to dispel his gloomy forebodings.

Previous to seeing him on the morning of the 8th I had heard the story of the large dog, but never had learned the death of the little one. Mr. W's late symptoms had also been related. As will appear, some very material facts had been concealed from me, which might have had a decided bearing on the diagnosis, but would not have modified the mode of treatment.

Neither at this visit, nor for more than twenty-four hours after, was there observed any hyper-secretion of saliva, nor any degree of spasm during the whole course of his sickness, except of the throat in attempting to swallow. Possibly his interrupted speech was due to some spasm in the glottis, but I attributed it to his anxiety. The want of the salivary symptom, one of the most prominent in hydrophobia, was urged on him, in connection with other arguments, to dispel the idea that had taken possession of him, and for a time with much success. Being of the opinion that his trouble was hysterical, I aimed to comfort and reassure him, urged the necessity of taking as much nourishment as possible, and actually persuaded him to swallow some gruel and some bread dipped in milk. This was done with considerable effort, and rather in compliance with our pressing request than to satisfy any appetite for food, though he then complained of thirst. Partly to reassure him, at the first visit I prescribed no medicine, but engaged to return that evening.

Soon after mid-day, however, I was sent for, and reaching him about 3, p. m., found him obviously worse. There was appa-

rent a dread of currents of air from the open door and window, though no breeze was stirring; but, knowing that he had been studying the symptoms of hydrophobia, I concluded that he was hysterically mimicking this and other marks of the disease which he apprehended. Nevertheless active medication was now instituted. One-fourth of a grain of morphine with 1-48th of atropine was given hypodermically, in the hope of inducing quiet and sleep. It was followed by some mitigation of the throat trouble, but the restlessness rather increased, and I feared it had been aggravated by the morphine. Accordingly, about 4, p. m., two drachms of chloral were prescribed in a four-ounce solution, one-half to be administered for a dose by enema. The whole was given before dark, without decided effect, although it was well retained. Before 9, p. m., I had two drachms more of chloral dissolved in six ounces of the mixture of assafœtida, of double the officinal strength. One-third of this by enema quieted him so much that I left him asleep about 11, p. m.

Previous to this he had announced in the most solemn manner that he should die on the following day, and had addressed the members of the family in such terms as befit one in this conviction. Its verity was realized by no one but himself, and our efforts were directed towards dispelling these fatal forebodings.

Before falling asleep he became partially delirious, and his mind returned to his daily occupations.

Between 4 and 5 o'clock the following morning, in obedience to a summons, I found that his sleep had been of very short duration, and that he had passed a night of great restlessness, varied by paroxysms of extreme agitation, but not actual convulsions. These paroxysms continued till the end. During the night the chloral and assafœtida mixture had all been administered by enema, besides about a third of a replenished bottle. They had some chloroform in the house, and I mixed a teaspoonful of it with a little milk, which he managed to swallow through a tube, the glass being covered from his sight. In about half an hour he was again asleep, but only for a short time. On waking he was persuaded to take two or three teaspoonfuls of a boiled egg, but no more food would he take, rather, it seemed, from disinclination than inability. As no objection was made to medication by enema, the chloroform was repeated in this manner, but it was not well retained.

About 10, a. m., on the 9th I observed that his pulse was failing, and now, thoroughly alarmed about his condition, asked for counsel. Dr. Logan was called, and we saw him together at 1, p. m. Previous to this his pulse had disappeared at the wrist, yet his agitation was still incessant and extreme. Then and for some time earlier he had manifested a dread of injuring those around him, which I considered an hysterical mimicry; though several times the thought struck me, if this man has not hydrophobia, he is making an astonishing imitation of it.

During the morning of the 9th he had made several ineffectual attempts to vomit, but now he ejected in these efforts some tenacious mucus or saliva. His eyes had assumed a fiery aspect, the conjunctivæ being even more congested than in yellow fever.

The case by this time had become desperate, and we agreed upon resorting to alcoholic stimulants, combined with digitalis. Half a drachm of the tincture was taken in whisky and water, with considerable persuasion, but he could not be induced to attempt another dose, though this was taken without much difficulty. A slight rallying of the pulse followed, but he rapidly sank, and died without a struggle at 4.30, p. m.

With the information before us, Dr. Logan and myself regarded his case as one of hysteria with a tendency to delirium tremens; but since his death facts have come to my knowledge which indicate very strongly that Mr. W—— was not mistaken about the nature of his malady. As already stated, I learned that the little dog, which had been bitten at the same time as Mr. W——, died just a week before him; and also, what was more important, that the dog which bit them died five days afterwards at a dog-hospital. The keeper of this establishment denies that the dog had hydrophobia, and asserts that he died of "fits caused by constipation." He also exhibited two small scars on one of his fingers, from a bite inflicted by this dog.

I regret exceedingly not to have seen these dogs during their sickness, as I should certainly have done in case I had been called on to treat Mr. W—— for the wounds on his hand. During his last illness I noticed that the hand which had been bitten presented a strange appearance, being covered with small red spots, which contrasted with the prevailing color of the skin. As it was our purpose to divert his mind as much as possible from the subject of his apprehensions, I forbore to examine the hand or to ask about any peculiar sensations.

On the supposition that Mr. W.'s case was in reality hydrophobia, the most remarkable feature was the absence of salivation till near the end. The absence of convulsions and the unwonted moderation of throat spasm may be attributable to the chloral and chloroform administered. On the other hand, supposing the case to have been hysteria with a tendency to delirium tremens, we find the difficulty that there was no tremor and no frightful phantoms in his delirium; besides, such a case would hardly show so little susceptibility to the quantity of chloral and chloroform administered. I have seen hysterical patients more violent, and one in particular swallowed fully an ounce of chloroform before she became quiet; but, in these cases, the excitement is usually subdued once for all.

On the whole, taking into consideration the history of this case in connection with that of the two dogs, its intractability and rapid progress to a fatal issue, though failing to present the

usual aggregate of symptoms, I find less difficulty in admitting than in rejecting a diagnosis of hydrophobia.

* * * * * * *

No further business—meeting adjourned.

W. H. WATKINS, M.D., *Secretary.*

NOTICES OF NEW BOOKS.

A Report on a Plan for Transporting Wounded Soldiers by Railway in time of War. By Geo. A. Otis, Assistant Surgeon, U. S. A. Pp. 56.

The special subject of the report (made to the Surgeon-General) is a plan of the Russian Engineer, Mr. A. Zavadovsky. The author, however, does not confine himself to this particular point, but describes the contrivances of the principal European nations in their late wars, as well as those used by both parties in our recent civil strife.

On the Russian plan litters are suspended by ropes to swinging poles, which subject their occupants to the obvious risk of collision by swaying with the movements of the cars; consequently the plan is disapproved. Others are described which are free from this objection, and in which the elasticity of rubber rings used for suspending the cots greatly relieves the jolting of the carriages.

The scheme of railway transportation for the sick and wounded in time of war is still in its infancy, but its importance is sure to enlist study and experiment, and it may be expected that great improvements will be made in the early future. S. S. H.

Physiological Action of Lycotonia. By Isaac Ott, M.D., Demonstrator of Physiology, University of Pennsylvania. Pp. 5.

There are six or eight varieties of the Aconitum known, of which A. napellus alone is official in our pharmacopœia. Lycotonia is an alkaloid derived from A. lycotonum, and in its medicinal properties resembles aconitia. The following are the author's conclusions of its action.

"1. Lycotonia is a weaker toxicant than aconitia.
"2. That it kills mainly through the respiratory apparatus.
"3. That it paralyzes the motor nerves.
"4. That it does not affect the sensory nerves, spinal cord, or the striated muscles.
"5. That it reduces the blood pressure and pulse without any previous rise of the former as produced by aconitia.
"6. That the decreased pulse-rate and pressure are due to an action on the intra-cardiac nervous apparatus.
"7. That the pneumogastrics are paralyzed only by large doses.
"8. That the delirium cordis produced by small doses is due to a change in the mechanism of the nervous apparatus of the heart." S. S. H.

Transactions of the Minnesota State Medical Society, 1875. Pp. 130.

This, its seventh meeting, was held at St. Paul, February 2d and 3d.

As usual, the address of the President occupies the leading place among the published papers. Dr. N. B. Hill here discourses on the Past, Present, and Future Interests of the Society. Under the second head allusion is made to the practice of Life Insurance companies of refering to the ordinary medical adviser of the applicant for a certificate. The author very properly insists that this should be given only at the express request of the applicant, and that the physician is fairly entitled to a fee from the company. With regard to medical experts before courts, he holds that they should not be regarded nor treated simply as witnesses, but as exercising judicial functions over the interests of both parties alike. This is undoubtedly the correct view, but one which the medical man can with difficulty realize. Physicians are human, like other people, and liable to bias in favor of their friends. There is also an implied expectation that a witness will testify in favor of the party which calls him to the stand, and it is natural to be influenced by the faculty of expectation. If physicians could but realize that better things are required of them than of other people, and make up their minds to be as dispassionate in court as at a surgical operation, it would be more creditable to them as experts and at the same time promote the ends of justice.

A number of papers follow, mostly of a clinical nature and of no extraordinary interest. The most striking case was one of

spontaneous cure of subclavian aneurism. The aneurism was traumatic, from an injury received in 1866, had slowly increased until the latter part of 1874, when considerable inconvenience was experienced, and the pulsation of the radial artery was diminished. At this time improvement began to take place, from obliteration of the subclavian artery, which was soon followed by the disappearance of the radial pulse and the rapid subsidence of the aneurismal tumor. S. S. H.

Manitou, Colorado, U. S. A., its Mineral Waters and Climate. By S. Edwin Solly, M.R.C.S., Eng., L.S.A., Lond., etc. Pp. 40.

Remarks on the properties of the different waters are given, together with an analysis of the most important. A description of Manitou and its Springs follows. The therapeutic applications of the waters are stated, apparently with candor, since they are not recommended as a panacea. It is especially as a winter resort for consumptive invalids, however, that this locality is most highly recommended, on account of the brightness and bracing character of its atmosphere, without the severity of a low temperature. S. S. H.

Report of the Health Officer of the City and County of San Francisco, for the fiscal year ending June 30, 1875. Pp. 77.

The health department is a local institution, composed of the Mayor and four physicians as a Board of Health, with a Health Officer and a Quarantine Officer—both physicians—a Secretary, two Health Inspectors, and a Market Inspector. It is obvious, from the paucity of health inspectors, that no general house-to-house visitation can be made, and so nuisances come to light for the most part only on private complaint. The consequence must be, that only a small fraction of them are ever abated; for people on friendly terms with their neighbors are not likely to complain of them. In alluding to this deficiency at San Francisco, Dr. Henry Gibbons, Jr., the Health Officer, speaks of the advantages of some other cities in this respect. While giving New Orleans credit for her advantage in possessing six inspectors, he seems unaware of the fact that these are medical men

charged with the sanitary oversight of the several municipal districts (now seven in number), and that the house-to-house inspections are made by ten or twelve men who are commissioned in the police force.

Most of the space is occupied by the mortuary statistics, which have been elaborately prepared, the tables being numerous, exhibiting the death movement in a great variety of relations. In these tables the nosology of Dr. Farr is employed, which is used in the British army service, and differs considerably from the Provisional Nomenclature of the College of Physicians.

An appendix contains a number of meteorological tables, showing the temperature, prevailing winds and rainfall, during the several months. No observations of the barometer or hygrometer are exhibited.

San Francisco seems to enjoy a remarkably favorable climate, as exhibited by an extraordinary evenness of temperature for its latitude, about 38°. The highest temperature, 89°, was reached in September, and the lowest, 33°, in April. It seems odd that the extremes should occur in these months. It is probably owing to natural advantages of climate rather than to sanitary provisions, that the city has a mortality but slightly exceeding 19 per 1000 of population. A comparison is shown in the mortality of twelve of the largest cities in this country, twelve in Great Britain, and ten other cities, mostly of more than 200,000 population, and St. Louis is the only one giving a lower death-rate, hers being only 14.5 per 1000. But St. Louis, though in nearly the same latitude, has a much wider range of temperature, and the cause of the low rate of mortality must be sought elsewhere. S. S. H.

Transactions of the New Hampshire Medical Society, held at Concord, June 15th and 16th, 1875. Pp. 164.

The Medical Society of New Hampshire is one of the oldest in the country, this being its eighty-fifth anniversary meeting.

The address of the President, Dr. Nahum Wight, presents several interesting and important points for consideration. One of these is the endowment of medical schools, which is ably advocated. While the propriety of State aid may be doubtful, from the danger of mixing politics with medical education, which is sure to result in detriment to the latter, it is certain that the

independence and efficiency of medical teachers would be vastly augmented by allowing them something like an adequate pecuniary remuneration for their services. People are not unreasonable enough to expect good preaching for poor pay, and the same rule might be applied to teaching even medicine. Benevolence and medicine have always been inseparable, as are supposed to be sanctity and theology; but the inevitable friction of their articulations needs the lubrication of despicable and filthy lucre. In this connection, allusion is made by Dr. Wight to the munificent bequest of Johns Hopkins, of Baltimore, by which about $3,500,000 are to be appropriated to the foundation of a hospital, medical school, etc. This, as a grand scheme of benevolence, is the most admirable bounty of the age; for, applied to the preparation of young men for a benevolent profession, it is an investment which may be expected to return fruit a hundred fold.

"Medical tramps" receive a notice from Dr. Wight the reverse of complimentary, and he calls for legislative action for their suppression. The medical vagrant is properly to be ranked in the predatory class of society, like any other vagrant; but we are of the opinion that the medical excrescence will not be found less difficult to eradicate than any other species of that genus. While freedom, rather than civilization, is our boast, physic must be unfettered; and just so long the sovereign people will get about as good as they deserve, whether it be physic or politics. Meantime the innocent are liable to suffer along with the guilty, being caught in bad company; and this is the course of nature, till the millenium comes. But, descending from the general to the particular, if possibly New Hampshire legislators might rid their people of quacks, our people here would vastly prefer to call on the quacks to give them any sort of relief from the worse plague of legislators.

In an oration spoken by Dr. Goodhue, the plea of insanity in murder, and medical-expert testimony in connection therewith, receive attention. We agree that the plea is urged far too often and strenuously, and that medical experts are too apt to take a partizan instead of a judicial view of the case wherein their opinions are sought.

Dr. George E. Hersey contributes a report on Fractures and Plastic Splints. Preference is given to gypsum as the plastic material, strengthened in some instances by strips of zinc. Ex-

cept as regards fractures of the femur, he is in accord with most surgeons of the advanced school of practice; but in the opinion that "the merits of plaster of Paris are more manifest in fractures of the femur than anywhere else," he is at variance with high authority, and notably with Prof. F. H. Hamilton. The great object is recovery without shortening or other deformity, and Prof. H. thinks that this method is followed by greater average shortening than those employing actual extension.

Prof. A. B. Crosby gives a report of a remarkable operation performed in 1836 by his father, Dr. Dixi Crosby, afterwards for many years Professor of Surgery at the Dartmouth Medical School. This was the removal of the entire arm, scapula and three-fourths of the clavicle, for malignant disease, and was followed by the recovery of the subject. Among other striking features in the case are to be noted the statements that the operation had no precedent, and that it had previously been declared impracticable by two other eminent surgeons. A brief sketch follows of 14 similar operations performed since that time, with varying success.

A judicious article is contributed by Dr. Wm. Child, on Sanitary Measures in the Rural Districts. As authority in such matters is lacking in country localities, it becomes the duty of the family physician to supply by his advice the want of supervision. Among other matters allusion is made to two or three fruitful sources of disease among farming communities—neglected cellars, with their accumulation of decaying vegetables and damp exhalations, stagnant cess-pools and foul privies. In the country the dry-earth system is convenient and efficient, serves to utilize excrementitious matters, and on these grounds deserves the preference.

An elaborate paper is contributed by Dr. Ephraim Cutter, of Cambridge, Mass., on the following subject—"Is flour our proper food?" The familiar results of chemical analysis are adduced, to show that wheat is robbed of some of its most valuable properties in the separation of the bran, such as the phosphates and potassa salts; and then the following questions are presented for consideration:

I. May it not be possible that the use of flour is a cause of the prevalence of diseases of the nervous system?

II. May it not be possible that the use of flour is a cause of the present lamentable and astounding prevalence of late erupting and decayed teeth?

III. May it not be possible that the use of flour is one cause of the present prevalence of weak and diseased eyes?

IV. May it not be possible that the use of flour is one cause of the prevalence of baldness and premature gray hairs?

V. May it not be possible that the so-called change in the type of disease may in some measure be due to the use of flour, so universal for the past forty years?

VI. May it not be possible that the use of flour is one cause of the prevalence of some of our chronic diseases, as catarrh and consumption?

VII. May it not be possible that the use of flour is one cause of the numerical decline in our native population in New England?

An affirmative conclusion is reached by the author to all these questions, but like most persons who become enthusiastic, in grappling with the subject it has clearly got away with him. Now observe. Rice is more deficient in these nutritive salts than the finest of flour, and it has formed from time immemorial the principal sustenance of more than half the human race, occupying the most populous regions on the globe. If those nations do not display as high a development of the nervous system nor as great muscular activity as wheat- and flesh-feeding nations, they certainly do not sustain the conclusions of Dr. Cutter by exhibiting marked tendencies in the directions mentioned by him.

The volume appropriately closes with obituary notices of several medical worthies. The general standard of the papers is good, and it bears favorable comparison with most contributions of the sort. One needless blemish recurs too often to be left unnoticed, in the shape of orthographical errors, doubtless from neglect of the publishing committee to look after the proof-reading. S. S. H.

Minor Surgery and Bandaging. By Christopher Heath, F.R.C.S., Surgeon to University Hospital, etc.

This work, embracing three hundred pages, presents in detail many points of interest to house surgeon and student. Great care is evidently exercised in demonstrating the various steps in performing operations in minor surgery. The treatment of hemorrhages and emergencies is admirably given, and strapping and bandaging correctly illustrated.

The introduction to the book abounds in much practical advice in regard to regulating the duties of surgeon, student and nurse to each other and the patient.

Various operations on the bladder and urethra are described. Hernia is well treated of, and a table illustrating the diagnostic difference between strangulated hernia, hæmatocele and orchitis, will be useful to the student.

The chapter on the immediate treatment of poisoning is not very satisfactory. The list of poisons is small and the treatment not thorough. Strychnia is not mentioned, and atropine, as an antidote to opium, is not alluded to.

The chapters on fracture and dislocations are both quite thorough, and the line of treatment laid down is satisfactory.

The chapter on case taking is worthy of study. The method of properly performing *post mortem* examinations is described, and will be useful to every physician, as indicating the necessary steps for performing with neatness and dispatch an operation which, at times, from gross carelessness, offends the feelings of relatives and others.

The book contains a table of the average weight of the organs of the body, and ends by giving formulæ selected from metropolitan hospitals. W. H. W.

A Practical Treatise on Fractures and Dislocations. By Frank Hastings Hamilton, A.M., M.D., L.L.D., Surgeon of Bellevue Hospital, etc. Fifth edition, revised and improved. Illustrated with 244 wood cuts. Philadelphia: Henry C. Lea; 1875.

Although it may appear an act of supererogation to say anything more of this well-known work than to announce that it has passed to a fifth edition within sixteen years, yet it may be well to inform those who may be ignorant of the fact, that in the history of medical literature in this country no such success has ever before attended the publication of a book devoted to only two topics in the whole domain of surgery. When we consider, however, the vast importance of the subjects here discussed, the exhaustive character of the treatise, the clear and lucid style in which it is written, and the frank ingenuousness with which the author confesses his occasional failures, we cannot feel surprised that the profession in Great Britain, as well as in this

country, have signified their approbation of the work in the most unmistakable manner. Except the translation of Malgaigne's treatise on the same subjects, issued immediately before the appearance of Prof. Hamilton's first edition, the work has had no competitor in the English language; and notwithstanding the universally acknowledged value of the former, the latter is far more widely distributed and oftener referred to, as the standard authority upon all questions concerning the accidents of which it treats. It is impossible to review such a book satisfactorily, on account of its very completeness. In passing through it with such an object in view, one finds upon looking back that his marks for notice are more numerous than the chapters, and the passages underlined sufficient of themselves to constitute a rather bulky pamphlet. We must content ourselves, therefore, with a bare commendation of the work, assured that the present edition will disappear even more rapidly from the publisher's shelves than any of its predecessors, and that the author will continue to reap the rich reward to which his labors so fully entitle him.

It need scarcely be added that the publisher has performed his part with his usual consideration for the eyes of his patrons, and is entitled to our hearty thanks for his great success. If all others followed his example, fewer spectacles would be seen upon the noses of students at thirty years of age, and many a lamp reflector allowed to grow dim without attracting attention.

T. G. R.

Cyclopædia of the Practice of Medicine. Edited by Dr. N. von Ziemssen, Professor of Clinical Medicine in Munich, Bavaria. Vol. V., *Diseases of the Respiratory Organs.* Translated by Gerald F. Yeo, M.D., of London; A. Brayton Hall, M.D., Francis Celafield, M.D., Frank P. Foster, M.D., Edward Prankel, M.D., and John C. Ray, jun., M.D., of New York, and Edward W. Schauffler, M.D., of Kansas City. Albert N Bruck, M.D., New York, author of American Edition. New York: William Wood & Company, 27 Great Jones Street. 1875.

The first paper in this volume is upon "Croupous Pneumonia," by Prof. Juergensen, of Tubingen. The subject is handled in an able and very practical manner. Whilst some of this writer's opinions in respect to the etiology and pathology of pneumonia will not receive the general endorsement of the medical profes-

sion in this country, they merit our highest respect and most careful attention, since they represent the most advanced state of medical conclusions on these points in the great schools of medicine which the author represents. He holds that "*croupous pneumonia is a constitutional disease, and is not dependent upon a local cause. The pulmonary inflammation is merely the chief symptom, and the morbid phenomena are not due to the local affection. The hypotheses of a morbific cause is indispensable. Croupous pneumonia belongs to the group of infectious diseases.*" The italics are the author's.

In regard to treatment, it is held that "*Nature cures, and the only duty of the physician is to maintain life until this cure is effected.*"

It must be observed, however, that the decided manner in which the onus of cure is thrown upon "Nature" does not hinder Prof. Juergensen from a resort to quinine as an antipyretic medicine and a use of this drug quite as lavishly as the boldest of our American practitioners. He says: "When properly used, quinine diminishes the temperature for at least twelve hours; the greatest reduction (2.7° to 4.5° F.) takes place from five to seven hours after the medicine is taken. The line of descent and subsequent elevation is very nearly straight, as I have demonstrated by thermometrical measurements repeated every five minutes. There is much to be said in regard to the mode of administering it. The formula below is the one I use as a suitable dose in a moderately severe pneumonia in an adult:

℞—Quiniæ sulphatis, ʒss,
Acidi muriatici, q. s.,
Aq. destil., - ʒijss.
Misc. To be taken at one dose.

This should be given in the evening between six and eight o'clock. For children, I use a grain and a half for every year, up to five years of age, and after that period from seven to fifteen grains, according to circumstances. These quantities may be exceeded without doing any harm. When the fever is intense, seventy-seven grains may be given to a strong adult, and fifteen grains to a child under one year, always in one dose." He recommends that the quinine used in this manner "should not be given daily, but every second evening, thus allowing forty-eight hours to elapse between two doses."

The second article in this volume is upon "Catarrhal Pneu-

monia," and is also by Prof. Juergensen. We consider this paper the ablest exposition of this difficult subject that has yet appeared in the English language. We have no space for extended notice of other articles appearing in this volume. There are two other papers from Prof. Juergensen, one upon "Hypostatic Processes in the Lungs," the other upon "Pneumonia from Embolism." Then follow articles upon "Hyperæmia, Anæmia, Hæmorrhages, Atelectasis, Collapse, Atrophy, Emphysema, Hypertrophy, Gangrene, New Formations and Parasites," by Prof. Hertz, of Amsterdam. The remainder of the volume is occupied by a long and apparently very thorough treatise upon "Pulmonary consumption and Acute Miliary Tuberculosis," by Prof. Ruehle, of Bonn, and a paper upon "Chronic and Acute Tuberculosis," by Prof. Rindfleisch, of Wurtzburg. The whole volume forms an octavo of 712 pages, and is executed with the usual care and perfection of the publishers.

Cyclopædia of the Practice of Medicine. Edited by Dr. N. von Ziemssen, Professor of Clinical Medicine in Munich, Bavaria. Vol. X, *Diseases of the Female Sexual Organs*, by Prof. Carl Schrœder, of Erlangen, Bavaria. Translated by Edward W. Schauffler, M.D., of Kansas City, Mo.; Leonard Wheeler, M.D., of Worcester, Mass.; William L. Richardson, M.D., of Boston, Mass.; and Edward B. Brownson, M.D., J. Haven Emerson, M.D., and Paul F. Munde, M.D., of New York. Albert N. Buck, M.D.; New York, Editor of American Edition. New York: William Wood & Company, 27 Great Jones Street. 1875.

This is an octavo volume of 575 pages, gotten up in good style, and illustrated by numerous wood cuts. A critical notice of this work must be postponed to a future number. The high reputation of the author is a guarantee of unusual merit; we therefore have no hesitation in recommending it to the profession.

First Annual Report of the Board of Health of the State of Georgia, for the year ending October 12th, 1875. 8vo., pp. 215.

The plan of organization is described at the beginning, including the act creating it. The proceedings at the organization are

related, with the constitution and rules and an address to the medical profession.

The Board consists of twelve members, nine of whom are physicians, representing the several congressional districts, besides the Attorney-General, Comptroller-General, and State Geologist. Each one of the nine physicians is Sanitary Commissioner for his own district, all being appointed by the Governor and holding office for six years; but it is arranged so that only one-third shall go out of office every two years. This plan gives a permanency to the Board, which must add materially to its efficiency. Another important feature is, that the Board is given charge of the collection and publication of vital statistics throughout the State. It is made the duty of physicians and other parties concerned to report all births, deaths and marriages to the *Ordinary* of each county, which county officer is required to report to the Secretary of the Board. It is also made the duty of local boards of health through the State to transmit copies of their reports and publications to the State Board; and, besides, they are required to communicate reciprocally such information as may conduce to the welfare of the people at large in a sanitary point of view.

In this organization we find much to commend, and think the system worthy of imitation, especially in States which have important centres of commercial intercourse and a seaboard, like Louisiana. The expenses of the Board are put on a very niggardly basis. The members are only paid their actual personal expenses in attending to their public duties, and the only salaried officer is the Secretary, who is allowed $1000 a year, and is required to reside at the capital. At the same time he is required to perform duties, the proper discharge of which would consume all his time.

The forms adopted for vital statistics, to be used by the ordinaries, are exhibited, and reports of the same, but the last seem to be only partial.

The minutes of the first annual meeting are included in this volume. They are followed by reports of committees on Endemic, Epidemic and Contagious Diseases; on the Hygiene of Schools; on the Influence of Trees on Health; on the Sale of Poisons and Other Articles Detrimental to Health; on Prisons; and on the Most Effective Means of Preventing Small-pox in Georgia.

We have not space for analysis of these papers or remarks

on their particular merits. The subjects are of practical interest and are ably treated. The plan of organization of this State Board is, in our opinion, well calculated to enlist the coöperation of medical men throughout the State, and on their voluntary and gratuitous efforts alone can its success be achieved.

S. S. H.

Peritonitis. By Prof. Alfred L. Loomis. Pp. 30.

This forms No. IX of the Series of American Clinical Lectures, published by G. P. Putnam's Sons. The most important point is his advocacy of the opium treatment, which is no longer a novelty. S. S. H.

Medical Diagnosis with Special Reference to Practical Medicine. A Guide to the Knowledge and Discrimination of Diseases. By J. M. Da Costa, M.D., Professor of Practice of Medicine, Jefferson Medical College, Philadelphia, etc. Fourth Edition, revised. 8vo., pp. 835. Philadelphia: J. B. Lippincott & Co. 1876.

This work has been before the public since 1864, and has been so generally and highly approved that no extended notice is requisite here. A few points of special interest may be appropriately introduced, some of which are *apropos* to the work of Professor Austin Flint, also noticed in this number.

In the article on Chronic Pneumonic Consolidation, page 265, he uses the term as synonymous with chronic pneumonia, but without specifying whether the croupous or catarrhal variety is alluded to. It is to be inferred that he did not recognize two forms of pneumonia in the first edition. On the following page we find these paragraphs:

"But to return to the points of difference between chronic induration of the lung and phthisis. They may be thus summed up: when the signs of consolidation, whether existing at the upper part of the lung or not, are out of proportion to the general symptoms, there is reason to believe that they are not the result of tubercular infiltration. The non-occurrence of hemorrhage would tend to strengthen such an inference. But the most important information is drawn from watching whether the physical signs undergo changes indicative of a deposit in the hitherto

healthy portions of the pulmonary texture. And it must be confessed that minute and accurate examinations having reference directly to this point are sometimes the only means through which anything like a positive opinion can be reached. Hence time and repeated observations are important elements in the diagnosis.

"In so close a manner, then, may phthisis be imitated by chronic pneumonic induration. It is true, this disease is a rare one; yet we meet with it more frequently than authors on diseases of the chest would imply, who, for the most part, ignore induration of the pulmonary tissue, except as a local attendant on cancerous or tubercular depositions."

On page 267 we find recognition of new doctrines:

"I leave these remarks as they were originally written. Of late years a school of pathologists, with Niemeyer at their head, have endeavored to reëstablish the old doctrine that consumption of the lung and the formation of cavities are most frequently the result of chronic inflammation. According to this view, cases such as those just discussed belong to the grand group of phthisis in which the pneumonic process terminates in caseous degeneration and destruction of tissue. This group, the most common form of consumption, presents somewhat different traits according to the rapidity of its development. It differs from the true tuberculous consumption, due to a tubercular deposit, in this: the latter has no precursory catarrh, the fever and the emaciation are not deferred until the expectoration becomes profuse and purulent, the patient first wastes, and then begins to cough and expectorate. At first the physical examination of the chest gives negative results, and even at a later period the solidification is not so extensive as in the first form of consumption—that following inflammation. Of this, however, one of the dangers is that it may become tuberculosis; though even then the morbid process appearing at an advanced stage of the phthisis has little to do with disorganization of the lungs. How the tubercle arises is not certain, but it has some indirect connection with the cheesy changes of the products of the inflammation."

A paragraph on Catarrhal Pneumonia occurs on page 287:

"*Catarrhal Pneumonia*.—This always supervenes upon catarrhal bronchitis, and the bronchial attack may be so slight as to be readily overlooked. The spread of the disease to the lung-texture is attended with rapid rise of temperature. When the affection attacks adults, it is apt to seize upon those debilitated by previous disease; and it much more commonly affects the upper lobes than does ordinary sthenic pneumonia. As the broncho-pneumonia merely solidifies lobules, the signs of marked consolidation are wanting, or are perceptible over only a small

space. Crepitation is not common, but small moist rales are; and the sputum is not rusty and viscid, but catarrhal. Catarrhal pneumonia is apt to pursue a much slower course than lobar pneumonia, and generally disappears only very gradually. The consolidation and the febrile phenomena may continue stationary for weeks and then gradually disappear. But, on the other hand, caseous degeneration and breaking down of the lung-texture may follow, or tubercular infiltration may take place. Phthisis, in truth, is in adults a not uncommon termination."

A general view of the author's expressions on the relations of catarrhal pnemonia and pulmonary phthisis leads to no precise conclusions. This is not altogether satisfactory to the reader, but what must be expected from a writer who has not quite made up his own mind? Perhaps it is the wisest course at the present time.

Rarely do writers elsewhere describe yellow fever as it exists in New Orleans. Prof. Da Costa deviates from our standard less than most, but some points of difference may be noted. He gives parallel columns to illustrate distinctions between this disease and bilious remittent fever, and mentions pain in the calves of the legs, as well as in the back and forehead, as belonging to yellow fever. In our observation the legs have not been found to suffer. No allusion is made to the fulness and compressibility of the pulse in yellow fever, which are among the most characteristic features of the disease. Little muscular prostration in yellow fever, and much greater in bilious remittent, he observes by way of distinction. We find muscular prostration excessive in yellow fever. Patients cannot realize it, unless they attempt to get up, and this we always forbid, as the consequence would be far more disastrous than in the malarial fever. Treatment, he observes, is unsatisfactory in yellow fever. If by treatment he means active medication, he might add disastrous to unsatisfactory. In New Orleans the best practitioners *manage* their cases, rather than *treat* them in the sense mentioned above; and there is reason to believe that the difference between life and death depends more on close attention to minute details in this fever than in any other. Bad management may destroy the lightest case, and the opposite may rescue one after the worst symptoms have supervened. But in finding fault we should consider that it is hard to describe what one has not seen. Physicians are blamed for disagreeing, because they are expected to understand what they are talking about. Our legal and clerical

brethren disagree, and no one is surprised. The obvious inference is, they are not expected to understand what they are talking about.

The text is illustrated with 55 wood cuts, all prepared especially for this work. The mechanical execution of the book sustains the high reputation of the publishers. S. S. H.

Phthisis: Its Morbid Anatomy, Etiology, Symptomatic Events and Complications, Fatality and Prognosis, Treatment, and Physical Diagnosis. In a Series of Clinical Studies. By Austin Flint, M.D., Professor of Principles and Practice of Medicine, and of Clinical Medicine, Bellevue Medical College, etc. 8vo., pp. 446. Philadelphia: Henry C. Lea. 1875.

This work is divided into five chapters, bearing as captions the main topics named in the title above. The plan of study adopted by the author is numerical, based on observations of 670 cases noted during a period of 34 years. This method undoubtedly gives more accurate conclusions than any other, and to it is to be credited a very important share of our accumulated knowledge in practical medicine.

In the introduction Dr. Flint disclaims any intention to discuss formally the various pathological questions on phthisis, which have of late excited so much interest; but he does not fail to touch on them incidentally, and in this way furnishes the strongest argument against the views of the present German school, which have come under our observation. Some points in this controversy are, in our opinion, of sufficient importance and interest to justify particular notice here.

In regard to the relation between gray granulations (miliary tubercles) and tuberculous exudation or infiltration, he ascribes the priority in time, and consequently causative action, to the former. They excite, he supposes, irritation by mechanical pressure, and thus provoke inflammatory exudation. The presence of this softened matter without the appearance of granulations is accounted for by their disappearance in the formation of cavities, and this seems reasonable enough. With the other view of the case, the presence of abundant miliary tubercles without yellow tuberculous deposits, abscesses and cavities in the lungs, necessitates the supposition of such deposits elsewhere, to serve as foci of infection for the production

of tubercles. Cases occur in which deposits have not been discovered; yet it is possible that closer search might have disclosed them, or that they may have disappeared by absorption.

For the purpose of elucidating this question of priority and causation, Dr. Flint proceeds to consider a statement of Niemeyer—"The greatest danger for the majority of consumptives is *that they are apt to become tuberculous*" (having reference to miliary tubercles). He concludes, by a numerical observation of his own cases, that the existence of these granulations with the processes characterized by softening and cavities, does not add to the gravity of the case. Moreover he mentions cases presenting old cavities free of softened products together with very abundant dissemination of miliary tubercles. The latter, being a recent formation, cannot be ascribed to the former, he presumes.

Another point urged by Dr. Flint is, that his conclusions are confirmed by clinical observations, while no such claim is made in support of the recent German doctrines. This is certainly an important consideration. Those familiar with Niemeyer's work must have been struck with the dogmatic positiveness of his doctrines; at the same time they will observe a want of clinical observations, though references to pathological anatomy are abundant.

In noting the influence of antecedent diseases, Dr. F. is quite antagonistic to the new doctrine, that most cases of phthisis result from catarrhal pneumonia, which necessarily begins as a bronchitis. In his recorded cases he observes: "With a single exception, in no instance do the characters of the cough, at its commencement, show that bronchitis existed as an antecedent affection. On the other hand, the histories, as regards the early pulmonary symptoms, go to show that they were incidental to the phthisis. The evidence of this is in the slightness and the dryness of the cough at first and for some time, or, in not a few cases, for a considerable or a longer period afterward. These facts are inconsistent with a primary bronchitis." He then proceeds to remark on the frequency of bronchitis, and asks the reader if, in uncomplicated cases of this complaint, there is ground for apprehension of phthisis as a consequence. Furthermore—

"I shall not here discuss this doctrine on the ground of its inconsistency with well known pathological facts, such as the

frequency of bronchitis in childhood and in old age, periods of life when the development of phthisis is relatively rare; the fact that for bronchitis to extend into the bronchioles it must be of the variety known as capillary, and this variety is exceedingly rare during the period of life when phthisis is most apt to occur; the improbability of bronchitis, which is a bilateral affection, giving rise to the "catarrhal pneumonia," *i. e.*, exudation, on one side only, for a considerable period before the affection occurs on the other side; and finally, regarding the affection as a variety of chronic pneumonia, the fact that a bronchitis, however acute, and even when it affects the smaller tubes, has no tendency to give rise to an acute pneumonia. Waiving a discussion into which these and other facts would enter, I will simply raise the inquiry, How is the doctrine that pulmonary consumption, as stated by Niemeyer in another quotation, 'arises, with rare exceptions, through extension of a chronic catarrh into the finer terminal bronchioles, and thence into the pulmonary vesicles,' to be either proved or disproved. The answer to this question is plain. The doctrine is to be either proved or disproved by direct clinical observation; that is, determining, by an analysis of a sufficient number of recorded cases, whether pulmonary tuberculosis often, or rarely, commences with, or is preceded by, bronchitis."

With regard to the significance of hæmoptysis, he again disagrees with Niemeyer, in not recognizing it as a cause of phthisis, inasmuch as the interval between the two is quite considerable in a large proportion of cases. On the other hand, when its appearance is subsequent to the development of phthisis, he has found it to be favorable as regards both the arrest and the duration of the disease.

The reciprocal relations of marriage and phthisis in the female are important, and the author's views are worth noting. While he regards child-bearing as exercising a certain determining influence on the development of phthisis, he inclines to the view that the pregnant state retards the progress of the disease previously existing. How much of the credit in inducing the phthisical state is to be credited to lactation, in distinction from simple pregnancy, he does not venture to decide.

In the chapter on treatment, we find that the married state is regarded as rather favorable to the individual who has previously contracted the disease, even in the female. The conclusion, for the female at least, would then be—If you apprehend phthisis, do not marry; if you have already incurred it, marry, as far as concerns merely your own welfare, without reference to posterity.

On the influence of congenital predisposition he is quite decided, having found that in 54 out of 220 observed cases, "two or more members of the family, including under this term two successive generations, were affected with phthisis in addition to the patient." This is in accordance with the popular view, in harmony with the idea of its diathetic nature, and rather in opposition to the notion of its accidental origin, as taught by the German school.

The chapter on Fatality and Prognosis we must pass over, not that it is deficient in interest, but for want of space; and for the same reason the notice of the chapter on Treatment must be very brief. Better results are claimed in the present management of phthisis than were formerly obtained, and this fact is not credited by Dr. Flint chiefly to cod-liver oil, as by many writers, but to more rational treatment in a variety of ways, especially in respect to alimentation and hygiene. He attributes no specific virtue to cod-liver oil above other fatty substances, and regards it rather as an aliment than a drug.

Alcoholics enter largely into the author's treatment. He remarks: "As regards their usefulness, I would place them in the category with tonic remedies, such as quinine in small or moderate doses, and the chalybeates." We should class them with cod-liver oil among the aliments. The author makes another remark on their use, with which we cannot quite concur—"I take this occasion to repeat a statement which I have repeatedly made heretofore: among the great number of cases in which I have advised alcoholics to be taken as a therapeutical measure in cases of phthisis, I have never known of a single instance of a patient becoming addicted to their use. As a rule, patients are glad to discontinue their use when it is considered judicious to do so. On this point I desire to be understood as speaking deliberately and emphatically." We have in mind five consumptives, all medical men, addicted to the immoderate use of alcoholic liquors. Whether the habit was acquired subsequent to the determination of phthisis in all cases, we can not say; but in two cases we can declare this positively, and in one intemperance led to death by Bright's disease. With these minor differences, we quite concur with the author on the great value of alcoholic beverages. As regards other therapeutic management, we find nothing calling for exceptions and much to commend.

The closing chapter, on Physical signs and Diagnosis, covers

only 20 pages, but whatever may be wanting here will be found in his special work on this subject.

The prevailing tendency of Dr. Flint's doctrines here is decidedly conservative, and in some important points antagonistic to those of the German school, which have lately made great progress in this country. The study of the pathology of phthisis by aid of the numerical application of clinical observations gives a precision to the author's conclusions far above theoretical speculation, however plausibly and positively uttered. His previous high reputation in this particular branch of medicine called for a decisive expression, and we are glad that he has spoken. S. S. H.

Human Physiology for Students and Practitioners. By Prof. Jno. C. Dalton, M.D. Pp. 825. Philadelphia: Henry C. Lea. 1875.

We heartily welcome this, the sixth edition of this admirable text-book, than which there are none of equal brevity more valuable. It is cordially recommended by the Professor of Physiology in the University of Louisiana, as by all competent teachers in the United States; and wherever the English language is read this book has been appreciated. The present edition, with its 316 admirably executed illustrations, has been carefully revised, and very much enlarged, although its bulk has not been perceptibly increased.

By many, Prof. Dalton's teachings, in his earlier editions, in reference to the elongation of the heart in its systole, and to the production of animal heat, were deemed objectionably dogmatic. In this last (sixth) edition these subjects are presented to the student in a manner free from objection. His chapter on reproduction continues to be worthy of the highest commendation.

The new chemical notation, and the metrical system of weights and measures, have replaced entirely their less worthy predecessors, and are justly deemed to be the true representations of present and future science. That they *ought to be* universally understood and used is indisputable, but what ought to be, unfortunately is not; and it is to be feared that Professor Dalton, in omitting from his book comparative tables of the relative values of the old and new systems, and in not with sufficient

frequency, introducing in brackets the old equivalents of the new signs used, has failed to do all he might have done to instruct his readers, and to render his change universally comprehensible and acceptible.

Science cannot too soon throw off the thraldom of all such mediæval absurdities, and wasters of time and brains, as "twelve barleycorns make one inch," etc. The simple decimal system alone deserves the consideration of the educated, and it is hoped that Prof. Dalton's new edition may induce many now ignorant of its merits to render themselves familiar therewith.

Text Book of Human Physiology. By Prof. Austin Flint, jr., M.D. Pp. 978. New York: D. Appleton & Co. 1876.

The extensive and merited reputation of Dr. Flint, as the author of the well-known work on Physiology in five large volumes, renders praise of this Text Book, which is but a condensation or abridgement of his preceding treatise, a work of supererogation. This condensation has been well done, and the important facts inculcated brought within the means and the time of the over-worked practitioner and student.

The value of the work is greatly enhanced by more than three hundred illustrations, which in artistic value are not surpassed in any physiological work. The publishers have discharged their duty as to paper, type, etc., in such excellent style as to add greatly to the attractiveness of this centennial volume, which Americans can welcome with pride as one of the indications of the progress of the nation in this fundamental branch of medical science.

Elements of Human Physiology. By D. L. Hermann, Professor of Physiology, University of Zürich. Translated from the 5th German edition by A. Gamgee, M.D., F.R.S. Pp. 587. London: 1875.

The physiological student whose knowledge of languages does not include the German, will welcome this translation of a standard text book, which has long maintained its place as the most concise, comprehensive, and philosophical work on Physiology in any European language. In condensation of valuable

matter, it greatly surpasses any work on the subject. Its pages are comparatively small, and yet of such pages the total number is less than six hundred.

The student who can decorate his shelves with Dalton, Flint, and Hermann, all published within the past six months, may feel confident that he is in possession of all the text books of Physiology requisite for his thorough comprehension of the subject.

CORRESPONDENCE.

Ον δι θεοὶ φίλουσιν αποθνησκει νέος.

To the Editor of the New Orleans Medical and Surgical Journal:

Dear Sir—It is pleasing, as well as instructive, to turn occasionally from a consideration of scientific matters in the various departments of medical study, and to look around upon the grand *armée medicale* in whose ranks we are enrolled. It is well to survey the ground upon which we are marching, to consider the points we are approaching, and upon some grand field day, as is furnished by the debates at some of our great societies, to study the abilities and tendencies of our leaders.

In making such a halt and looking down the line of march, one cannot but be struck with the numerous vacancies which have occurred in the ranks, and the several leaders who have dropped from the head of the column during the past few months. Some of them who had grown gray in the service, fell at their posts, with ambition satisfied and adorned with honors. Others were in the line of promotion, and fell at the time when they were giving promise of the brilliant and useful achievements which are so much needed just now. It is the death of the latter class which strikes us as being most sad and irreconcilable.

As a representative of the former class, we would refer to the distinguished J. Hughes Bennett, of Edinburgh, whose death occurred during the past autumn at the advanced age of sixty-three years. The name of Bennett is inseparable from the history of the departments of physiology, pathology, and practical medicine, during the past thirty years. A teacher of Physiology and clinical medicine in one of the great universities of the

world, and by his attractive ability moulding the minds of a vast number of young men, it is difficult to estimate the extent and power of his influence upon the practice of medicine at the present time. His works upon physiology and practical medicine are familiar to all English and American physicians; his method of teaching is now adopted in the medical schools of both nations, and if Dr. Graves deserves as an epitaph that he fed fevers, it may well be said of Dr. Bennett that he demonstrated the natural tendency to recovery of uncomplicated pneumonia. Dr. Bennett contributed much of value to therapeutics by his investigations upon the action of mercury, podophyllin, and the medicines which are antagonistic, but by far the most valuable of his labors was his treatment of pneumonia and phthisis. He, more than any other, reformed the treatment of these maladies, and did away with the active antiphlogistic and destructive measures which had so long prevailed. The labors of Hughes Bennett are indicative of the highest type of the scientific physician. Being a practical histologist and physiologist, and a profound pathologist, his original and reformatory views were the result of thorough investigation and deep study, rather than of accidental observation or circumstance. As a physician and teacher, as a physiologist, pathologist and therapeutist, he has made a deep impression upon the age in which he lived. His influence upon medical practice will be daily felt through the large number who sat beneath his teaching, and for years to come his name will be familiar to those pursuing the branches which his labors enriched.

In reviewing the losses recently sustained by the profession, we cannot forbear mentioning one who, if we mistake not, Mr. Editor, was formerly your colleague, and long your intimate friend. Dr. Lewis Rogers, of Louisville, like Bennett, Nèlaton, and Demarquay, had grown old in the harness, and died looking back upon an honored and useful career. Dr. Rogers contributed no grand discovery to medical science, but possessed originality in the application of principles to practice, as the historian manifests that quality in the record of events. He was a fine type of the learned, experienced and skillful practical physician. Although a successful teacher of medicine, it was as a practitioner that he excelled. He died with a national reputation, respected by the whole profession for his attainments and

honored for his pure character. It is, indeed, difficult to supply the places of such men.

In what striking contrast to the death of these veteran physicians, who passed quietly away after a complete career and a life covered with honored success, is that of some who were swept off early in their course with bright hopes and fair budding promises all around them. We have in mind two representatives of this class, who, at a comparatively early age, had so identified themselves with the profession of England and this country as to make their loss deeply felt by all in each country who are laboring for the advancement of medical science. Both possessed burning enthusiasm, unlimited ambition, superior intellect, untiring industry and devotion, the highest integrity and uprightness, intellectual and medical culture of the highest order, and many endearing characteristics.

A little more than a year since, Francis Edmund Anstie died in London at the age of forty-one years. What physician in that great metropolis has accomplished so much in so short a time, and who ever gave promise of more valuable scientific labor, than did the lamented Anstie? Actuated by a deep love of medicine, he labored hard at some of its most difficult problems, and he has left results of enduring value. He possessed the happy combination of scientific and practical acumen, which characterizes those whose labors are most valued for intrinsic worth. Widely read in the literature of his profession, accomplished in physiology, pathology and therapeutics, he brought a richly stored mind to the bedside of his patient and to his editorial duties. He labored for the dignity of medicine, was enlisted in every effort to relieve injustice, and was truly a benefactor. The substantial results of his severe labors were just beginning to be realized, when in the earnest pursuit of duty he received an infection which put an end to his valuable and noble life. Medicine, although rich in able and devoted workers, can ill afford for such lives to be prematurely sacrificed.

Francis Edmund Anstie has an imperishable monument in his valuable work on *Stimulants and Narcotics*, in numerous essays and experiments, and in *The Practitioner*, which is a product of his brief but useful career.

The profession of America has recently felt a loss, sad in its parallelism to that of our English brethren just referred to. Dr. John D. Jackson, of Kentucky, dying at the same age as Anstie,

possessed many admirable traits of character in common with him. With the elements of the medical scholar and practitioner in rare combination, he was indeed an honor to his profession. When reviewing his life and labors, we cannot but wonder, as in the case of Anstie, that so much was accomplished in such a short career. With remarkably quick perception, with untiring industry and devoted application, with an unusually practical turn of mind, with enthusiastic interest in every effort to advance his calling, he elevated his profession by his practice, and enriched its literature with his pen. With a bright intellect and pure character, he gave his undivided time and labor to his profession, and fell, early in life, a victim to over-work and self-denial.

But both Anstie and Jackson lived long enough to build their own monuments, which will often be viewed while the present generation exists, and perpetuated through years by the literature of our age.

As stated at the beginning of this communication, it is well to occasionally turn from the accustomed paths of medical study, and consider the characteristics of our distinguished dead. The necrology of medicine is by no means an insignificant portion of its literature. The history of every life, however obscure it may be, teaches some valuable lesson. The first two lives alluded to here present the character of the scientific and practical medical man complete and entire. With position, honor, and respect, they demonstrate what a life of labor and rectitude can accomplish, and that after all there is something in medical life worth the living.

The career of the other two illustrate how much can be accomplished by industry and devotion in a comparatively short time, and demonstrate the appreciation and respect which true merit and superior intellect will obtain.

These lives teach many beautiful and valuable lessons, and prominent among others is the one attractively set forth in a verse of an immortal psalm:

> "The lives of great men all remind us,
> We can make our lives sublime,
> And departing, leave behind us
> Footprints on the sands of Time."

I am, Sir,

Very respectfully,

ALUMNUS OF THE UNIVERSITY OF LA.

NEW ORLEANS, December, 1875.

To Editor of N. O. Medical and Surgical Journal:

Sir—The papers presented to the meeting of physicians to discuss Carbolic Acid, evince serious misconception of the theory and method of disinfection against yellow fever, and contain some important errors of statement.

The marked localization and the very limited range of action of the cause of yellow fever, are universally recognized facts. Reasoning from the method and range of action, and mode of propagation of yellow fever, its poisonous cause is evidently not gaseous in its nature. It seems to attach itself to the soil, to walls, and probably to surfaces in general. If it be a germ, either vegetable or animal, it seems to be low-lying, propagating from centres along surfaces, equally in all directions, against the wind as freely as with air-currents. It is also evident that the cause must ante date the effect; that the yellow fever poison exists in activity some days before the moment of the attack of sickness, as the period of incubation in most persons is four days, and the poison doubtless has existed in more or less force for an indefinite period preceding the precise moment at which the incubation of the disease began.

To completely destroy the poisonous cause, and to arrest the spread of the disease, disinfection must, both in theory and practice, be applied to every infected portion of the whole suspected locality. Even with cordial coöperation on the part of householders, this cannot be effected with absolute perfection in an inhabited square. The disinfectant is distributed therefore upon the surface of the streets, both roadway and banquette, at a distance supposed to be entirely beyond the presence of the yellow fever poison, in such manner as to encircle the fever centre by broad continuously disinfected surfaces. This is repeated at short intervals, to preclude, if possible, the passage of the poison across the belt thus laid down. The impossibility of complete disinfection of all surfaces in infected localities, under houses, etc., is evident, and the expression "thoroughly disinfected" is therefore merely relative, denoting the nearest attainable approximation to perfect disinfection.

Perfection in mode of disinfection being impossible, total and immediate annihilation of the yellow fever poison is not expected, but its propagation is rendered less rapid and its march im-

peded. If foci of infection appear somewhat late in the summer, the practice of disinfection may delay the general spread of the disease, until a decided fall of temperature puts an entire stop to its progress.

The experiment of controlling yellow fever by use of coal-tar acids is being conducted in as strict accordance with scientific method as is practicable with the means and intelligence engaged. All cases, with their locality, history, date of application of disinfectants and their apparent results, their real and apparent relation to previous and subsequent cases, are carefully studied and recorded. The gathered facts, as at present understood, give a result in favor of the control of yellow fever by the use of the coal-tar acids. If the fact of the complete or partial control of yellow fever by any one agent be ever established, thereafter experiment can advantageously begin to secure others more pleasant and cheaper.

On page 416 of the Journal, in section 1st of the letter of Dr. Brickell, the applicability of carbolic acid to the destruction of cholera germs is allowed, but the work and testimony of Dr. Crookes in the cattle plague of England are totally ignored.

In sections 2, 3 and 4, of the same letter, the absurdity of disinfection of the atmosphere is argued. As general atmospheric disinfection has been neither proposed nor attempted by those who are conducting the carbolic acid experiment, consideration of this and similar arguments in the following papers is unnecessary.

Section 5 of the same letter, in answer to the question whether "the Board of Health did really use carbolic acid in these experiments," says: "Beyond a doubt they (the Board) never have." "They have used, and are still using, only a crude compound, which most probably does not contain ten per cent. of carbolic acid proper," etc. The so-called crude carbolic acid used for disinfection has been each year, and several times each year, submitted to chemical analysis, and has been announced by Dr. Perry to contain amounts of acids, carbolic and cresylic, never less than eighteen per cent., usually twenty to twenty-five per cent. Besides these it contains other empyreumatic acids, stated by the latest experimenters to be more energetically disinfectant than pure carbolic acid. The white disinfecting acid, known to commerce as Calvert's No. 5, is a mixture of cre-

sylic and carbolic acids, the latter predominating, but free from tar oils, and in consequence is frequently termed pure acid.

The same section states: "The result of my inquiries leads me to believe that it would have been far cheaper for the Board of Health to have used real carbolic acid, and then their experiments would have been legitimate." "Real carbolic acid," affording by chemical manufacture picric acid, is of so considerable value as to be unavailable for general disinfection, even were its disinfecting power equal to that of cresylic acid. If such "real carbolic acid" had been used, "then their experiment would have been legitimate." It is difficult to understand why illegitimacy attaches to an experiment because the remedy used is ill smelling.

On page 419, speaking of the yellow fever present this year, the closing line of the remarks of Dr. Henderson states: "It (the fever) will not probably affect a large number of people, because the strangers in our city are wanting." The assertion that "material" "food for yellow fever" is not to be found in the city, has been quite frequently made by those not well informed on the subject. In 1873, and each succeeding year, a census has been taken of every square wherein a case of yellow fever has occurred, and which has been disinfected. This examination shows a very large proportion never to have had yellow fever. In the 17 squares disinfected in the Fourth District last summer, and in which seventeen cases of fever occurred, a population of six hundred white persons reside who have never had yellow fever. As to the necessity of an influx of strangers to furnish food proposed, it should be stated that, of the 17 cases mentioned above 11 were natives of Louisiana, and of these, seven were natives of New Orleans. In the infected portion of the Second District reside 116 whites, less than five years in the city, and of the total population of 1788 whites, only 173 positively reported themselves as having had yellow fever. In the two squares disinfected on Miro street, reside 36 white and 35 colored inhabitants. Of these, 28 white and 33 colored persons had never had yellow fever. In the Jackson Railroad focus resided, whites 92, colored 34, of whom whites 64 and colored 30 had never had yellow fever. In the New Basin focus resided; whites 163, colored 66. Whites 124 and colored 64 have never had yellow fever.

Upon page 419, in its closing paragraph, are quoted with

approbation the experiments of Dr. McDougal on vaccine virus, who says: "It is surely plain that the destructive action of carbolic acid on *variolous* matter and other *zymotic* poisons must be null." It is well known that agents quickly injurious or even destructive of life to one class of beings are borne with impunity by another class, or may even serve to support its life. No results of experiments upon variolous matter, yellow fever, measles, scarlatina, or any other zymotic poison, are offered in evidence of the truth of Dr. McDougall's assertion, and, in the absence of facts, the statement must pass as a piece of unscientific, marvellous assumption on the part of Dr. McDougall.

In Sansom's "Antiseptic system" will be found full and satisfactory reports of all experiments up to 1871—the date of its publication.

Carbolic acid has never been used by the Board of Health to disinfect small-pox cases. In 1869, in an epidemic of small-pox in San Francisco, it was thoroughly and scientifically tried, and found to have no value as a disinfectant against that disease. The worthlessness of carbolic acid as a destroyer of variolous poison being well known, it has never been used for that purpose here.

According to the fourth line of page 421, "Acid phenic is disinfectant, but only temporary." If carbolic acid by actual contact kills animal or vegetable growths, its disinfectant action is permanent as to them, but of course will not hinder the multiplication of organisms which have escaped its effect. The paragraph as a whole confounds the idea and action of deodorants and disinfectants. Carbolic acid has no retroactive effect, is not directly or properly a deodorant, but indirectly becomes one by hindering putrefactive processes and the formation of sulphur compounds. The zinc-iron disinfectant, now several years in use, combines the chemical odor-destroying power of the mineral salts with the preventive effect of the coal-tar acids.

On page 426 of the papers is found the following paragraph: "Every house where a case was reported as having occurred, was, under the direction of the health officers, cleansed and fumigated with sulphurous acid gas and carbolic acid gas. The premises were subjected to the provisions of the health ordinance, and the privies were purified by the sulphate of iron." This passage is from the Report of Dr. S. A. Smith, President of

the Board of Health, save the word "gas," interpolated after carbolic acid.

The very next sentence of the report is, however, not given, but is this: "The slow development of the cause of the fever, its apparent temporary suspension in particular localities, the exceeding mild character of the disease, *leads to the hope* that it *may be kept in check, if not entirely eradicated* in *the first cases, by the prompt application of disinfectants.*"

The theory and method of disinfection in 1867 having been essentially different from that now in use, discussion of its completeness and effectiveness that year is needless.

On the 16th of March, 1870, the original Quarantine Act of 1855 was so amended as to give the Board of Health power to select its Sanitary Inspectors, fix their salaries, and to call upon the city government for any disinfectants needed.

The successful work of Dr. Crookes against the cattle plague suggested the use of the local applications of carbolic acid, but it was not until about the close of September, 1870, that experience and reasoning upon observed facts originated the governing idea of disinfection as now practised. Those who followed the sanitary work of 1870 most closely, find the testimony of even that first year of attempt favorable to carbolic acid disinfection. The figures given on page 428 of the Journal show that, while yellow fever ceased to extend, and cases diminished in the Second District, in other parts of the city, where disinfection was not so energetically carried forward, the disease spread and cases became more numerous.

The statement that "It is evident that the disease, as usual, declined as the season progressed, and the weather became dryer and cooler," is not true of 1870, as it declined in the Second District and increased in the other parts of the city.

On page 429 it is asserted: "These facts, on the contrary, show in the clearest manner that the limited nature of the epidemic (1873) was due to the peculiar conditions of the climate and population. One essential element was wanting—strangers, unacclimated persons from Europe and the colder regions of America."

The disease appeared in New Orleans before it did in either Shreveport or Memphis, and the greatest mortality was at nearly the same date as at Shreveport. As to population, there were in the various squares of the city in which yellow fever occurred,

a population of whites who had come from abroad, or been born since 1867, of 4237, of whom 388 only had had yellow fever. Whether this limited prevalence be regarded as sequence or consequence in 1873, it has since been repeated here, as a contrast to the experience of other localities, and can claim consideration, if disinfection "be discussed with calmness, deliberation and justice."

The first paragraph of page 430 contains the expression, "it will be fair to add at least one-half more, giving at least 1361 as the mortality due to this disease under carbolic acid disinfection," etc. The experience of 1870, when thirteen person who died of undoubted yellow fever were interred upon certificates of death by pernicious, congestive, or other forms of malarial fever, and the consequent failure to employ disinfectants at the moment when most, if ever valuable, namely, at the very beginning of an epidemic, led to the measure, adhered to since that year, of securing from the Registrar's office, every day after the 1st of June, a list of all deaths by all fevers and congestions. These were immediately furnished to the Sanitary Inspectors of the districts, and prompt investigations made, thus rendering it highly improbable that one-third of all deaths by yellow fever escaped observation.

The following table shows the deaths by yellow fever during the years named, and also the deaths by all forms of malarious fever during the last six months of each year, the period during which yellow fever prevailed.

Year.	*All Malarious Fevers.*	*Yellow Fever.*
1869	252	3
1870	199	587
1871	216	59
1872	173	39
1873	318	226
1874	398	11
1875	298	63

It appears that there is no definite relation between the mortality from malarial fevers and that from yellow fever. Certainly they do not follow the same rule in prevalence.

It is sometimes imagined that persons may die of yellow fever, and be interred as dead of various forms of malarial fever; but reference to the respective lines of death by fevers in our mortuary

charts shows that no marked rise of the line representing these fevers occurs, such as would be visible were yellow fever causing any considerable, though concealed, mortality. The daily examination of the registry for all deaths by fevers and congestions, and their subsequent investigation by the Sanitary Inspectors, would prevent any serious mistake, even though the medical profession was generally lacking in knowledge and veracity, as such insinuations imply.

The entire baselessness of the assumption of its "being fair to add one-half more to get the real number of deaths by yellow-fever" is evinced by analysis of the mortality of the year 1870. 587 deaths are reported by yellow fever, and one-half of that number wrongly named, 293½, are to be added to the 587, to get the actual mortality by yellow fever. As but 199 persons died of malarious fevers during the months in which yellow fever prevailed, there are yet lacking 94½ deaths to fill the list, granting all the malarious deaths to have been yellow fever deaths. Yellow fever and the professor seem to have "overdrawn their account."

The second proposition, page 430, is not confirmed by the serious epidemics of 1854 and 1855, following immediately upon the great epidemic of 1853, nor by the successive epidemics of 1841, 1842, and 1843.

Proposition No. 3 of same page is incorrect in three instances, viz., stating that no yellow fever occurred in 1859, 1860, or 1865. Dr. Chaillè states (Table No. 2, "Vital Statistics"), that 91 deaths occurred in 1859, 15 in 1860, and one death in 1865.

The statement of proposition 4 needs examination. Among those having a "limited number of cases" in the year 1818—deaths 115. The estimated population was then 25,000. 115 deaths then were equivalent to 920 now. In 1822 (population in 1820, 27,176), 808 deaths occurred, equivalent to more than 6000 in 1875—a very respectable epidemic.

In 1829, population about 45,000, deaths 215—equivalent to 968 now. In 1833 population about 55,000, deaths 210—equivalent to 775 now. 1839 was an epidemic year; 1842 was also an epidemic year. [Chaillé] These and among the years given as years of limited prevalence, whilst 1870, with a yellow-fever mortality of 587, is classed among the years marked by "great epidemics."

On page 421, Professor Lewis remarks of "the use or

rather abuse of carbolic acid," that in 1867, "*It had no effect whatever.*"

On page 13 of the Report of the Board of Health for 1867, is the following paragraph from the official report of Professor Lewis, then health officer of the Third District. "The number of houses disinfected of yellow-fever from the middle of August to November 1st, was about three hundred. The first case died at the hospital, but was taken there from Antonio Baptistillas, in Victory street near Elysian Fields. Four days afterwards, there were upwards of forty cases on Victory from Frenchman to Elysian Fields.

Every house is a boarding house, and many were filled overflowing with strangers.

These houses were not only fumigated with sulphur, and disinfected with sulphate of iron in solution, but were pumped from top to bottom with carbolic acid, which impregnated the atmosphere for some distance off. This was repeated as often as new cases occurred.

From the 1st of September to the present time, (Date of report December 2d, 1867,) there has not been a more healthy neighborhood, and notwithstanding new sets of boarders have taken the places of those who have gone away, also equally unacclimated, but very few to my knowledge have been sick with yellow-fever."

It is evident that Professor Lewis drew correct inferences from his own labors in the Third District. The principle of this disinfection, however, not being clearly understood at the time, and the disinfection being effected in no portion of the city with a promptitude and thoroughness at all comparable to that manifested by Dr. Lewis, similar results were not elsewhere attained, and the Professor, as is shown by remarks in the paper now under consideration, has thereby been led to doubt the conclusions legitimately drawn from his own thorough, as the word was then understood, and energetic work.

Section 3, page 436, infers from experience of 1875, that the use of carbolic acid disinfection does not prevent the spread of yellow-fever, because, after breaking out in one place, it has done so in other localities. Before such conclusion can be considered a necessary one, the questions of the indigenous or exotic nature of yellow-fever, and the portability or non-portability of

its cause must be settled: certainly five foci, independent of those in the Second District, made their appearance last summer.

As to the statement that "it has again broken out in the same house and in the same squares after a thorough disinfection of the premises," the records reply that in two squares in the Second District; second case occurred after so-called "thorough" disinfection. One of these appeared thirty days after the first disinfection, and the house itself was never disinfected, owing to the opposition from the family. Indeed, the disease may have been contracted in another locality. The second case is known to have spent the larger portion of the night, six days before his attack, in an infected house. Other similar cases reported proved, upon careful analysis of the facts, to be a failure of thoroughness of disinfection, or were synchronous with that process.

In the five other yellow-fever foci of the city, but one case is known to have appeared after disinfection.

On page 437, in the list furnished as characterized by the absence of an epidemic, the following are incorrect: 1824, 1825, 1827, 1828, 1829, 1830. [Chaillé.]

Further along the statement is made. "In 1854 we had an unknown number of deaths throughout the city, and no epidemic."

This statement appeared in the reprint of the paper without correction. In 1854, a very severe epidemic of yellow-fever prevailed, and the mortality therefrom was 2425.

Still further along appears the statement, "in 1857 we had an unknown number of deaths throughout the city and no epidemic." There were 200 deaths from yellow-fever in 1857, and the first death (undisputed) did not occur till September 20th, thirty-nine days later than the first death of 1875.

For the corrections made of these numerous errors, see "Vital Statistics of New Orleans," by Stanford E. Chaillé, M.D., Professor of Physiology and Pathological Anatomy, Medical Department of the University of Louisiana.

In reference to the matter of the failure of Carbolic Acid disinfection in the epidemic of 1873 at Memphis, spoken of upon page 439, the following extract from a letter of Dr. Erskine, President of the Board of Health of Memphis, is furnished:—

"I did not enter upon duty as President of the Board of Health until about the 10th of October. The disease had then prevailed more than three week as an epidemic. Carbolic acid had not

been used up to that time. We commenced the use of it about the middle of October; were unable to obtain carbolic acid sooner. By that time the disease had extended itself all over the city.

"I do not think we had a fair trial of it, in fact, we used it, comparatively speaking, very little.

"I should like to see it tried more thoroughly."

The fact that water extinguishes fire is not invalidated, if a city on fire at hundreds of points is totally burnt.

In conclusion, to destroy yellow fever, or limit its spread by disinfection, would probably be a matter difficult of execution, even if all the factors of the experiment were known and valued. Owing to our ignorance at the present time, the difficulties surrounding the experiment are correspondingly great. As, however, all known cases are recorded, mapped, and investigated, even though mistakes are made, it is hoped, if the process be continued sufficiently long, that a result conformable to truth will be at length evolved. In a series of observations conducted on correct principles, honestly made and recorded, the tendency is to eliminate errors, to bring truths into prominence, and develop law. Careless or partial statement, heated or partial special pleading, hasty conclusions, and delusory generalizations, are severely prejudicial to proper scientific inquiry. The experiment under discussion is out of the cell of the theorist and the laboratory of the chemist, and is to be settled by practice. While recognizing its position as the servant of the public, the Board of Health accepts no dictation from the past or present, but will cheerfully conform its theories and methods to the logic of carefully accumulated and analyzed facts.

Very respectfully,

C. B. WHITE, M.D.

EDITORIAL.

American Medical Journalism.

Under this caption the readers of the February issue of the *Richmond and Louisville Medical Journal* are entertained with a ponderous editorial, in which mention is made of the NEW ORLEANS MEDICAL AND SURGICAL JOURNAL. We beg to correct an error into which the writer has, no doubt inadvertently,

fallen. The present Editor of the NEW ORLEANS MEDICAL AND SURGICAL JOURNAL was never its proprietor—never claimed to be—never desired to be. The error would be quite unimportant if, in the connection in which it appears, there were not a possibility that an insinuation might be extracted therefrom that this JOURNAL was upon its last legs, because it was the property of a "mercantile house." We are sure the amiable writer of the editorial never intended that any such intimation should be attached to language which he would not have employed, if he had been better informed in regard to our business matters.

Centennial.

The following circular has been received, and we with pleasure give it the solicited publicity.

AMERICAN CENTENNIAL CELEBRATION.

INTERNATIONAL MEDICAL CONGRESS.

The Medical Societies of Philadelphia, animated by a just spirit of patriotism, and an earnest desire to unite with their fellow-citizens in celebrating the Centennial Birthday of American Independence, have taken the initiatory steps for the formation of an *International Medical Congress*, by the appointment of delegates from their respective bodies, who were empowered to organize and perfect a scheme for the above purpose. In accordance with the authority thus given, the delegation has organized

THE CENTENNIAL MEDICAL COMMISSION,
with the following officers:

President.....Samuel D. Gross, M.D., LL.D., D.C.L., Oxon.

Vice-Presidents.... { W. S. W. Ruschenberger, M.D., U.S.N.
Alfred Stillé, M.D.

Recording Secretary..William B. Atkinson, M.D.

American Corresponding Secretaries { Dan'l G. Brinton, M.D.
Wm. Goodell, M.D.

Foreign Corresponding Secretaries { Rich. J. Dunglinson, M.D.
R. M. Bertolet, M.D.

Treasurer.....Caspar Wistar, M.D.

Arrangements have been made for the holding of the *Congress* in the city of Philadelphia, to begin on the 4th and to terminate on the 9th of September, 1876. The Commission propose the following general plan for the organization and business of the Congress:

I. The Congress shall consist of delegates, American and

foreign, the former representing the American Medical Association and the State and Territorial Medical Societies of the Union; the latter the principal medical societies of other countries.

II. The officers shall consist of a President, ten Vice-Presidents, four Secretaries, a Treasurer, and a Committee of Publication, to be elected by the Congress at its first session, on the report of a Committee of Nomination.

III. The morning sessions of the Congress shall be devoted to general business and the reading of discourses; the afternoons to the meetings of the Sections, of which there shall be nine, viz:

1. Medicine, including Pathology, Pathological Anatomy and Therapeutics.
2. Biology, including Anatomy, Histology, Physiology and Microscopy.
3. Surgery.
4. Dermatology and Syphilology.
5. Obstetrics and Diseases of Women and Children.
6. Chemistry, Toxicology and Medical Jurisprudence
7. Sanitary Science, including Hygiene and Medical Statistics.
8. Ophthalmology and Otology.
9. Mental Diseases.

IV. The language of the Congress shall be the English, but not to the exclusion of any other language in which members may be able to express themselves more fluently.

Gentlemen intending to make communications upon Scientific subjects will please notify the Commission at the earliest practicable date, in order that places may be assigned them on the programme.

In order to impart to the Congress a thoroughly international character, invitations to send delegates will be extended to all the prominent medical societies in Europe, Mexico, the British Dominions, Central and South America, the Sandwich Islands, the East and West Indies, Australia, China and Japan. Invitations will also be tendered to medical gentlemen of high scientific position; and distinguished visitors may be admitted to membership by a vote of the Congress.

Among the advantages arising from such a convocation as this, not the least important will be the opportunity afforded its members for the interchange of friendly greetings, the formation of new acquaintances, and the renewal and cementing of old friendships.

The Centennial Medical Commission tender in advance to their brethren in all parts of the world a cordial welcome, and a generous hospitality during their sojourn in the "Centennial City."

The Congress will be formally opened at noon, on Monday, the 4th day of September, 1876.

The registration book will be open daily from Thursday, August

31, *from* 12 *to* 3 *p. m., in the Hall of the College of Physicians, N. E. corner* 13*th and Locust Streets. Credentials must in every case be presented.*

Gentlemen attending the Congress can have their correspondence directed to the care of the College of Physicians of Philadelphia, N. E. cor. of Locust and Thirteenth Sts., Philadelphia, Pennsylvania.

There is every reason to believe that there will be ample hotel accommodation for all strangers visiting Philadelphia in 1876. Further information may be obtained by addressing the Corresponding Secretaries.

All communications must be addressed to the appropriate Secretaries.

WM. B. ATKINSON, 1400 Pine Street, Philadelphia,
Recording Secretary.

DANIEL G. BRINTON, 2027 Arch Street,
WM. GOODELL, 20th and Hamilton Sts.,
American Corresponding Secretaries.

RICH. J. DUNGLISON, 814 N. 16th Street,
R. M. BERTOLET, 113 S. Broad Street,
Foreign Corresponding Secretaries.

PHILADELPHIA, October, 1875.

Louisville Medical News.

Among the many new medical periodicals which are candidates for public favor, we commend to the attention of our readers the *Louisville Medical News.* It is edited by Drs. R. O. Cowling and W. H. Galt, and should be sustained in all efforts to expose and scout out of the profession, disgraceful shams and irregularities.

OBITUARY.

FRANK HAWTHORN was born in Conecuh County, Alabama, September 20th, 1835.

His literary education was completed at the University of Virginia, and he graduated in Medicine in 1859 at the Medical Department of the University of New York.

At the breaking out of the late civil war, he entered the Confederate army as a private soldier, but was soon taken from the ranks and made Surgeon P. A. C. S. In this capacity he served until the close of the war.

He performed all the duties of this service with zeal and devotion, and with an energy and correctness of judgment seldom excelled.

In 1865 he determined to leave the United States, and being penniless, worked his passage to London with the intention of sailing from that city to Brazil. Becoming sick in London he was taken to one of the great hospitals of that city. The distinguished surgeon into whose charge he fell, was not slow to discover that his patient was a man of more than ordinary character and merit, and removed him to his own house.

As soon as Dr. HAWTHORN'S health was sufficientlly restored, the English surgeon procured professional employment for him, by which he was enabled to support himself until 1866, when he returned to America. Such were Dr. HAWTHORN'S reticence and sensitiveness in all matters concerning himself, that only the favored few knew of these incidents, or of the fervent, intense gratitude he cherished for the English friends who had so generously aided him.

In 1866 he was appointed Professor of Chemistry in the New Orleans School of Medicine. In 1867 he accepted the appointment of Lecturer upon Materia Medica and Therapeutics in the Medical Department of the University of Louisiana.

He was elected to a full Professorship of the same chair with the addition of Clinical Medicine, in March, 1868. He occupied this chair until 1874, when he was made Professor of Obstetrics and Diseases of Women and Children, which position he filled until the date of his death, which occurred February 24th, 1876, from Bright's disease.

Dr. HAWTHORN'S remarkable success as a teacher was the offspring of his unusual qualifications for the position. First, he never failed to discriminate between that which was practical and necessary to be taught, and that which it was better to omit. Second, he illustrated his subjects with such simplicity and perspicuity, that there was never a failure in perfectly comprehending his teachings. Third, he possessed a graceful and earnest manner, and a correct and fluent use of language. With the possession of such gifts, he charmed and fascinated students, while he led them through the most difficult paths of science.

UNIVERSITY OF LOUISIANA—MEDICAL DEPARTMENT.

New Orleans, February 29, 1876.

At a special meeting of the Faculty the following resolutions in memory of the late Professor FRANK HAWTHORN, M. D., were presented by Professor S. M. Bemiss, M.D , and unanimously, adopted:

I. That in the death of Prof. HAWTHORN the causse of medical education has sustained the loss of a zealous and dignified supporter, and an unusually gifted and successful teacher.

II. That the profession of medicine, to the study and advancement of which he bent all the energies of a remarkably clear and logical mind, has been deprived of one of its most skillful, honorable and conscientious workers.

III. That this Faculty deeply deplore the loss of a colleague who performed his duties as a teacher so gracefully and efficiently, that while he secured the complete confidence, affection and attention of his classes, he elicited the highest admiration of his co-laborers.

IV. That our deceased colleague was personally endeared to us by the possession of those noble qualities which adorn only the best of our kind. He had a tender and generous heart; a noble love of truth; a high sense of duty and a self-sacrificing devotion to its performance; a reliance upon self; and a pride of independence admirable and unusual. We mourn his early death as a bereavement touching our warmest affections.

T. G. RICHARDSON, M. D.,
Dean.

UNIVERSITY OF LOUISIANA—MEDICAL DEPARTMENT.

New Orleans, February 29, 1876.

At a meeting of the members of the Medical class, held on the 24th inst., the following resolutions, expressive of their love and esteem for the late Prof. FRANK HAWTHORN, M. D., were unanimously adopted:

I. That in the death of Prof. HAWTHORN, who was to us not only a faithful teacher, but a generous friend and counselor, we have sustained an irreparable loss, and the profession has been deprived of one of its noblest members. Possessing as he did our profound admiration for his eminent skill, learning and eloquence, we unite in bearing testimony to his untiring endeavors, even while in shattered health, to acquit himself faithfully of the duties which devolved upon him. Patient, laborious and indulgent, ever ready to lend a helping hand to the younger members of the profession, whether in the lecture room, in the wards of the Charity Hospital, or in his ordinary intercourse with men, he always displayed a remarkable gentleness of manner which indicated his innate refinement and endeared him to all.

II. That we extend to his family and to our Faculty, of which he was a most able, beloved and honored member, our respectful sympathies.

III. That we attend his funeral in a body, and wear the usual badge of mourning in honor of his memory.

IV. That a copy of these resolutions be presented to the family of Professor HAWTHORN and published in the leading newspapers of this city.

METEOROLOGICAL REPORT FOR NEW ORLEANS.

Table I---January.

Day of Month.	Temperature.			Mean Barometer Daily.	Relative Humidity—Daily.	Rain fall—inches
	Maximum.	Minimum.	Range.			
1	78.5	69	9.5	30.094	88	.01
2	67	62.5	4.5	30.162	79	.00
3	66	54.5	11.5	30.300	66	.00
4	68	51.5	16 5	30.315	77	.00
5	74	56.5	17.5	30.324	83	.00
6	70	59	14	30.398	71	.00
7	70	63	11	30.407	77	.00
8	75	57	17	30.308	77	.00
9	78	53	18	30.175	76	.09
10	58	53.5	15	30.345	70	.00
11	52	44	4.5	30.415	68	.00
12	56	42	8	30.455	61	.00
13	54	44	14	30.560	67	.00
14	52.5	38.5	10	30.577	61	.00
15	65	42	14	30.443	76	.00
16	76	54	23	30.315	74	.00
17	78	63	22	30.222	83	.00
18	76.5	67.5	15	30.008	87	1.56
19	62	57	9	30.231	63	.00
20	60	44	5	30.392	71	.00
21	68	52	16	30.354	83	.00
22	76	62	16	30.319	83	.00
23	78	62	16	30 294	83	.00
24	73	61	12	30.305	87	.00
25	67	61.5	5.5	30.243	92	.00
26	74	58	16	30.155	87	.00
27	77	63	14	30.109	89	.00
28	72.5	66	6.5	30.101	93	2.11
29	62.5	42	20.5	30.286	71	.00
30	53	39	14	30.381	68	.00
31	67	45	22	30.236	66	.00
Mean..	67.89	54.42	13.47	30.298	76.7	Total. 3.77

Table II---February.

Day of Month.	Temperature.			Mean Barometer Daily.	Relative Humidity—Daily.	Rain fall—inches
	Maximum.	Minimum.	Range.			
1	73	55.5	17.5	30.157	65	1.90
2	48	34.5	13.5	30.425	61	.00
3	65	41	24	30.178	81	.89
4	51	40.5	10.5	30.477	62	.00
5	55	36	19	30.531	76	.00
6	67	47.5	19.5	30.434	92	.00
7	62	56.5	5.5	30.378	93	1.25
8	70	56.5	13.5	30.377	90	.00
9	74.5	34.5	20	30.303	85	.00
10	78	64	14	30.194	88	.00
11	80	68.5	11.5	30.176	84	.29
12	79.5	68	11.5	30.146	84	.00
13	78	65.5	12.5	30.022	82	.81
14	66	57.5	8.5	29.990	67	.00
15	60.5	48	12.5	30.198	55	.00
16	66.5	48	18.5	30.296	—	.00
17	60	48	12	30.346	82	.40
18	61	47	14	30.341	73	.00
19	63.5	47	16.5	30.305	61	.00
20	68.5	49.5	19	30.200	74	.00
21	78	59	19	30.061	86	.61
22	59	55.5	3.5	30.189	93	.31
23	63.5	47.5	16	30.361	71	.00
24	63	45	18	30.422	59	.00
25	69	48	21	30.300	71	.00
26	74	54	20	30.120	76	.00
27	78	64	14	30.018	74	.00
28	74	62	12	30.181	67	.00
29	71	55	16	30.225	68	.00
						Total.
Mean..	67.47	52.54	14.93	30.254	75.4	6.46

Mortality in New Orleans from January 2d, 1876, to February 27th, 1876, inclusive.

Week Ending	Scarlet Fever.	Malarial Fevers.	Consumption.	Small-Pox,	Pneumonia.	Total Mortality.
Jan. 9.....	2	2	19	1	8	110
Jan. 16.....	4	4	22	3	9	118
Jan. 23.....	7	4	21	2	12	104
Jan. 30.....	6	5	11	2	4	85
Feb. 6.....	10	4	18	3	4	109
Feb. 13.....	9	1	15	8	7	130
Feb. 20.....	6	3	15	2	3	107
Feb. 27.....	4	6	12	12	6	114
Totals.....	48	29	133	33	53	877

THE

NEW ORLEANS

MEDICAL AND SURGICAL JOURNAL.

MAY, 1876.

ORIGINAL COMMUNICATIONS.

THE OPIUM HABIT, AND "OPIUM-MANIA CURES."

BY STANFORD E. CHAILLÉ, A.M., M.D.,

Professor of Physiology and Pathological Anatomy, Medical Department, University of Louisiana.

An acquaintance, soliciting friendly and professional aid, avowed with humiliation that he was a slave to the opium-habit. He gave a familiar history of remorse for the past, shame and suffering for the present, and dread for a future of degradation. While the emotions were too active, the memory good, and judgment sound, the enfeebled will had become utterly powerless to master the remorseless appetite. Good resolutions, often repeated, had served only to increase the demoralization; for memory registered against each one a violation of conscience and of self-respect.

Striving to inspire my patient with increased horror of his dreadful habit, and at the same time with needful courage to abandon it, I yet warned him how inefficient were prescriptions, that the chief reliance must be placed upon his own firmness and endurance; that when these failed him, then judicious restraint to enforce abstinence must replace his own enfeebled will, and that I would sustain and control him to the extent of the power he would entrust in my hands. Unlimited power was freely given, abject submission promised, and the conflict began between sound reason on the one hand and a depraved appetite

on the other, with a poisoned body the battle field, and an enfeebled will vacillating from one to the other side.

In painfully tedious succession restless days followed sleepless nights, and both were rendered so exhausting by clammy sweats, by gnawing gastric pains, by sickening nausea, and by depressing broodings of the imagination, that the suffering body was tortured to the limit of endurance, and self-destruction was threatened as preferable to the agony imposed by abstinence. This, after long-continued abuse of opiates, is attended always, in my experience, by profuse sweating and diarrhœa; so that nature requires no aid from art to cleanse the circulation of its perilous poison. To replenish the blood with healthy constituents, milk punch and all nourishment the stomach would bear were, from the first, freely given. Such simple remedies as the varying symptoms seemed to indicate were administered; and of those intended to act on the nervous system, none mitigated the sufferings to so great an extent as digitalis. But the chief treatment was a tyrannical persistence in total abstinence from all opiates, to which were added sympathetic assurances that this was the shortest and only road to success, and that in from five to eight days the intense suffering and sleeplessness would diminish, while appetite, courage, and self-control would correspondingly increase.

A week weary to the physician, far more weary to the patient (from the third night to about the sixth day having been as usual the period of greatest suffering), ushered in a fair prospect of success, which subsequent weeks fully realized. After two months my patient wrote: "I have improved in weight fifteen pounds, my appetite and digestion are first rate, and I sleep sweeter than at any time during the past three years, that is, since my habit began. I have not taken nor had administered to me, in any form, any opiate or alcoholic stimulant of any kind since I saw you; and what is far more encouraging, I have no desire for the slow poison, and believe now, as I do in my God, that nothing on this earth shall ever wield such an influence over my moral nature as will cause me to succumb to its terrible and ravaging influence. For all this happiness, doctor, I thank you, and owe it solely to your firmness and medical treatment, which I can never forget as long as this new blood courses through my veins. The dawn of a new life is already opening before me, and every morning, as I awake, I feel the terrible

pang of having wasted three years of my best life." A month later he wrote: "As far as the drug or any other stimulant is concerned, I never have the least desire for it; on the contrary, I loathe the very mention of opium."

Though experience sadly teaches that the opium habit acquires greater power, and is more liable, when interrupted, to relapse, than even alcoholism, and that the only trustworthy remedy is *enforced* abstinence long continued, still, I can not refrain from deriving great hope from, and entertaining great confidence in, the above assurances of my patient. The good result is of course attributable chiefly to his own power of endurance, and high moral sense, which fortunately his opium habit had left sufficiently vigorous to render him acutely sensitive to the humiliation of his bodily and mental condition. That one possessed of so much intelligence, so readily and powerfully influenced to good, should have been for many months the credulous dupe of an advertising quack, is proof that it is a duty to society to expose the pretences of these remorseless charlatans, who poison the afflicted with one hand, while robbing them with the other.

When I undertook my patient's case, he had been for a long time and was then taking "Dr. Beck's Opiumania Cure." The symptoms, with a smell at the mixture, were sufficient to prove that the ingenious Dr. Beck appeased the diseased appetite by feeding it; that he cured the opium-mania by persisting in the abuse of opium, and that, by thus confirming the malady, he perpetuated the demands of his victims for incessant supplies of the divine gift, which he vouchsafes to confer on his suffering fellow-creatures at the self-sacrificing rate of $10 per four ounce vial!!

This marvellous vial, with its secret contents discovered by the fortunate genius and medical wisdom of Dr. Beck was at once captured; in order, chiefly, that the total abstinence from opium insisted on might be successfully enforced, and subordinately that the proofs, to me already satisfactory, of the composition of this "opiumania cure" might be conclusively tested by chemical analysis. This has been ably and carefully done by the accomplished chemist of the N. O. Charity Hospital, Mr. J. Johnson, and his instructive report is appended to this article.

Prior to the letters already quoted from my patient, he wrote: "I send you all the papers and documents relating to Dr. Beck

that I can find. He has sold me this medicine nearly a year, and the effects were about the same as opium, and I fell off in weight instead of increasing. Since you cured me I have increased ten pounds. [After abstinence this increase of weight is usual.—S. E. C.] Notwithstanding the testimonials speak well of Dr. Beck, I look upon him as the greatest humbug of the age; for, when you once get under the influence of his mixture, it becomes as difficult to break off and take other opiates as to quit the use of opium itself. I can look back and see it all now, but could not then, for I was chained, and knew not how to get unbound."

These papers and document now in my possession, furnish the following entertaining information by Dr. Beck as to himself and his testimonials. Nobly reckless of expense when inspired with the hope of doing so much good—and of selling so many $10 4-oz. vials!—he supplies any supplicant with a neat twenty-page circular, adorned with the "counterfeit presentment" of his philanthropical lineaments. Like great prophets, his merits are too transcendent to justify any untimely modesty; and Dr. John Crofton Beck gushingly informs the admiring world of his age, place of birth, race, previous condition, etc. Proud Indiana claims him as her son, the fortunate Medical College of Ohio gladly adopted him in 1848, "after one course of lectures," as its professional child. Thus launched, greatness swiftly followed. In 1858, behold! him Professor of Medical Jurisprudence in the Cincinnati College of Medicine and Surgery, and in 1862 transferred to the Professorship of Anatomy and Physiology. Patriotism then triumphing over love of honorable station, he became Surgeon of the 53d Kentucky Volunteers. He was Editor for several years, "with recognized ability," of the *Cincinnati Medical and Surgical News*, President of the School Board of Newport, Ky., and the family physician of Gen. Grant's father. Finally, since 1870 he has self-sacrificingly devoted himself, at No. 112 John street, Cincinnati, "especially to the cure of opiumania." It is encouraging to be assured, especially by Dr. Beck, that Dr. Beck's skill, success, honesty of purpose, application to duty, studious habits, zealous energy, and unlimited resources, "inspire the most despondent with a portion at least of his own unbounded courage and enthusiasm;" that "no pecuniary consideration could induce him to encourage a palpable delusion," and that *Brother* Beck (for he is a brother Methodist as well as a brother Mason)

is so gorged with piety that he could not "trifle in matters of important moment to the present and hereafter of a fellow-being"!

As open and disgusting as is this brazen-faced quackery, it is not so mortifying as are his assurances, fortified by quotations and specifications, that members of an honorable profession, who are now respected in its ranks, have furnished testimonials most flattering to him and to his "cure," and most deceptive to the public. It is earnestly hoped that this shameless imposter is as bankrupt in truth as in modesty, and that these published testimonials may prove to be forgeries, whereby he calumniates the following members of the medical profession, viz.:

Dr. Lee Holt, of Colaparchee, Ga., ex-Division Surgeon of Stonewall Jackson's Corps, C.S.A.

Dr. J. E. McMillan, of LaGrange, Ga.

Dr. Luke W. Smith, of Canton, Miss.

Dr. J. C. Bierbower, of Austin, Texas.

Dr. J. C. Kerr, of Cincinnati, Ohio.

Drs. Whitesel, Cooper, Cochran, Rawlins, Canady, Norris, Lewis, Crouse, and Hackleman, of the Medical Association of Ogden, Indiana; and Drs. Dawson, Doherty, Parker, and Dunlap (supposed to be) of Louisa, Lawrence County, Ky.

It is doubtful if any disease is so utterly destructive of the happiness and welfare, not only of the afflicted individual, but also of family friends and society, as is the opium-mania. Recorded experience is unanimous in enforcing, that in no condition is the demoralization so complete and hopeless. The poisoned imagination revels in the construction of ingenious falsehoods, and becomes reckless of the endless mischief which exaggeration, untruthfulness, and scandal inflict. While strict veracity even in little things imposes an impossible task on a brain long fed with opiatized blood, oaths the most solemn are violated while the lips are yet moist with the sacred words, and conscience is too exhausted to retaliate with even one pang of remorse. Physical suffering and moral degradation alternate endlessly with mental stupor, and produce a condition worse than imbecility or insanity. Against these, society protects itself (though still inadequately) by its familiarity with these conditions, and by its laws; but the opium-mania is less generally known, the victim often undetected, his acts misconstrued, the misery he inflicts unappreciated, and our ineffi-

cient laws ignorantly fail to afford any protection whatever either to the afflicted person, or to others necessarily involved in his affliction. Thousands of households in this, tens of thousands in all civilized lands, have sad cause to bitterly mourn that laws do not permit, and fail to provide for the application of the *only reliable remedy*—total abstinence from the poison enforced by incarceration in appropriate asylums or hospitals. With full legal liberty to destroy and degrade himself, to inflict misery and shame on family and friends, and to injure society in common with these, the unhappy victim is constantly lured by our newspapers and journals to squander his means upon the "opium-cures" of advertising quacks In this nefarious work *Harper's Weekly—the* "journal of civilization"!—is especially prominent, assigning places in every issue of its *civilizing* columns to these advertisements, which, though perhaps more decent, are not less injurious than the *N. Y. Herald's* advertisements of abortionists. A like trade is pursued in England. The *British Medical Journal*, September 4th, 1875, states that a "sure cure for the opium habit" was found to contain two grains per dose of sulphate of morphia to be taken three times a day!

Indignant at, anxious to correct such evils as are these advertisements, and as is the lack of legal protection for the hopeless and maniacal abusers of opium, alcohol, etc, the assurance will be given, probably by lawyers and so-called statesmen, that any effectual laws would endanger the "freedom of the press" and the "liberty of the subject"—an assurance which forcibly recalls the saddest cry of justice and of true freedom, "Oh! Liberty, how many crimes are done in thy name!'

For the benefit of those desiring further information as to this subject attention is called, to the well-known and classical "Confessions of an Opium-Eater," by Thomas De Quincey (Ticknor & Co., Boston, 1850); to the instructive book, "The Opium Habit" (New York, Harper & Bros., 1868); and to the more useful and practical "Opium and the Opium Appetite," by Alonzo Calkins, M.D. (Lippincott & Co., Philadelphia, 1871). "Opium-Eating," by an Habituate—from Claxton, Remsen & Co., Philadelphia, 1876—is one of those many books which cause an intelligent reader to stand aghast at the inanity of the author and the folly of the publisher. Should my reader desire to experience true grief for an ill-spent dollar, let him invest it in this crême de la crême of trash.

CHEMICAL ANALYSIS OF DR. BECK'S "OPIUMANIA CURE."

I.

Capacity of vial is four fluid ounces.

II.

Contents measured two fluid ounces.

III.

A glance at the deep-brown, dirty-looking mixture shows it to be one by no means homogeneous in character, and by taking one-half ounce and subjecting it to filtration through paper, it was easily separated into a clear brown liquid and a dark brown residue. The liquid obtained was devoted to a preliminary examination, with the object in view of gathering a general idea of the nature of the compound and the difficulties that would have to be overcome in making an analysis. No well-defined opium reactions could be gotten, they, of course, being masked by the deep brown coloring matter present. About the only definite information derived was that the liquid contained considerable alcohol, a small quantity of free acetic acid, and a good deal of substance in solution.

A quarter ounce of the original mixture was next evaporated on a water-bath to half its bulk, to free it from alcohol. The aqueous remainder, diluted with water, subjected to dialysis, with hope of obtaining a tolerable colorless solution of whatever crystalloids might be contained in it, gave a result entirely unsatisfactory, on account of the coloring matter passing through the membrane with great rapidity.

Another quarter ounce was evaporated, as in the previous experiment, and rendered slightly alkaline with liquor ammonia, then shaken with warm amylic alcohol. Again the coloring matter became an obstacle, as it proved readily soluble. The amylic residue, however, gave distinct morphia reactions.

Experimenting upon the liquids contained in the dyalizer, I found precipitation of the coloring matter by means of acetate of lead gave the best result. Resorting to this method the liquids of the dialyzer were mixed, and the resulting mixture treated with solution of acetate of lead as long as it produced any precipitate. The mixture having been warmed, allowed to cool, and filtered—the precipitate being reserved (A)—gave a

clear and nearly colorless solution, through which a current of sulphuretted hydrogen was passed until all lead left in the filtrate had been converted into sulphide After filtration a colorless liquid was obtained that behaved with reagents as follows:

Solution of perchloride of iron gave a deep blue color;

Iodic acid, a brown color;

Solution of iodic acid mixed with starch, a blue color;

Tannic acid, a white precipitate;

Liquor potassa, a white precipitate almost entirely soluble in excess. Filtering off the insoluble portion (B), the alkaline solution treated with a current of carbonic oxide gave a white precipitate, which, after collection on a filter, proved to consist of needle shaped crystals, possessing a bitter taste, not very soluble in water, but easily so in dilute acids. Portions of this substance, placed upon a porcelain slab, gave with—

Nitric acid, a yellow-red color;

Sulphuric acid containing a minute quantity of nitric acid, a violet-red color;

Molybdic acid dissolved in sulphuric acid, struck a violet color which disappeared on adding a few drops of water, leaving a brown, turbid fluid.

That we have morphia present cannot be doubted.

The insoluble portion obtained in (B) proved—

Insoluble in cold and readily soluble in hot alcohol;

Very soluble in chloroform;

Soluble in dilute sulphuric acid, the solution giving, with liquor potassa and carbonate of potassa, white precipitates;

Chlorine water added to the dilute sulphuric acid solution, produced a yellowish-green coloration, which on the addition of ammonia changed to red;

Nitric acid gave a colorless solution that turned yellow when warmed.

That the substance we are dealing with is narcotine will hardly be denied.

The acetate of lead precipitate (A) was next suspended in a little water and treated with a stream of sulphuretted hydrogen. After complete decomposition and filtration, a clear, slightly colored liquid remained, that behaved as follows:

Solution of perchloride of iron gave a deep red color, which did not disappear on addition of sulphuric acid and metallic zinc

Nitrate of silver, chloride of barium and acetate of lead, all gave white precipitates.

Meconic acid thus indicated, we have now the three principal constituents of opium; we have furthermore learned the best way of proceeding in making a quantitative estimate. So, following out the path laid down in the preceding experiments, a half ounce of *the cure* was evaporated on a water-bath until quite dry, dissolved in one-half ounce of hot water, treated with solution of acetate of lead, filtered, a current of sulphuretted hydrogen passed through the filtrate, all as previously described, with the exception of both precipitates being carefully washed. The resulting solution was concentrated till it measured two drachms, treated with liquor potassa in quantity sufficient to dissolve all of the precipitate at first produced, that was soluble in excess, filtered—the filter being washed with cold water—treated with a current of carbonic oxide for about an hour, exposed a couple of hours to a low temperature, and then thrown upon a *counterpoised* filter.

The crystalline residue, washed with a little ice-water, and dried in vacuo over sulphuric acid for twenty-four hours, weighed 3.23 centigrammes, or about one-half grain. Now, taking the percentage of morphia in opium to be ten, which I believe to be a fair estimate in this case, this will give us five grains of opium to half an ounce, or one grain and a quarter to one drachm.

J. JOHNSON, *Chemist and Apothecary,*
Charity Hospital, New Orleans.

*THESIS: PELVIC ABSCESS IN THE FEMALE.

BY JEAN L. DESLATTES, M.D.

OBSERVATIONS.—CASE NO. I.

September 10th, 1875—Jennie Patterson, colored, 22 years old. Patient said that about four weeks ago—one day after menstruation—she had gone to a ball, where she had danced during the greater part of the night. On her return home, being very warm, she had taken a cold bath before going to bed. A

* These theses were submitted to the Faculty of the Medical Department of the University of Louisiana by the authors, when candidates for graduation.

few hours after, she had been seized with a fever which had kept her in bed for several days. The fever had been accompanied by pain in the back, aching in the limbs, restlessness, loss of appetite, weight and pain in the pelvis, deep-seated pain and throbbing in the right iliac region, etc. Since that time she had been unwell, and had had two or three attacks of fever with pain in the pelvis. She had then (Sept. 10th) the night sweats, slight fevers, and chilly sensations characterizing hectic. She had no appetite, and was becoming weaker daily.

On the day of her admission into the hospital, she had pain and tenderness in the right iliac and hypogastric regions; her skin was hot, her pulse weak and frequent, her countenance anxious and expressive of suffering.

On the next day an examination per vaginam was made, and it showed the following: The womb was immovable, pushed to the left side and somewhat low in the pelvis. The uterine cavity was of normal length. The mouth and lips of the womb were healthy. There was a slight uterine leucorrhœa. The vaginal walls were rather hot, and sensitive at places; a thickening and induration of the connective tissue between the uterus and bladder, and between the rectum and vagina; a large tumor situated behind the uterus and to its right. This tumor seemed to occupy the whole space between the folds of the broad ligaments on that side and the greater part of the cul-de-sac of Douglas. Pressure on its surface and on the indurations caused pain.

An examination per rectum showed its form and size still better.

With two fingers of one hand in the vagina and two of the other in the rectum, we could grasp it and better determine its size.

By abdominal palpation we could feel its upper and anterior surfaces. It seemed situated deep in the right iliac fossa. With one finger in the vagina or rectum, an obscure impulse could be felt by percussing over its seat externally. No fluctuation was detected anywhere.

An exploratory puncture was made and pus was found.

This patient having died before the evacuation of the abscess, I had the opportunity of making a post-mortem examination, and I found the following conditions:

(1) A slight local peritonitis above the brim of the pelvis.

(2) A great deposit of plastic lymph within the pelvis. This lymph had become organized, and matted together nearly all the tissues and organs of the pelvis.

(3) An abscess situated between the rectum and uterus, extending to the right side of the pelvis and involving the broad ligament of the uterus on that side.

CASE NO. II.

In June, a woman, about 30 years old, came to Ward 34. She had been sick for two or three months, and had consulted physicians without relief. She was exceedingly nervous and emaciated. She had amenorrhœa and dyspepsia, with the evening fevers, rigors and sweats of hectic. She had no appetite, and could not sleep at night. She had also some vesical and rectal trouble, and a dull and deep-seated pain in the pelvis. This pain was increased on pressure.

By palpation a tumor was detected beneath the abdominal walls. Patient was catheterized, and a vaginal examination at once disclosed a fluctuating tumor almost as large as a fœtal head. A decided impulse was felt by the hand in the vagina when percussion was made over the tumor externally. The tumor was situated chiefly between the bladder and uterus, and extended somewhat to the right. The vagina was somewhat hot. The tumor was tender on pressure. The uterus was pushed towards the sacrum, and could hardly be reached with the finger. The introduction of the speculum caused much pain. I advised her to remain in the hospital, but she would not. As I had no instrument with me, I begged her to call on the next day. This she did not do.

About a week after I heard she had applied to Prof. Logan, who had drawn from the tumor a large quantity of pus, by means of the aspirator.

CASE NO. III.

In March, a woman applied to Prof. Brickell, in Ward 36, saying that she had an abscess in "her womb," which had burst several times. She had been sick for two years. She was much emaciated, and could hardly walk. She gave a history of pelvic cellulitis terminating in suppuration. A vaginal examination showed at once the tumor, which was situated on the right side of the pelvis. It was punctured with a long trocar,

and its contents, which consisted of thick and fœtid pus, were evacuated.

Causes.—Inflammation within or about the pelvis may terminate in suppuration, as in any other part of the body. This is especially the case when it is not attended to, or when it occurs during menstruation, or pregnancy, after parturition and abortion, or when it is caused by traumatic injuries, such as blows, falls, etc., or when it attacks debilitated systems, or persons previously afflicted with cystic, uterine, or ovarian disease.

Suppuration within the pelvis occurs chiefly as a consequence of pelvic cellulitis and pelvic peritonitis. Indeed, fully three-fourths of the cases of pelvic abscesses have as their starting point some inflammation of the connective and serous tissues situated in the vicinity of the womb. It occurs, also, though rarely, after inflammations of the walls of an ovarian cyst, or of the cyst of an extra-uterine pregnancy. It is said to have been produced by degeneration of the blood poured out in hæmatocele, and by inflammation attacking the structure of a fibroid tumor.

Symptoms.—From whatever cause it may have been produced, a pelvic abscess manifests itself by well-marked symptoms, such as chills or rigors, fevers, sweats, sleeplessness, thirst, loss of appetite, mental and bodily depression, severe throbbing and pain about the pelvis, irritability of the bladder and rectum, neuralgic pains extending along the thighs, and pain about the sacrum and back. The seat of the abscess may to some extent be determined by some of the symptoms which the case presents. When it is situated so as to press upon the psoas and iliac muscles, the decubitus is characteristic. The patient lays on her back with her thighs flexed, so as to relax the parts in the neighborhood of said muscles. When the rectal symptoms predominate, we may judge that the abscess is situated in the cul-de-sac of Douglas. Dysuria, retention of urine, or great irritability of the bladder, will at once make us look to the utero-vesical septum as the seat of the trouble.

So much for the general symptoms: let us see what we can make of the local symptoms. Are they of importance? Indeed they are, for without them we can not make a diagnosis. They are more to be relied upon than the former, and I must state that in case No. I, I had almost made the diagnosis before I

inquired into the patient's history. There are three avenues by which to arrive at the abscess; these are the rectum, the vagina, and the abdomen. By either of these alternately, or by all combined, a peculiar elastic tumor, or a general fulness of the tissues is felt. The position of the tumor, of course—whether low or high in the pelvis, whether anteriorly or posteriorly—will determine as to whether it can be better felt per vaginam than per rectum, or by abdominal palpation, et vice versa.

With some tumors a distinct fluctuation can be felt. With others an impulse may be given to the hand in the vagina, while percussion is made with the other hand over the hypogastric region. Sometimes we get neither impulse nor fluctuation; but around the tumor we can feel inflammatory exudations, and the history of the case comes to our help. If we are still in doubt, we can explore the tumor with the exploring-needle, or with the aspirator, with perfect safety.

Course, Terminations, Modes of Death, etc.—The pus may be infiltrated into the tissues, or may form purulent seats or abscesses. If the inflammation has been rapid in its progress, diffused and ill-defined abscesses are formed, and the pus which they contain is serous; while in chronic cases, the abscesses are large and well-defined, and the pus is thick and fœtid. They may also become encysted, and have a pyogenic membrane.

The pus usually spreads itself around the uterus. It may occupy a small space within the pelvis, or its whole cavity, and even extend as far up as the umbilicus. The most usual sites of the abscesses are between the folds of the broad ligaments and in the recto-uterine and vesico-uterine spaces.

While some abscesses have no tendency to evacuate their contents, the rule is that after a certain length of time, some portion of the wall becomes thin and finally bursts. In this way, they may open into the vagina, the rectum, the intestines, the bladder, the peritoneum, or through the abdominal walls, the crural or inguinal canal, the obturator foramen, the sciatic notch, or through the perineum between the vagina and anus.

After the evacuation of the abscess, the walls of the latter may collapse and no new secretion of pus take place, the patient recovering without any further trouble; or the opening may close up and a new collection of pus soon fill the sac. In this way a

series of abscesses may be formed and their contents evacuated, until death comes to the sufferer's relief.

With a pelvic abscess, when death takes place, it is usually from septicæmia or from exhaustion. Death from septicæmia may occur at any time during the disease; while the patient may go on for weeks, months and years, before she dies from exhaustion.

The opening of the abscess into the peritoneal cavity will, as a rule, cause fatal peritonitis.

Treatment.—The constitutional treatment will, of course, consist of good food, good air, wines and tonics. With regard to drugs, no remedies are better than bark, iron, quinine, and cod-liver oil. When the suffering is severe, or when there is much restlessness at night, we must have recourse to sedatives, such as opium, chloral, etc.

As to surgical interference, there is a great difference of opinion amongst the authorities. Some believe that the abscess should be allowed to burst spontaneously; others recommend exploratory punctures followed by incision, if pus be found.

It seems to me that if we allow the abscess to burst spontaneously, it may do so anywhere in the pelvis. If it opens into the peritoneal cavity, general peritonitis will surely result; if into the rectum or intestines, fœcal abscesses may be the consequence. If into the bladder, cystitis may occur, or the opening may never close, and finally allow some of the urine to escape from the bladder and produce irreparable damage to those parts, and even cause death. If through the skin, we have to dread the different fistulæ and purulent seats which will necessarily be formed before the pus gets to the skin, to say nothing of the length of time it will take to get there, during which time the patient's life is more or less in jeopardy. Therefore, I think that it is preferable to open the abscess whenever we can get to the pus; the best place for doing this being in the vagina, because of its affording a more easy and perfectly safe access to the abscess.

Instruments have been invented for opening these abscesses, but they are not more convenient than the aspirator or a long trocar. With the knife, there is danger of copious hæmorrhage, on account of the great vascularity of the parts.

After the evacuation of the pus, the sac may refill, then it will

be necessary to keep the puncture open, and inject the purulent cavity with disinfectant solutions until suppuration ceases and the walls of the abscess adhere together. For the latter purpose weak solutions of carbolic acid, iodine, or permanganate of potash, may be used.

After the abscess has closed, caution should be given to the patient against doing anything which may cause a relapse.

THESIS ON PEPSIN.

BY OTTO R. GRUBE, M.D.

Student of Medicine.

Various processes, more or less complicated, have been employed in the preparation of pepsin. Partly in consequence of these being tedious and difficult of performance, and partly from the sale of perfectly useless preparations, the remedy has to some extent lost its reputation. Lately, however, Mr. E. Scheffer, of Louisville, in an elaborate paper in the *American Journal of Pharmacy*, gives us the results of numerous experiments with reference to the preparation and properties of pure and reliable pepsin. His process depends upon the insolubility of pepsin in strong saline solutions, especially that of common salt, and commends itself by its simplicity, while it affords a product free from all impurities, and possessing in an eminent degree the solvent powers of the natural gastric juice. The mucous membrane of the well-cleaned hog stomach is dissected off, chopped finely, and macerated for several days, with frequent stirring, in water acidulated with muriatic acid. The resulting liquid is filtered, and an equal volume of a saturated solution of common salt is added, when the pepsin which rises to the surface is removed with a spoon, and put upon a cotton cloth to drain. Finally, it is submitted to strong pressure, and allowed to dry by spontaneous evaporation. This pepsin is a tough substance, resembling in thin sheets, parchment paper.

For convenience in dispensing, this pepsin is triturated with nine times its weight of sugar of milk, and introduced into general use as "Scheffer's Saccharated Pepsin."

Recently precipitated pepsin is very soluble in water; the aqueous solution has a neutral reaction, is coagulated by heat,

and precipitated by alcohol, tannin, bichloride of mercury, and salts of lead and copper. After having been dried, it dissolves freely in water acidulated with hydrochloric acid.

A solution of fresh pepsin in distilled water is inert; the addition of a little hydrochloric acid, however, develops its digestive power, which seems to be greatest when 6 drops of hydrochloric acid are allowed for each fluidounce of water. A solution of one grain of purified pepsin, and 24 drops of muriatic acid in 4 ounces of water, has been found to dissolve 500 grains of coagulated albumen at a temperature of 105° F. in 6 hours. Lower temperatures interfere with the process to a considerable extent, so that at 75° only 400 grains were dissolved after 18 hours. An increase of the quantity of pepsin does not increase its solvent property, showing thereby its action to be one of catalysis.

Pepsin seems, however, to communicate its digestive power to the peptone; so that, practically, its solvent action is almost unlimited. It was found that a solution of 500 grains of coagulated albumen in 4 oz. water, acid and 1 grain of pepsin, added to an equal volume of acidulated water, formed quite an energetic digestive fluid. By adding a saturated salt solution to peptone solution, a copious white precipitate is obtained, soluble in water, forming a solution not coagulable by heat, but precipitated by alcohol slowly, by bichloride of mercury, and by chloride of sodium. An aqueous solution of this substance does not act on coagulated albumen, but if a few drops of muriatic acid be added, it manifests digestive powers similar to pepsin itself. In one experiment, half a grain of pepsin dissolved 240 grains of coagulated albumen. The solution yielded with chloride of sodium a precipitate which weighed, dry, 12 grains. This peptone precipitate was found capable of dissolving 1,200 grains of coagulated albumen. This solution yielded 120 grains of peptone precipitate, *one* grain of which was capable of dissolving, further, 25 grains of albumen.

Pepsin prepared in the given manner contains a small quantity of chloride of sodium. When freed from this it loses, to a considerable extent, its solvent power. The addition, however, of a larger quantity of salt, does not seem to promote its activity; on the contrary, if the amount be as much as five grains to the ounce, its digestive action is decidedly retarded. Alcohol in all proportions diminishes the solvent power of pepsin. The carbonates of the alkalies destroy pepsin, and cause it to become

putrid. When thus combined, it acts on coagulated albumen only after putrefaction sets in, with development of a genuine fœcal odor.

The above facts point clearly to the great importance of acid in gastric digestion.

Schiff's experiments on dogs with gastric fistulæ also go to show that the digestive power does not depend so much on the mere quantity of pepsin, but to a great extent on the relative quantity of water and acid.

Practitioners of medicine have repeatedly pointed to the fact of their having seen equally as good results to follow the use of muriatic acid alone in dyspepsia as in combination with pepsin, while those who have administered pepsin by itself, or in combination with alkalies, have, as a rule, been disappointed. That pepsin and hydrochloric acid are of great service in a large number of cases of disordered digestion, cannot be doubted, but to limit its use to such diseases would not be doing justice to an agent which promises to be one of the most useful auxiliaries in the treatment of ailments depending upon defective nutrition. Healthy nutrition requires a sufficient quantity of healthy blood, and healthy tissues to nourish. One of the most serious effects of an interference with these requirements of health, is a failure on the part of the system to provide healthy secretions, as gastric juice, for example, thereby decidedly interfering with the proper elaboration of the food, and in this way progressively aggravating its deficiency. No one can witness the destructive effects of impaired nutrition, whether induced by disease or want of proper diet, without being impressed by one feature of the blood, which is that this fluid is a definite chemical compound, from which not one particle of either of its, sometimes, apparently unimportant constituents can be withdrawn, without a proportionate disengagement of all the others. It is not likely that the whole of this fluid can, at any time, be altered without terminating life, and it is probable that a large amount of it may to a certain extent be unable to execute its function, while the remainder, which preserved its integrity, performed the work for the time being.

Taking an example from chemistry, the following may perhaps answer. If to a solution of ten equivalents of calcium sulphate one equivalent of barium oxide be added, the baryta, with its strong affinity for sulphuric acid, will not *only* abstract one equivalent of this, but the calcium oxide, becoming free and

insoluble, will also leave the solution, baryum sulphate and lime being thrown down as a precipitate. The solution itself, although weakened, will otherwise not have changed its integrity. Thus, if some influence attacks the albuminoid portion of the blood, iron, potash, lime, soda, etc., they all will be compelled to leave it in strict proportion to the quantity of albuminoid implicated.

Impairment of the quality of the blood is generally referred to a diminution of its proper amount of iron, since it has been demonstrated that the functions of the red corpuscles depend chiefly on the presence of this substance. For this physiological reason, great reliance is placed in the use of iron and its salts for the cure of such conditions. When iron fails to accomplish anything in such cases—and it often does disappoint the physician—the cause of this is less to be sought in the particular preparation of iron, than in the inability on the part of the system to assimilate it, on account of the want of the plasma with which it may combine so as to make a part of the blood. It cannot be of any use to the system unless it meets with all of those numerous chemical elements which make up blood and tissues.

In health, when digestion is active, the system finds in the aliments which habit and choice select, an abundant supply of all those substances which it requires for its sustenance. If digestion is impaired, however, then the system is cut off, as it were, from its resources, and it would be proper to offer such nourishment as would put as little strain as possible upon the digestive apparatus. Pepsin presents itself here as a most valuable aid; and certainly it has proved useful in the medical and surgical Wards of the Charity Hospital, where it was administered in acid solutions and together with food, in cases of malnutrition where iron had failed to do any good.

An excellent preparation for the use by rectum is made by macerating from 4–6 ounces of lean meat, cut into shreds, in a solution of 20–30 grains of saccharated pepsin and 30 drops of strong muriatic acid in 6 ounces of water, for 5 or 6 hours, at a temperature of not over 105° F. The undissolved fibres of the meat may be separated by straining through muslin, and the acid neutralized with a sufficient quantity of carbonate of soda For the use by mouth, it may be rendered more palatable if given in beef-tea. Such a peptone solution has the advantage over

beef-tea that it requires no further digestion, and contains the albuminoids which in the usual preparations of beef-tea are coagulated and retained in the meat. Digested food of this kind has always been a desideratum for the practitioner, and promises to become a valuable therapeutical agent.

ACUTE TRAUMATIC PERITONITIS: ITS TREATMENT.

BY J. A. LARCADE, M.D. (Thesis.)

The peritoneum, like other serous membranes, is liable to inflammation from various causes. But before speaking of its causes and treatment, I will treat of its history in brief.

The inflammation of peritonitis is divided into acute and chronic. If most of the membrane be inflamed, it is then general; but if circumscribed, it is is known as partial peritonitis. In treating of the subject, I will confine my remarks principally to general acute peritonitis. The anatomical characters of peritonitis are about the same as in other serous inflammations—redness from hyperæmia in the sub-serous tissue; that is, if death takes place early in the disease. We always have the inflammatory product present. Lymph, which varies in different cases, sometimes forms very thick coatings, extending over the viscera and parietal portion of the membrane, and very frequently resulting in agglutination of the bowels together, and also the bowels to the peritoneum. If this stage does not terminate in resolution, but should go on to a chronic state, most frequently we have effusion of serum in the abdominal cavity, which may be muddy in appearance, or red from the admixture of blood. Opacity and thickening of the membrane are also common results. As I have already stated, the causes of peritonitis are various. As an idiopathic disease it rarely occurs, but most always depends on some exciting cause. It may be a complication of some other disease of the abdominal organs.

The most frequent causes are the injuries done in the progress of labor, perforation of the alimentary canal from ulceration of the stomach; of the ilium, incident to typhoid fever; discharge of pus into the abdominal cavity from abscess of liver, etc.; also traumatic causes, such as wounds of the abdominal walls, contusions, etc.

In speaking of the treatment of peritonitis, I will refer to that from traumatic causes with solution of continuity, as I do not think that the same treatment would be applicable to the disease from other causes, where the patient is already in a low and depressed condition. A few words concerning the diagnosis and prognosis. The disease can scarcely be mistaken for other diseases, and especially when it occurs traumatically. In the incipiency of the inflammation we have a little tenderness over the abdomen, slight elevation of temperature, fever, and pulse a little frequent. But as the inflammation progresses, we have the above symptoms somewhat exaggerated, great pain and tenderness of the abdomen, even on the slightest movement. The patient, to relieve excessive pain, frequently lies on his back, and draws up his legs to relax abdominal muscles. Nausea and vomiting are sometimes prominent symptoms; so is elevation of temperature; indeed, high fever, with a very frequent, small and wiry pulse, tympanitis, respiration more or less hurried, and principally of the costal type, so as as to relieve the abdominal muscles. If the patient continues to grow worse, we have an anxious countenance, and frequently a vacant stare, as if he was not interested in anything around him and scarcely took notice of any one that came about him.

The prognosis is generally very unfavorable, and especially in those cases where the patient is already in a low and depressed condition, due to complications, such as perforation of the alimentary canal, blood poisoning from the absorption of pus (septicæmia), or when it is discharged into that cavity from abscesses, etc. However, I should think it was more favorable when caused traumatically, provided there was no wounding of the viscera. In those cases the patient's general condition is more apt to be good, as he may have been robust and in excellent health up to the time that he received the wound. I will begin the subject of treatment by reporting the following cases, treated in the Wards of the Charity Hospital by Prof. T. G. Richardson.

Case I.

Francis Renton, age 22, was admitted to the hospital November 29th, 1874, with punctured wound of abdomen involving the stomach with protrusion of omentum. Was stabbed about two inches above the umbilicus, and near the median line, the direc-

tion of wound being up and obliquely towards the cardiac end of stomach. When patient was first seen, the omentum was reduced and wound brought together with sutures and adhesive plaster, and a grain of morphia sulph. given him by the mouth. A short while after the patient took the morphia he vomited a large quantity of blood and undigested food, symptoms indicating wound of stomach or duodenum. An hour later, gave him half grain morphia hypodermically, which quieted patient until evening, when he complained of pain about the stomach. The half grain morphia was then repeated as above. Next morning, November 30th, patient again vomited blood. All the symptoms of peritonitis were present, viz., acute pain and tenderness of abdomen, tympanitis, feeble and frequent pulse, great restlessness, etc. Patient was now seen by Prof. Richardson, who ordered tinct. opii ℥ xxx and tinct. verat. virid. (Norwood's) ℥ v. every four hours.

Dec. 1st. Symptoms of peritonitis had not abated, but became more exaggerated; the tympanitis was more general, pain very severe, fever more marked, pulse intermittent, with an anxious expression of countenance, and skin hot and dry. The following night, extreme restlessness and delirium.

Dec. 2d. Patient seemed to be under the influence of the opium and veratrum, which were now given at longer intervals (same doses 3 times daily); pulse was about 96 and fuller. Patient took small quantities of beef-tea and other liquids.

Dec. 3d. General condition greatly improved; refreshing sleep; pulse full and regular; pain and tenderness of abdomen very much subsided; mind lucid and cheerful. Still continue the opium and veratrum 3 times daily. This treatment was continued until December 4th (that is, every 3 hours), and then ordered to be given 3 times daily, same dose, only at longer intervals. The pulse was then reduced to 66. In the early part of the inflammation—that is, whilst the peritonitis was in its acme—the pulse varied from 120 to 128. No notes of the pulse and temperature had been taken until December 3d. With the diligent use of the veratrum and opium, patient suffered pain only a short while, and the pulse in a few days was remarkably reduced.

The medicine was given 3 times daily to December 13th. The next day, patient was permitted to get up and walk about,

and in a few days was discharged. Under the above treatment the patient was well and able to work in three weeks.

Case II.

R. W. (colored), age 26, admitted February 24th, at 11.30. Received a wound about five inches in length situated in the left hypochondriac region, near the diaphragm. The direction of wound was obliquely downwards and backwards. The stomach and a considerable portion of intestine protruded with the ileum entirely severed (the ends being about 12 inches apart). Portions of the omentum and mesentery were also cut. Hemorrhage was very profuse. The House Surgeon (Dr. Smythe) saw the case immediately, and brought the ends of the divided bowel together with the glover's suture. The protruding bowels were then reduced, and the external wound dressed in the usual way. The patient was then ordered $\frac{1}{4}$ gr. morphia hypodermically, which was repeated in half an hour. In a short while he evacuated his bladder; urine normal.

Feb. 25th. Patient had rested well during the night; the morphia was repeated. Early in the morning patient complained of soreness over the abdomen, and other symptoms indicating peritonitis, however not very well marked; pulse 110. During the day he got six hypodermic charges of morphia, $\frac{1}{4}$ gr. each.

Feb. 26th. Temperature very high; pulse 132; tenderness over the entire abdomen, and well-marked tympanitis. Peritonitis was fully developed. Notwithstanding this the patient was permitted to take liquid food. The morphia was continued, and repeated sufficiently often to keep him under its influence.

Feb. 27th. Fever very high; pulse 163; tenderness and tympanitis very well marked, and patient delirious. Syr. morphia $\bar{3}$ss was given him, which had little or no effect. During the day, 2 grs. morphia were given him in $\frac{1}{2}$ gr. doses, hypodermically; patient still delirious and suffering very much. Towards evening there was an evident abatement of the symptoms.

Feb. 28. Patient very restless all night but somewhat improved; pulse 132; delirium continues; morphia given as before.

March 1st. Delirium subsiding; patient complains of nausea and chillness; still takes his beef-tea, etc. The hypodermic injections of morphia were ordered to be given 4 times daily.

March 2d. Dressing was taken from wound, and found that

union had taken place by first intention. Pulse 128. Morphia continued as before.

March 3d. Pulse 23; bowels moved several times; symptoms of peritonitis abating.

March 4th. Pulse 120; patient greatly improved, and almost free from pain, with the exception of some pain over region of wound. Morphia was continued as before, patient continued to improve every day. In the mean time the pulse ranged from 120 to 116 up to March 8th, when it was reduced to 100.

March 12th. Patient complained of unpleasant symptoms in the left side of chest. Dr. Smythe examined and found an effusion into the left pleural cavity, which gradually disappeared, and patient is now (April 4th) quite well, with the exception of a considerable protrusion of stomach or bowels at the site of wound, and just underneath the skin.

You will see in case 2 there was no veratrum given at all, but he was treated exclusively with opium. I merely report the case in order to show the difference in effects of treatment; that is, one was treated with veratrum combined with opium, and the other treated with opium alone.

In case 1 the pulse never exceeded 128. The patient commenced taking the veratrum the second day after receiving the injury. The symptoms of high inflammation were then fully developed. In two days after taking the medicine the pulse was reduced to 96, full, and very regular. The medicine was then given at longer intervals. In two more days the pulse fell to 66.

In case 2 the patient was treated with hypodermic injections of morphia, and repeated pro re nata. On the second day pulse was 110, on the third day 132, on the 4th, 162. Nothwithstanding that the morphia was repeated sufficiently often to keep the patient narcotized, the pulse continued to rise every day up to the fifth, then fell to 132, and in twelve more days the pulse was reduced to 100.

In case 1 the pulse was reduced and controlled with the two drugs combined, whilst in the other it seemed as if the more assiduously the opium was used the higher the pulse would rise.

The question might be asked, if case 2's injury was not much greater than case 1, which would have a tendency to cause greater inflammation? I think not, because the injury in case 1 was per-

foration of abdominal wall and stomach, with protrusion of the omentum; and the patient was also of plethoric habit. From the results given in the above cases, and many others that I have seen since treated, with the drugs combined, the prescription might well be called (if such an expression could be used) the antidote for acute inflammation. The patient treated with the opium and veratrum had slight delirium, whilst the other was delirious for several days. And I have noticed like effects in a number of other cases. With this treatment the pain is of shorter duration, and of less intensity, on account of the veratrum being a positive cardiac sedative, reducing the heart's action very quickly. In that way it modifies the great flow of blood to the diseased parts. We know that in almost all acute inflammations of any consequence, the heart is more or less excited, sending the blood throughout the system with greater rapidity, and where it reaches the diseased organ it acts like pressure applied to the part; the consequence is great pain. Opium would relieve the pain through the nerve centres, and in that way act as an antiphlogistic. But to accomplish this, it would require a longer time and a greater quantity of the drug, and you would find out that the patient had taken such a quantity of the drug that he would remain stupid for several days after, whilst the action of veratrum appears to be limited to the system of organic life, upon which it acts by its influence on the sympathetic, of which it is a direct stimulant. The two apparatuses more directly in relation with the sympathetic are those of digestion and circulation, and the functions over which they preside are first affected, the others secondarily. The action of opium on the circulation, although mild and not very sudden, is very decided and well defined. It seems to contract the arteries and arterioles, and thus diminishing their calibre. It renders the heart's murmur more strong, energetic and regular. It augments arterial tension, increasing the fullness and force of the pulse, and moderates or reduces the number of beats in direct proportion to the fullness and force. It results from this action that the course of the blood, when it has been irregular, becomes more regular. As a result of this, respiration becomes more calm and regular, the oxidation more normal, the skin paler and more natural in color, and the secretions more abundant. So by combining the opium with the veratrum, all those unpleasant effects are avoided, the heart's action reduced in quite a short time,

and in that way pain is lessened, the patient is more rational, and can better describe his feelings.

As for diet, it is to be given or not, as the urgency of the case may determine.

I will sum up the whole by saying, that veratrum and opium combined are less unpleasant than the opium given singly. The patient seems to recover sooner and with less weakness. That the properties of one are enhanced by the addition of the other; that the controlling influence of the drugs combined is far superior to either given alone, and if administered with care, there are never unpleasant effects.

THE CLIMATOTHERAPY OF, AND THE AMERICAN MOUNTAIN SANITARIUM FOR, CONSUMPTION.

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The influence of climate in the treatment and prevention of consumption has been recognized from the earliest times; yet, though many errors have been corrected, the problem is still far from having been thoroughly and satisfactorily solved. No such solution can be hoped for until additional researches have furnished the data indispensable for absolute conclusions. The premises now lacking for such conclusions are to be sought for in a full knowledge of the various morbid processes still classed under the single title of Consumption or Phthisis Pulmonalis—and in an equally full knowledge of the Vital Statistics and Meteorology of every section of the earth's surface. Those who have most studied the subject are also those who are best convinced that climatotherapy is still in its developmental stage; and that pathologists, vital statisticians, meteorologists and hygienists have enormous labors to accomplish, before the physician can hope to realize from the influences of climate on disease the immense benefits destined to be secured.

A glance at the causes now at work to promote this desirable result is calculated to inspire hope. Among these promoting causes, none are more potent than those universal civilizers

and humanizers, steam and electricity, which are daily increasing our knowledge of every inhabited nook of the globe. Within the past thirty years, the foremost nations have developed some appreciation of the social and political importance of vital statistics and meteorology, and there are hopeful evidences that, while the most civilized States are nurturing the seeds of this still inadequate appreciation into matured fruit, the less civilized will be awakened to some realization of the importance of the subject. An additional encouragement is found in the increasing conviction of the profession, that the physician, in the discharge of his duty to patient and society, must keep in mind that "air, water, and locality" deserve from him, as they received from Hippocrates, primary consideration; and that therapeutics must depend more and more on hygiene. Finally, the rapidly growing literature of the subject, the publication at Leipsic of a Quarterly Journal, and at Vienna of a Year-Book, especially devoted to it, forcibly indicate that potent causes are in operation to solve our doubts and perfect our knowledge of climatotherapy.

With little lore or practical experience in the subject, I still venture to call attention to some of the results of modern researches upon the influence of climate in consumption.

One need not to have become gray-haired in the profession to recall the period when it was generally taught that mild and uniform climates, even tropical seashores, as Madeira, Florida, Cuba, etc., were those best adapted to consumption, and that malarial regions were especially favorable. These beliefs were so generally and firmly established, that, though long since proved erroneous, physicians are still to be found who credit them. Statistics have proved that warm countries exercise an unfavorable influence on consumption, tropical countries the worst, and that as a general law the disease diminishes as we pass inland, to the north, and from the low to the high lands.

The delusion that malaria acts favorably on consumption, is practically important especially to the inhabitants of malarial regions, and deserves constant refutation until wholly abandoned. It owes its existence, in this section of the United States, to a misinterpretation of the fact that in our southern cities the proportion of annual deaths to the total annual deaths by consumption is generally less than in the northern cities. This fact is indisputable, and its misinterpretation not

less so. This misinterpretation is due to failure to compare the total number of annual deaths of these respective cities with each other; and to ignorance of the fact that the test of the mortality by any given disease in a given place is to be found in the proportion of the annual deaths by said disease *to the total population*, and *not to the total deaths*. The reader can free himself permanently from this source of serious and oft-repeated errors, if he will carefully digest the following illustration: In 1873 New Orleans had 200,000 population, 7505 deaths, and 850 of these were by consumption; while the same figures for San Diego Co., California, were 9000 population, 53 deaths, and 13 by consumption: now if the comparative mortality by consumption in these two places be tested by the delusive ratio of consumptive deaths to total deaths, then New Orleans lost only about 11 in every 1000, while San Diego lost about 24; and hence the hasty and absurd conclusion that New Orleans was more than doubly as favorable to consumptives as San Diego: but, if the true test be applied—the ratio of consumptive deaths to population—it will be found that in San Diego there died by consumption only $1\frac{1}{3}$ persons to every 1000 population, while in New Orleans more than four of such deaths occurred; and hence the true and indisputable conclusion, that three times more people died in New Orleans by consumption than in San Diego. Those who cannot master such simple arithmetical premises and conclusions—and there seem to be a good many of these unfortunates—are strenuously urged to eschew statistics altogether and forever.

Abandoning the consideration of long-credited errors, and reserving the consideration of the important influence of altitude on consumption, some of the general conclusions which seem to be well founded may now be stated. It is conceded that in cases far advanced no benefit can be expected from change of climate, and that our ignorance of the climatic requisites is such, that an aggravation of the symptoms ensues as frequently as their amelioration. It is as fully conceded, that in the early stages, and above all as a prophylactic, when the dreaded disease is threatening invasion, the influence of climate is pre-eminent in arresting it—generally prolonging life, often fully restoring health. It is also agreed that there is no one climate good for all cases and stages of consumption, and that the climate good for a given case in summer is often not good for

the same case in winter; and that even the inclination, tastes and habits of each patient should be consulted, for his contentment and happiness seriously influence his health.

It has been found that all nomadic tribes are remarkably exempt from consumption, while the pernicious influence of incarceration, inadequate ventilation, and deprivation of sunlight has been repeatedly illustrated upon caged animals, and most disastrously in the jails, ships, and barracks of human beings. In consumption, a life of exercise in the open air is essential to salvation. The seasons and places noted for sudden and frequent meteorological changes, or other conditions which confine the patient to the house, are the worst; and (other things being equal) those places are the best, where life out-doors is permissible to the greatest extent. Another important indication, in determining for each case the change of climate desirable, is to be derived from the consideration of the season and weather, which have been observed to exercise the best influence upon his general health and his special disease, and particularly upon his digestive, nutritive, and respiratory functions. The climate most appropriate for the case in hand is likely to be the one which presents these conditions. Thus Dr. Bennett, of England, has obtained in his own case, the most successful results by travelling for years with "a thermometer in his pocket" to control his constant changes of temporary residence. With an hereditary tendency to the disease, the writer's general health has always been most vigorous when the weather has been cold, the air dry, and the atmospheric pressure diminished; therefore if threatened with consumption, I should promptly and unhesitatingly remove to a climate which furnished these conditions.

Dr. C. T. Williams, in his Lettsomian Lectures upon "The Influence of Climate in the Treatment of Pulmonary Consumption," recently published (1876) in the *British Medical Journal*, states the following results of his statistical researches, which are particularly thorough as to the health-resorts of England: "A bracing though gusty climate avails more than a mild, still, and somewhat relaxing one; and instead of seeking for a sedative atmosphere to allay the cough and reduce irritability, we should in most cases select a stimulating one to increase the appetite, and to invigorate the system of our patients." Parkes, in his admirable work on Hygiene, states: "I have been astonished to

find how well even phtisical persons will bear great changes of temperature if they are not exposed to moving currents of air."

Dr. Williams also asserts, that "in all forms and degrees of phthisis the dry climates are the most likely to arrest the disease," and "for the ordinary forms of consumption, a dry air, whether inland or marine, is better than a moist one, inland or marine, cold or hot." While many authorities concur in the superiority of dry to moist air, there are none the less some who assert with equal positiveness the reverse. In fact the evidence on this point is conflicting, and this is no doubt due in part to the fact that humidity is a relative term, and that the degree of humidity has not been studied nor stated with sufficient precision. The force of authority is strongly to the effect, that while a relatively dry atmosphere is the best for consumptives, yet that neither excessive humidity nor excessive dryness of air are favorable; and that very damp air, if cold, is markedly unfavorable. In this connection, allusion must be made to the recent [since 1860] valuable researches of Bowditch, of Mass., and Buchanan, of England, on the influence of subsoil drainage in producing consumption. It has been satisfactorily proved that dampness of the soil, from which aerial humidity must result, is an important cause of phthisis to the population living on such a soil; and that the prevalence of the disease can be and has been notably diminished simply by attention to the proper drainage of such wet soils. Even prior to these satisfactory researches, the fact was recognized that sandy, porous soils exercised a better influence than the alluvial, impermeable ones.

While not my purpose to discuss the influence of diet in consumption, there are some prominent facts which cannot be avoided even in a discussion solely of the influence of climate. For instance, all agree that whatever be the climate, the introduction and assimilation of the largest quantity of nutritive food is of the utmost importance; and many are disposed to ascribe the happy influence of certain climates solely to their beneficial effects in promoting digestion and nutrition. Others claim that the favorable results obtained in certain places are directly dependent, not on any peculiarities of their climate, but on the peculiarity of their diet. For instance, Iceland, the Faeröe Islands of Denmark, and the Kirghiz-Steppes of southeastern Siberia, enjoy, it is said, an absolute immunity from consumption. The nomads of the first feed especially upon fats and oils, of the

second upon fish, and of the last upon koumiss or fermented mare's milk, and to these peculiarities some would attribute their immunity. It is certain that professional experience throughout the world testifies favorably to the benefits of fish oil, and that the Russians have introduced and advocate the use of koumiss. The milk-whey, skimmed milk, and other such dietetic cures, deserve remembrance in this connection. It also deserves to be noted that all of these peculiar diets are carbonaceous; and further, that some of the regions, as the Steppes of Tartary, said to enjoy an immunity from consumption, are below the level of the sea.

Among the several climatic factors which favorably influence consumption, there is no one of them of such preëminent importance as altitude, no one of them in regard to which professional opinion is so strongly and unanimously expressed. Though long known, that Quito and some other mountain cities were exempt from this disease, the knowledge is comparatively recent that these special facts indicated the general law that high altitudes, in whatever country found, enjoyed a like exemption. If the investigator climb high enough—whether the Andes of South America, the Sierra Madres of Mexico, the Rocky Mountains or Apalachians of the United States, the Alps or Apennines of Europe, or the Himalayas of Asia—the altitude can be found where consumption is unknown, and where the threatened victim of the lowlands can gain such health and prolongation of life as neither doctors nor drugs could secure him.

What is this health-giving altitude? No fixed numbers measure it; varying with different circumstances, it may be found in one place at 2000, and in another at not less than 8000 feet above the level of the sea. What are the different circumstances which cause these variations? All are not known, some will be stated. Latitude has a notable influence, for the further south the higher the desired altitude. Jourdanet thinks that it is generally to be found half way between the ocean's level and the altitude of constant snow; but this is believed to be an over-estimate, though a safe one. The desired altitude is higher on mountains near the coast than on those farther inland; even on the latter it must be sought for higher on peaks on the border of, than on those more centrally located within such mountainous regions; and even in this case it is found higher in mountain valleys hemmed in by adjacent peaks than on an ex-

posed mountain's top or plateau. Humidity modifies the altitude; and since forests, as also the nature of the soil and its drainage, modify the hygrometric condition of the air, therefore these affect the question of altitude. It is not doubted that there are other modifying causes, as yet inadequately understood; those given should suffice to warn against a hasty conclusion as to any special place, from considering the sole fact of altitude exclusive of other important conditions.

On what do the benefits of altitude in consumption depend? On this point authorities are not in accord, but it is safe to say that these benefits must depend upon the climatic differences between the mountains and low lands generally. On mountains the variations of temperature, from summer to winter, from day to night, have a smaller range than on sea-levels; and as the smaller range of these variations is less in southern than in northern altitudes, it is said that lofty tropical altitudes are the best. It is also said that there are generally more clear days on mountains, especially in the winter, hence greater encouragement to life in the open air, and therefore the important benefits which result from such a life. But the three most important characteristics of mountain climates are the greater purity, dryness, and rarefaction of the air. The prime importance of atmospheric purity in the prevention and treatment of consumption is fully recognized, and has already been referred to, as has also been the importance of dryness of the air. The influences of diminished ærial pressure—the only characteristic peculiarity of mountain-climates—remain to be considered, it being prefaced that this subject has not yet been sufficiently studied, and is not thoroughly understood.

In a rare atmosphere the respirations become more frequent, attempting (it is asserted, ineffectually) to compensate for the diminished quantity of oxygen: they also become more ample, owing, at least in part, to the diminished ærial pressure, both on the thoracic parietes, whereby less resistance is opposed to the inspiratory expansion; and on the inner surface of the lungs, whereby greater play for the expiratory elastic recoil of the air-cells is permitted.

This greater respiratory activity, increased both in frequency and amplitude, reacts—as respiration by anatomical and physical necessity must always do—on the heart, and thereby greater force and rapidity is given to the circulation. While the general cir-

culation is thus rendered more active, the diminished pressure on the surface of the body tends to increase the peripheric capillary circulation. The increased activity of the circulation is supposed to be beneficial in consumption, and does probably explain, at least in part, the well-established fact that mountain climates unfavorably influence diseases of the heart.

Prof. Paul Bert, whose physiological experiments on the influence of barometric pressure deserve the utmost consideration, confirms Jourdanet and others in the assertions that, the less the atmospheric pressure the less the quantity of oxygen in the blood, and the less the amount of carbonic acid and other products of oxydation; but, the freer becomes the exosmotic excretion of such amount of these oxydized products as are formed in the economy. Bert asserts farther, that asphyxia can be produced by diminution of the ærial pressure or tension, even though oxygen be introduced into such tenuous air in dispropertionate and superabundant amount. This diminution of the oxygen, in the air and the blood, is termed by Jourdanet a "respiratory diet," and in it he finds satisfactory explanation for the immunity from phthisis in high altitudes. Lombard urges that a "carbonic plethora" is produced by the diminished oxydation, and in this seeks to find a common explanation, both for the benefits conferred by altitude, and for those derived from the various carbonaceous diets. Lombard calls attention to other striking and instructive facts, viz., that the physical and chemical influences of rarefied air, which cause exemption from phthisis, are noted for producing emphysema; that emphysema, however produced, is antagonistic to consumption, that the former is apparently a natural means for curing the latter; and that a physician who seriously proposed to relieve the one by artificially producing the other was by no means deserving of ridicule.

Since rarefaction of the air, whatever may be its other effects, does facilitate the exosmosis of the liquids and gases of the body, it must tend to promote appetite and nutrition. Farther, the dryer as well as rarer the air, the more active is evaporation; and as this process withdraws heat as well as fluids from the body, it necessarily increases the demand for supplies of food. By such considerations it can be explained why altitude increases respiration, circulation, appetite, and the nutritive processes generally; and yet, I think it must be admitted, that there is too much vague generalization about all this to

explain satisfactorily the admitted fact that altitude does exercise a special influence on those special morbid processes designated as consumption. Therefore be it understood, that I have cited the supposed facts as to the influence of rarefied air, not because entirely satisfactory to me, but in order that the reader might be as fully informed as my own inadequate knowledge permits me to render him.

Though causes be obscure, results must be admitted. Germany, in science the pioneer of nations, has been the first to make a practical application of the facts stated by establishing, as early as 1854, a mountain sanitarium for pulmonary diseases. The success which followed encouraged the foundation of others, and not less than five are now in successful operation, viz., at Goebersdorff, Prussia; Reichenhall, Bavaria; Aussee, Austria; and at Davos, and St. Moritz, Switzerland. The English have sanitaria in the Himalayas, the Italians in their mountains, and some exist in the Peruvian Andes. Dr. Williams gives the warning that the Alpine and Andean sanitaria supply such wretched food that they do not deserve patronage, until they learn to furnish that essential in the treatment of consumption—an abundant, well-cooked, and appropriate diet.

The facts now stated indicate how much more highly climatotherapy and mountain sanitaria are appreciated in Europe than in the United States. But American enterprize in the practical application of knowledge is unsurpassed, and as accessibility to our mountain regions increases annually, it is believed that it will not be long before the profession and the public will awake to the importance of providing fit mountain resorts, especially as preventives against consumption, a disease which causes one-eighth of all our deaths, and annually destroys about three in every thousand of our population.

Before considering the advantages which the United States possess in this regard, it may prove instructive to state that Central Asia (Thibet) possesses the loftiest and grandest mountain plateau in the world; 160,000 square miles in extent, at an altitude of from 10,000 to 15,000 feet. What a field for future climatotherapic research! Our southern neighbor, Mexico, deserves careful study, and inspires great hope by its possession of the glorious table-land of Anahuac, from 6000 to 9000 feet above the sea, in which the City of Mexico sits enthroned at an

altitude of 7400 feet, and Popocatepel raises its snow-clad head 17,716 feet. If tropical altitudes be, as is asserted, the most favorable to consumption, then Mexico must become in the future a noted resort for wealthy American victims to this disease.

The United States possesses two sections of country worthy of special study in this connection. The "Great Basin of North America," between the Rocky and Pacific Mountains, consists of 150,000 square miles of *table-lands and plateaus, which range from 4000 to 5000 feet above the sea, and shoot from their bosom snow-clad peaks which mount skyward from 10,000 to 17,500 feet. From this section most favorable reports have come. Among others, Dr. S. E. Solly reports that Manitou, which abounds in valuable mineral springs, has proved to be highly beneficial to the incipient stages of consumption. It is situated at an altitude of 6370 feet, and yet is 8000 feet below the adjacent summit of Pike's Peak. It is within 5 miles of the prosperous town, Colorado Springs, and is 75 miles south of Denver, Colorado. It possesses five hotels, but no sanitarium is reported. Dr. Solly writes that "there is probably no climate in the world where out door life is so thoroughly enjoyable through every season of the year as that of Manitou;" that the popular reputation of the climate has been injured (as, by-the-by, is the usual case with the mountain sanitaria for consumption) by the flocking of patients to it without discrimination or selection; and that the death of those suffering with extensive and progressing cavities has been often accelerated by the great and sudden change from the lowland to this climate. He reports, in addition, the following facts, which I specially cite because they are confirmatory of the experience of others as to the influence of high latitudes: that there is total exemption from asthma, while emphysema and heart disease are aggravated; and that, contrary to what has been heretofore supposed would be true, the hemorrhagic cases of the disease are especially benefited, and that consumptives improve to the greatest extent particularly during the winter.

Another mountain region of the United States, the various

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*Table lands are elevated regions of generally even surface. Plateaus are elevated regions of uneven, rugged surface, often with mountain peaks jutting from them. Steppes are the immense desert plains of Russia and Siberia, somewhat similar to our great Prairies.

ranges and plateaus of our eastern Apalachians, not only deserve consideration, but our first study and chief interest, because of its greater accessibility and proximity to our chief centres of population. As the highest peaks rarely exceed 6000 feet, while the average height of all the peaks is not more than 2500 feet, and the plateaus are still lower, the Apalachians fail to arouse as sanguine hopes as their loftier and grander western brothers. But there are the best reasons for believing that many places will be found reaching an altitude sufficient to secure immunity from consumption, and therefore suitable for its treatment. The Apalachians attain their most lofty, rugged, and striking development in western North Carolina, where, between those two off-shoots the Blue Ridge and the Alleghanies, are to be found the fourteen peaks which constitute the Black Mountains. All of these exceed 6200 feet, and the highest (Mt. Mitchell) reaches an altitude of 6707 feet, rendering it the loftiest summit east of the Rocky Mountains. But these monarchs of the east are not alone in their grandeur, for in this same region are to be found the Great Smokey, the Unica, the Bullhead, the Saluda, the Craggy, and the Roan Mountains, which present (according to Prof. Guyot, of Princeton) not less than thirty-six additional peaks which exceed 6000 feet in altitude. Having visited the Swiss Alps, and all the noted mountain ranges of the United States from Labrador to the Gulf of Mexico, the writer does not hesitate to testify that there is no mountain region in the eastern United States which equals in beauty and grandeur this sublime section of North Carolina, which roughly may be said to be embraced in a circle having Asheville as its centre, and with a radius of about 40 miles. A scientist, long engaged in the official exploring expeditions of the Rocky Mountains, stated last summer that he was but little less impressed by the lofty, graceful, diversified, and imposing appearance of these noble mountains, than by the higher peaks of the great giants of the West.

In this region, between the Blue Ridge on the east and the Alleghanies further inland, is a mountain plateau more than 2000 feet above the sea; and here, in sight of the Black Mountains and their many ambitious competitors, is located the pleasant, healthy, and hospitable village of Asheville, with some 2000 inhabitants, and the only mountain sanitarium in America. With three railroad lines attacking it from the east and one from

the west, Asheville still sleeps undisturbed by the locomotive's whistle, and the newsboys' cry of telegraphic extras. Ancestral stages jolt along its quiet streets, and are not the only institutions which remind the city-denizen that he has surrounded himself with the ancient customs and manners of our revolutionary sires. Presenting from every point the most captivating scenery, this charming village, 2250 feet above the ocean's level, looks down upon the famous French Broad, which ploughs its foaming way to the west through forty miles of rugged mountain gorges. Long noted for its agreeable climate* and great salubrity, consumption is almost unknown to its inhabitants, and therefore here has been established Dr. William Gleitsmann's "Mountain Sanitarium for Pulmonary Diseases." Having in 1875 spent ten pleasant days in this Sanitarium, I have felt it a duty to report the results.

Dr. Gleitsmann, a Bavarian by birth and professional education, is the proprietor and physician in charge. I found him a highly educated and sensible physician,† so forcibly impressed with the benefits to be conferred by such an institution on threatening consumption and its early stages, that he had invested his means largely in this enterprise; and yet, somewhat to my surprise, I did not find him to be either an enthusiast or

* Note on the Climate of Asheville.

Summary of E. J. Aston's Meteorological Observations of Temperature and Rainfall, for the eight years, 1867–1875.

Month.	Highest.	Lowest.	Mean.	Rainfall.	Month.	Highest.	Lowest.	Mean.	Rainfall.
January	67.	3.	37.3	2.4	July	90.	53.	71.9	4.6
February	69.	4.	38.9	4.4	August	88.	51.	70.9	4.8
March	75.	3.	44.8	3.8	September	86.	34.	64.	2.3
April	83.	30.	54.1	2.3	October	81.	24.	53.1	2.
May	86.	38.	61.5	4.	November	72.	7.	43.3	2.8
June	87.	54.	69.3	4.1	December	72.	–1.	37.3	2.7

"Mean temperature of Spring, 53.49; Summer, 70.72; Autumn, 53.48; Winter, 37.87. During the above period of eight years, the thermometer but twice reached above 88°, and but three times below 3°." The extreme range during the eight years was from the maximum 90° to the minimum—1°. The average annual mean of temperature was 53.9°, and of rainfall 40 inches. Situated at about 35° 30′ latitude, Asheville has the summer temperature of St. Paul, Minn., 45°, and the winter temperature of Fayetteville, Ark., 36° of latitude.

† In an interesting article in the January No., 1876, of this Journal, on "Pneumatometry," by Dr. Schuppert, the author, referring to Waldenburg's Pneumatic Apparatus, says it is "an instrument which I herewith introduce into this country." Long prior to this announcement Dr. Gleitsmann had this instrument in daily use at his Sanitarium, as also the Spirometer, and all other modern pneumatometers and instruments serviceable either in the diagnosis or treatment of pulmonary diseases.

narrow-minded specialist, but as modest and sensible as every man of true science and sound culture should be. More than a good physician—for to the amiability of a kind-hearted man he adds the gracious courtesies of a refined gentleman. To Dr. G.'s attention and skill as a physician, to his just and kindly consideration as a man, I have no hesitation in recommending any patients with confidence. He has by force of the law a mate, who, fortunately for him and suggestively to society, illustrates the design of the law, inasmuch as she is, in truth, his *help-mate*. Of German parentage and English education, Mrs. G. has no superior as the head of a household. While the scrupulous cleanliness, thorough ventilation and domestic comfort of her rooms, the cheerful aspect of her parlor, adorned with all the paraphernalia of social amusements, and the admirable discipline of her servants, aroused my admiration—this, three times daily when seated at her table, mounted to enthusiasm, and I fervently blessed the praiseworthy schooling which had rendered an educated lady an accomplished cook. My surprise was great to find, apparently buried in one of the unfrequented by-ways of this busy land, such a physician possessing such a helpmate and such a sanitarium. For sad experience had taught me to expect a pretentious specialist or quack (they are brothers), with as pretentious and more dirty surroundings. Truth permits me to say, gladly, that I am convinced that for those either threatened with or in the early stages of consumption, and especially for such of these as live in the malarial regions of the South—their best hope of prolonged life and renewed health will be in availing themselves of Dr. Gleitsmann's Sanitarium.

While there, I had daily intercourse with a half-dozen consumptive inmates, and satisfied myself that their unanimous report of decided improvement was not exaggerated. One was a young and intelligent physician, whose favorable experience was such, that he was investigating the relative altitude of the various southern mountain villages in search for a location which might possess the double advantage, suitability both for his business and his disease. Another patient from the South Carolina low lands had experienced great relief from distressing bronchial irritation, and great amelioration from suffering, though so far advanced in consumption that no hope was entertained of his

restoration to health. In a valley near to, and much lower than Asheville, old residents assured me that during their whole lives they had never heard of but two deaths by consumption, and that these two deaths were of a young brother and sister. Throughout this entire region the disease is rare. Forty miles southwest of Asheville is the mountain, Cæsar's Head, 4000 feet above the sea, presenting with the Table Rock and other surroundings the grandest scenery I have ever witnessed out of Switzerland. On the summit of Cæsar's Head is a comfortable summer inn; and its amiable and hospitable host is the intelligent physician, Dr. Miles, who resides and practices in Pickens, South Carolina. The doctor assured me that he had long been wasting away with bronchial and pulmonary symptoms, and had for several preceding years made Cæsar's Head his summer home, on account of the great benefit to his disease. He is now as robust a specimen of physical vigor as the United States can produce. By him and others, I was assured that Asthma was unknown at Cæsar's Head, and was always relieved when brought there. These are some of the special facts, which I have desired to add to the general ones previously stated, in justification of my own favorable opinion of the benefits to be derived by consumptives and asthmatics from this mountain region.

Another strong recommendation to the impoverished people of this section is, that nowhere else in the South can economy be so readily consulted. Good accommodation (not the very best, but the best the country affords) is furnished at from $25 to $40 per month, and these amounts secure greater comfort than many of our summer resorts afford at double and treble these sums. I regret that I am forced to warn those habituated to well-cooked meats, that he who would enjoy them in this as in other mountain regions, will be forced to exercise his utmost skill and tact. For the natives do not deem meat properly cooked until it approximates dried raw-hide soaked in a greasy gravy, and their devotion to and abuse of the barbarous frying-pan is well calculated to dry up the digestive juices of any well-fed Christian. But, let it be understood that Dr. G.'s Sanitarium is a blooming oasis in this desert of ill-cooked meats, that Mrs. G. is a grand mistress of the culinary art of civilization, and yet that, the comfortable rooms and appetizing table of the sanitarium are to be had at the habitual rates prevailing in

Asheville, viz., at from $8 to $10 per week. Dr. G.'s charges for medical services are so extremely moderate, that I cannot conceive that the very narrowest purse and conscience could invent just cause for dissatisfaction.

How are Asheville and the Sanitarium reached? By two main railroad routes, viz., by the "Piedmont Air Line Railway" on the east, which extends 547 miles from Atlanta, Ga., to Richmond, Va.; and by the E. Tenn., Va. and Ga. R.R., i. e., by so much of said road (130 miles) as extends from Knoxville to Bristol. On the former route there are three depots of consequence in this connection. First, travellers from the South should halt 158 miles beyond Atlanta at Greenville, S. C., where comfortable accommodation can be secured, as also good private conveyances, or daily stages over an excellent road, 60 miles to Asheville: at least one good halting place will be found en route, viz., at Hendersonville, 40 miles from Greenville and 20 miles to Asheville. Second, the traveller from the South may substitute for this 60 miles of good staging, 221 miles by rail and 25 miles of staging, by continuing on the Piedmont Railroad from Greenville, S. C., to Charlotte, N. C. (107 miles), and by then taking a branch railroad via Statesville to Old Fort (about 114 miles), at which terminus he will find 25 miles staging to Asheville. Third, the traveller from the North should take the Piedmont Railroad from Richmond to Salisbury, N. C. (238 miles), and from thence via Statesville to Old Fort, 114 miles, from whence 25 miles staging to Asheville. So much for the eastern route by the Piedmont Railroad.

The traveller, whether from the South or North, if not debilitated or disabled by disease, will find the most attractive but laborious route to Asheville to be via Morristown, Tenn., a dirty place, with hotel accommodation of such a nature that I shall never forget the wretched sensation of despondency which overwhelmed me when my weary body first sought needed rest there; and my weary brain was terrified by the thought that this savage place forewarned of grosser barbarisms in the unknown country beyond it. This wretched village, 40 miles from Knoxville and 90 from Bristol, has fortunately a branch railroad which quickly takes the disgusted traveller 40 miles away to its terminus, Wolf Creek. From thence there are good daily stages (Sundays excepted) to Asheville, 46 miles distant; and for 37

of these 46 miles the stage road runs by the bank of the enchanting French Broad. This wagon road is not good, and is likely to prove too exhausting to invalids, and very tedious to all not aroused to enthusiasm by the wildest mountain and river scenery in the eastern United States. By this route, via Morristown and Wolf Creek, with its 46 miles of tedious staging to Asheville, the great advantage is gained of having en route three convenient stopping places. Nine miles beyond Wolf Creek the stages halt, generally for the night, at the famous Warm Springs, where an excellent hotel furnishes good accommodation, and where many rheumatics, dyspeptics, and neuralgics successfully resort for relief. Sixteen miles beyond the Warm Springs is the beautifully located mountain village, Marshall, where accommodation, though not of desirable quality, can be procured. Beyond Marshall and within nine miles of Asheville, is Alexander's noted and extremely comfortable inn.

The reader should be informed that since the summer of 1875 work has been done on the various railroads verging towards Asheville, therefore he may find depots now nearer to it than those of Greenville, Old Fort, and Wolf Creek; and that the travelling expenses for one person to Asheville, by any route from such distant centres as New Orleans, St. Louis, and Boston, ought not to exceed $50.

Having introduced my reader to the only American Mountain Sanitarium—having stated my reasons for strongly recommending it—having instructed him what to expect as to expense, accommodation and medical treatment, and by what mode of travel to get there—I have no duty left except to express my acknowledgements for many of the facts cited to Bordier's articles (1875) on Climatotherapie, in Gubler's *Journal de Therapeuitque;* to Lombard's "L'Immunité Phthisique" (1871); to Williams' "Leittsomian Lectures" (1876); to Dr. Gleittsmann's "Statistics of Mortality from Phthisis Pulmonalis" (1875), "Nature and Curability of Phthisis Pulmonalis" (1874), "Altitude and Climate in Phthisis Pulmonalis" (1875); to Dr. S. E. Solly's "Mineral Waters and Climate of Manitou" (1875); to the *American Medical Journal of Science*, Oct., 1871, and Oct., 1875; to Grisolle's, Zeimssen's, and other well-known text books; to Parke's and Wilson's works on Hygiene; and finally to Maury's and other physical geographies.

INSOLATION.*

BY W. R. MANDEVILLE, M.D.

READ BEFORE THE NEW ORLEANS MEDICAL AND SURGICAL ASSOCIATION, APRIL 1, 1876.

Under the name of coup de soleil or sunstroke, sudden cases of severe illness of very different natures have been described. Dr. H. C. Wood, jr., states: "Such of these cases as have really been dependent upon exposure to excessive heat can be classified under two, or perhaps three, heads, to which the name of acute meningitis or phrenitis, heat exhaustion, and thermic fever or true sunstroke, may be respectively applied, as more or less ex-expressive of the pathological conditions existing." He goes on to state, however, that "acute meningitis or phrenitis, due to exposure to the sun and the direct action of its rays upon the head, must be a very rare affection." In fact, he says, that he has "no positive evidence to offer of its existence in nature, having never seen or read an unequivocal record of such a case."

We must also not confound simple exhaustion, due to excessive labor in a heated atmosphere, with true sunstroke, for simple exhaustion due to this cause does not differ in its pathology or symptoms from other forms of acute exhaustion, for the features are very much the same, viz., cool, moist skin, with a feeble, rapid pulse, combined with great muscular weakness and a tendency to syncope. Dr. W. mentions: In 1857, Dr. Wm. Pepper reported certain cases of sunstroke, in which, on post-mortem examination, the heart was found relaxed and very much softened; he distinctly states that the surface during life was cool, and Dr. Condie believed that these cases died simply from exhaustion. Dr. Condie was the first to describe clearly the two classes of sunstroke.†

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*From 1867 to 1875 inclusive—8 years—there have occurred but 76 deaths from sunstroke, the greatest number occurring in 1873 and 1874. In 1873 there were 15, and in 1874, 25 deaths. In 1873, out of the 15 deaths that occurred, all were in the month of July. In 1874, out of the 25 cases, 23 occurred in August. These months were the hottest of their respective years.—[BOARD OF HEALTH REPORTS.

†These cases were doubtless true sunstroke, but they had all been freely bled before he saw them—not simply heat exhaustion. The cool skin was the result of the bleeding. The soft, flaccid hearts were found, because the temperature not being high at the time of death the cardiac myosin did not coagulate.

Causation.

It seems that the necessary and immediate cause of sunstroke is due entirely to *heat*, artificial or solar. It was formerly generally believed that the exposure of the head to the direct rays of the sun was requisite for the production of this disease; but this is far from being true, for in Reynolds' System of Medicine, Vol. II, p. 157, it is stated that one hundred cases of sunstroke occurred on one of the French men-of-war, most of them being attacked at night, when the men were lying in their bunks.

Dr. Longmore reports, that out of sixteen cases of sunstroke seen by him in one epidemic, thirteen originated in hospital or barracks.

Dr. Geddes (Clinical Observations on Diseases of India, London, 1846) mentions a case which occurred in the hospital, in the person of a man convalescent from measles.

Dr. Morehead says that direct exposure to the sun, although a frequent is not a necessary condition to the production of the disease.

Dr. Swift asserts that the same affection may be caused by exposure to artificial heat, and that eleven of his cases were attacked in the laundry of a hotel, and several were brought from sugar refineries.

Dr. Barclay, in the *Madras Quarterly Journal*, No. 2, 1860, mentions: "The attacks of insolation came, with very few exceptions, when the men were in the tents, generally during the day, but in several instances during the night—never, except in one instance, along the line of march. The patient had generally been lying down, and often seemingly asleep, or, as it would probably be more accurate to say, attempting to induce sleep. Sometimes the attention of his comrade was first directed to him by his hurried and heavy breathing, and on attempting to arouse him he was found insensible."

I could quote possibly more authorities on this point, but these I think will suffice to show that direct exposure to the sun's rays is not absolutely necessary for the production of this disease.

I shall allude but briefly to the statement that intemperance and malaria are necessary factors in the production of coup de soleil. I doubt very much if malaria has anything to do in producing this disease, and if it does, it must be to a very

limited extent; but as to intemperance, I have no doubt that it does play an important agent to a certain extent in this malady, for a large number of cases do occur in the persons of habitual drinkers, but the most temperate are not exempt.

"The real and sole producing cause of the disease is, therefore, Heat. There are, however, various predisposing causes, which greatly aid the exciting cause, probably by lessening the power of resistance to it. First in importance among these is a want of *acclimatization.* Foreigners are always attacked in much larger numbers than natives of the tropics. It must be remembered, however, that no amount of acclimatization will afford certain protection, as even the Hindoo, born and bred in the stifling atmosphere of Bengal, is occasionally attacked." (Wood.)

Some of the most frightful epidemics on record have had, as their predisposing cause, debility, especially that debility or exhaustion which has been brought on by fatigue, and in the highest degree by fatigue in a heated atmosphere.

Dr. Barclay mentions an epidemic of this nature, recorded by Dr. Wood. The 43d Regiment, to which he was attached, made a most extraordinary march of over eleven hundred miles, chiefly through the lowlands of India, and at the hottest season of the year. This march was continuous, with the exception of a few brief halts. No cases of sunstroke occurred until nine hundred and sixty-nine miles had been traversed, and the men had become thoroughly exhausted, and even markedly emaciated. Shortly after this the regiment rested some eight days, and then started again, arriving soon in a valley in the Bisramgunge Ghat, a narrow ravine, with precipitous walls nearly a mile in height. During the day the thermometer in the tents ranged from 115° to 127°, and on one occasion was rated 105° at midnight. The number of cases of insolation now became very great, and although most of them recovered, two officers and eleven men were lost in the four days during which the regiment remained encamped. Although the air became cooler as the regiment emerged from the hills, yet seven more fatal cases occurred in three days. This certainly shows that exhaustion from severe labor at a high temperature is a powerful predisposing cause of sunstroke.

It will thus be seen that the various predisposing causes of sunstroke act by rendering the nervous system more sensitive to the morbific agent, heat, or else interfere with the glandular

system, so weakening it that it is unable to afford the proper secretions whose evaporations shall enable the body to resist the external heat, or perhaps act in both of these ways.

This want of acclimatization means simply an unaccustomed condition of the nervous system to the stimulant, heat, and also, probably, that the glandular system, from want of training, so to speak, is unable readily to produce the requisite amount of secretion. Again, intemperance causes the same results in a slightly different form: "organically weakened nervous system, and organically altered glandular apparatus, are unable to cope with the morbific agent."

Symptoms—Course.

Sunstroke does not, as a rule, attack its victims instantaneously; there are generally certain premonitory symptoms, such as severe headache, vomiting and weakness previous to the attack. A few quotations on this point may be of interest to the Association.

Dr. Morehead, in his work on the Diseases of India, makes the following observations: "In this degree there is much headache, with intolerance of light, and contracted pupils, succeeded by suffused eyes, and drowsiness, or quiet delirium or convulsions, followed by coma with dilated pupils."

Dr. Longmore, in the London *Lancet*, March, 1859, calls attention to excessive irritability of the bladder as a symptom preceding attacks of sunstroke.

Dr. Bonnyman (loc. cit.) says: "Where premonitory symptoms show themselves, they are sometimes well-marked. Those usually observed are—inaptitude and disinclination for any exertion, drowsiness, or a desire to sleep, vertigo, headache, and slight confusion of ideas; the patient feels weak, sighing frequently; the appetite is gone, thirst is increased, and the bowels are constipated; the symptoms become aggravated, and the patient either passes into the stage of profound coma, or symptoms of the first or progressive form of the malady are complained of, viz., distressing headache, with a feeling of weight and heat in the occiput, tightness, distension and throbbing in the forehead and temples, anxiety at the præcordia, nausea, and a disposition to vomit. A sensation of sinking or of insupportable weight, or uneasiness, is referred to the pit of the stomach,

and a feeling of horror or of impending calamity, with a tendency to weep, is experienced. The breathing is natural, or slow and sighing. The face is generally natural or somewhat flushed, eyes bright, pupils either natural or somewhat contracted. The skin is very hot and dry; the pulse is full and accelerated; tongue white; thirst intense; bowels confined; the *urine suppressed*. If these symptoms persist, tetanic convulsions suddenly appear, and the patient lapses into the second or severe form of the disease."

Dr. Wood states that in his experience symptoms have been very constant. "Total insensibility was always present, with, in rare instances, delirium of the talkative form, and still more rarely the capability of being roused by shaking or shouting. The breathing was always affected, sometimes deep and labored, often stertorous, and not rarely accompanied by the rattle of mucus in the trachea. The face was often suffused, sometimes with the whole surface deeply cyanosed. The conjunctiva was often injected, the pupils various, sometimes dilated, sometimes nearly normal, sometimes contracted. The skin was always intensely hot, and generally, but not always, dry; when not dry, it was bathed in a profuse perspiration. The intense burning heat of the skin, both as felt by the hand and measured by the thermometer, was one of the most marked features of the cases. The degree of heat reached during life was, in my cases, mostly 108–109° Fahr. The pulse was always exceedingly rapid, and early in the disease often not wanting in force and volume; later it became irregular, intermittent, and thready. The motor nervous system was profoundly affected: *subsultus tendinum* was a very common symptom; great restlessness was also very often present, and sometimes partial spasms or even violent general convulsions. The latter were at times epileptiform, occurring spontaneously, or they were tetanoid and excited by the slightest irritation. Sometimes the spinal cord appeared to be paralyzed, the patient absolutely not moving."

Dr. Barclay also notes this difference in cases in regard to the motor apparatus. He says (p. 364): "In a large proportion of cases, from the commencement of the attack till its termination in death the patient never moved a limb, or even an eyelid. A comparatively small number of cases, however, were from the first attended with convulsions. These generally began in the upper extremities, and in some cases they did not extend farther,

the patient either becoming rapidly insensible or recovering; but in other instances they extended to the whole of the voluntary muscles, and were of the most violent description, ceasing frequently for from two to fifteen or twenty minutes, and recurring again with increased severity."

Dr. Wood calls attention to a symptom which he states has pretty much escaped the attention of authors, viz., the peculiar odor. This odor was most marked in patients who had involuntary passages, but was very distinct from any fœcal odor. The stools emitted it very strongly, but so did the skin and breath. It was so distinctive as to render possible the recognition of a case by the sense of smell alone. The discharges from the bowels were liquid and very often involuntary. None of the cases passed urine whilst under observation.

Dr. Barclay states that in his cases the eyes were fixed and slightly turned upwards, becoming more and more glassy, as if from the formation of a film over the cornea; the pupils greatly contracted, the conjunctiva pinky, the color gradually becoming deeper, the congestion at first being deep-seated. The face was invariably pale, never in any instance bloated or flushed, as has been described by others. The heart's action was very rapid and sharp, the impulse and the pulsations in the carotid being very perceptible to the eye from a considerable distance.

To sum up, it seems that all the minor symptoms vary, but the important and ever present symptoms are intense fever, with great disturbance of the cephalic and spinous nervous systems, the disturbance being manifested in the form of insensibility, with or without delirium, and with restlessness, convulsions, or paralysis of the motor tract.

Judging from the limited number of cases that have come under my observation, the evidences of asphyxia have occurred some time before death, and at the same time there was also marked failure of the heart's action, so that the immediate cause of death was not only due to failure of respiration but also of the heart's action.

Dr. Morehead has divided insolation into three varieties—the cardiac, the cerebro-spinal, and the mixed. "In the cardiac variety, although it is probable that the sufferer is himself conscious of some premonitory symptoms, there is seldom time for their full development, so as to attract the attention of bystanders before the patient falls, gasps, and in some cases expires before

there is time to do much or anything for his recovery, death taking place by syncope."

Dr. Wood states that of this variety he has never seen an instance. For my own part, I do not see much practical value to be derived from so much over-refinement, and I very much doubt if there is anything to be gained by such a separation, for the heart certainly must suffer in all cases of coup de soleil.

It seems that the majority of deaths from sunstroke are induced by asphyxia, especially when it comes on quickly but not instantaneously. A few days ago, in a conversation with Dr. Bennett Dowler upon the subject of sunstroke, he referred me to the *N. Y. Medical Gazette* of 1842, in which he says: "The cause of death begins, continues, and ends in the breathing apparatus * * After the death of the lungs or the cessation of the respiration, the heart and arteries will, in some instances, continue to act."

In the London *Lancet* for May, 1859, Dr. Pirrie says: "The symptoms are distinctly those of that mode of dying in which the disease commences at the lungs." Dr. Crawford (loc. cit) goes further, believing even the coma to be secondary upon the asphyxia.

It thus seems that death in very many of the rapidly fatal cases, occurs from paralysis of the respiratory centres by the excessive heat or other causes.

There is an affection of frequent occurrence in India, but I very much doubt if it exists in this country—it goes by the name of *ardent continued fever;* it seems to be a variety of insolation, as it arises from the same cause, and presents a similar but less violent array of symptoms, and often passes into the fully formed coup de soleil. Although mental excitement, intemperance, etc., are often factors of importance in the production of this disease, an elevated temperature seems to be the necessary condition.

Dr. Wood states that very often insolation is preceded by an acute ephemeral fever, and that this fever is caused by exposure to heat, and may exist with or without inducing the symptoms ordinarily known as sunstroke: the difference between the affections is therefore simply one of degree, not of kind.

PATHOLOGY.

In post-mortem examinations upon patients who have died

from sunstroke, it is stated that nothing of a positive appearance is found. All authors agree in stating that the right heart and the pulmonary arteries, with their branches, are gorged with dark fluid blood; the lungs not only seem to suffer from renous congestion, but the whole body also. The blood, as it were, appears to leave the arterial system, and collect in the venous trunks; the arterial coats are often stained red, apparently from the altered hæmatin of the blood.

Wood states that in his autopsies he was astonished to find the heart, especially the left ventricle, rigidly contracted, and he remarks that by some observers, the heart was found soft and flaccid. He asks, "How is this to be reconciled with testimony?" and he answers by stating that the post-mortems by others were made from thirteen to thirty hours after death. As the temperature of the body remains above 100° for hours, it is evident that putrefactive changes, often already entered upon before demise, must go on very rapidly, and that probably even three or four hours would afford sufficient time for the relaxation of commencing decomposition to follow the heart rigidity.

In the *Boston Journal of Medicine*, Vol. X., p. 350, it has been experimentally demonstrated that in animals, rigidity of the heart is found directly after death from excessive heat, but that in a very few hours it disappears.

The blood apparently suffers in the same manner in sunstroke to what it does in low fevers; its coagulability is impaired, but not always destroyed. Generally the blood appears after death as a dark, thin, sometimes grumous fluid, and whose reaction is sometimes acid, and in others feebly alkaline. Dr. Levick asserts that as seen by him, the blood disks under the microscope were shriveled and crenated, showing but a slight tendency to adhere in rouleaux.

Nature.

To enter fully into the discussion of the nature of sunstroke would consume too much of our time, and extend far beyond the limits of this paper. I will content myself by condensing a few remarks of Dr. Wood on this point. For a more thorough knowledge of the subject I would refer the members to the work itself, where will be found some very interesting experiments and observations made upon the lower animals.

It has been shown that the sole efficient, always present, cause of sunstroke is excess of temperature; that whilst circumstances of the degree of moisture in the air, or of the conditions of the patient, as race, acclimatization, temperature, health, and so forth, have great influence, yet they possess such influence only in so far that they render the heat more penetrating or efficient, on the one hand, or the patient less capable of resisting the heat by the natural methods of self-cooling, on the other; that the disease is generally preceded by more or less marked prodromes, and that when fully developed, the symptoms consist simply of intense fever (I should here remark that the highest temperature observed was 113° F.,) with great nervous disturbance, as shown by unconsciousness, paralysis, convulsions, etc., and that in most cases death results from gradual asphyxia, or a simultaneous failure of circulation and respiration; that there are cases whose course is almost like that of lightning-stroke—instant death—the patient suddenly falling forward in a condition of fatal syncope, and that these cases always occur during active exercises; that the most obvious lesions found after death are, a condition of the blood similar to that seen in low fevers, and great rigidity of the heart.

That sunstroke may be produced in animals as readily as in man, either by natural or artificial heat; that the symptoms are similar to those seen in man; that death takes place ordinarily by asphyxia; that after death the characteristic lesions are alteration of the blood and rigidity of the heart, with immediate or quickly appearing post mortem rigidity of the general muscular system; that this rigidity of the heart comes on in most cases after, not before, death, and is a result, not cause, of death; that post-mortem rigidity is dependent upon coagulation of myosin, and that the rigidity of the heart is of similar origin, coagulation of the muscle plasma occurring almost instantaneously at 115° F., a degree almost attained in sunstroke; that when a muscle has been in great activity immediately before death; the myosin coagulates at a much lower temperature, and that heating the brain of a mammal produces sudden insensibility with or without convulsions, at a temperature of 108° F., and death when a temperature of 113° F. is reached; that this effect of the local application of heat is not due to induced congestion, but is the result of the direct action of the heat upon the cerebrum, and that consequently the nerve-centres are as perniciously affected

by high temperature as the muscles are; that the nerve trunks bear a temperature of 125° F. without their conducting power being immediately affected; that whilst the general symptoms induced by heating the brain of a rabbit are very different from those of sunstroke, the nervous symptoms are exactly similar; that the life of the blood is not destroyed by any temperature reached in sunstroke, the amœboid movements of the white blood cells and the absorption power of the red disks not being injured; that the amount of oxygen of the blood is greatly lessened, as the result of gradual asphyxia combined with abnormal consumption of oxygen; that there is no reason for believing that capillary thrombi are common in sunstroke; that there is no specific poison developed in the blood; that the deterioration of the vital fluid is due to the rapid tissue changes induced by the fever, and the more or less complete arrest of excretion; that such deterioration is secondary to the nervous symptoms, not primary; that if the heat be withdrawn before it has produced permanent injury to the nervous system, blood, or other tissues, the convulsions and unconsciousness are immediately relieved, and the animal recovers.

As a postulate from these facts and deductions, I think it follows that the *nature of sunstroke is that of a fever*, or in other words, that *coup de soleil is a fever, not dependent upon blood-poisoning, but upon heat, an ephemeral or irritative fever*, if the term be preferred.

When a man is exposed to heat beyond his powers of resistance, there is a gradual slow rise of temperature, until the stimulus of the heat becomes so intense as to paralyze either the heat-centre or the vaso-motor nerves, as the case may be, and then there is probably a sudden intensifying of the oxidation processes, and a further rise in temperature, preceded, accompanied, or followed by an overwhelming of the cerebrum; in other words, intense fever, with its accompaniments, is developed.

Treatment.

We now come to the final practical question, What is the best method of treating sunstroke? At one time it was quite the fashion to treat this disease by venesection; it being looked upon as the result of rush of blood to the head, the hot skin, quick, often full, hard pulse, suffused face and eyes, the sudden un-

consciousness, the convulsive startings, bleeding seemed the proper thing to do, but the great mortality which followed as a result of this practice soon condemned it as a general practice.

Dr. B. Dowler has sometimes seen bleeding apparently of service; as a general measure he severely condemns it. So early as 1842 he writes: "During the last five years I have been called to see a very considerable number of sunstruck persons, within five or ten minutes after they fell in the streets. Formerly, I used to bleed them, and though the great heat of the body is thereby suddenly diminished, the pulse becoming soft as air, yet by the time the arm is tied up (which is done more for form than for necessity), the patient is suddenly choked, and, to appearances, by a dense tenacious mucus, the breathing not ceasing gradually, as in other diseases, but instantly, the face turning livid, and even its veins, especially upon the forehead, becoming at the moment distended. Bleeding hastens the strangulation, though it is always desired by friends."

In the London *Lancet* of 1859, Surgeon Longmore, of the Indian Army, condemns venesection except in rare cases, and extols cold effusions, with purgative enemata, and mustard plasters along the spine. Pirrie, of the same service, says: "I have been told by many who had ample means of observation, that venesection always seemed to hasten a fatal termination." He commends cold effusions to head and chest, with diligent use of frictions and head to legs and arms.

In the *Madras Quarterly*, October, 1860, p. 330, Crawford says: "I have never seen any advantages derived from venesection in such cases, and I am satisfied that the reverse is often the case. It is worthy of remark, that its strongest advocates admit 'that blood-letting kills, if it does not cure the disease,' and that to deplete with good requires care and discrimination, aided by a calm judgment."

In *Lancet*, January, 1869, Longhurst advises the pouring of cold water freely on the head, and the internal use of croton oil in small quantity, with the liberal administration of stimulants. He mentions three cases, all of which recovered under this treatment. He thinks that the cold water acts by exciting the nervous system, and that in his cases the immediate effects were raising of the pulse, and forcible contraction of the voluntary muscles; but if the douche were continued too long at one time, it was followed by diminution of the volume of the pulse and

marked depression. He condemns venesection. Rubbing the skin with ice has been employed quite largely and been generally approved.

In the Pennsylvania Hospital Reports for 1869, Dr. James H. Hutchinson details a number of cases in which hypodermic injections of morphia were employed. Sixteen were so treated, and all recovered but four. At the same time most of the cases had also the ice treatment, so that the results cannot be attributed solely to the morphia used. The chief indication in the treatment of this affection is the abstraction of heat. An excess of heat is the materies morbi, and as Dr. W. remarks, "if it can be removed before too much harm has been wrought, the patient will assuredly recover." As soon, therefore, as a man falls, he should be carried into the shade with the least possible delay, his clothing removed, and cold effusions over the chest and body practiced. This must not be done timidly or grudgingly, but most freely. In many cases, the best resort will be the neighboring pump. In the hospital, probably a better method of reducing temperature than the cold effusion is to place the patient in the bold bath (50° F.), or rubbing with ice may be practiced, and, as originally suggested by Dr. Parks, enemata of ice-water may be given." The indication is the reduction of temperature: if the means employed do not accomplish this, they do no good.

In Aitken's Practice of Medicine (Vol. II., p. 394), relaxation of the pupil is said to be the first symptom that shows the good of the cold affusions; but as in a great number of cases contraction of the pupil does not occur, the thermometer should be our chief guide as to the effect of the treatment. After consciousness has returned, and the temperature has been reduced, there is occasionally a fresh rise of temperature; this can be kept down by wrapping in wet sheets.

We should not forget that the cold douche, cold bathing, etc., are powerful remedies, and if used too long, are capable of doing harm.

Morphia is most applicable in the convulsive form of the affection; given, say in quarter-grain doses every 4 or 6 hours hypodermically, I would combine with it the sixtieth of a grain of atropine. According to Prof. Binz, morphia has the power of checking tissue changes, and thereby lowering the temperature.

Aitken advises a blister to be applied to the nape of the neck,

the surface having been previously well sponged with acetum lyttæ.

Dr. Maclean says that in India he has saved many lives by giving chloroform. Dr. Barclay found chloroform useful "in the convulsive form of the disease attended with extreme nervous irritability * * in some instances life was saved by the remedy; in all it was prolonged."

Bromide of potassium has been tried in Bellevue Hospital, but the experience is hardly sufficient for any positive conclusions regarding its value as a remedy. In the Division in which this remedy was added in connection with the cold douche, sinapisms, etc., the number of deaths in 17 cases was 4; in the other Division there was 9 deaths in 26 cases.

I have avoided making any statistical comparisons of results of treatment, for the simple reason that it would be worse than useless to do so.

SEQUELÆ.

But little has been written upon this point. Maclean states that the least serious of these after effects "is incapacity for service in India, or any hot climate, without at least a more or less prolonged stay in a cold climate." Persistent headache, very severe and intractable, is spoken of by Maclean as a more serious sequela. (Wood.) Dr. Pepper states that out of twenty cases treated in the Pennsylvania Hospital, three of the ten recoveries resulted in chronic brain diseases, eventuating in insanity. Dr. S. Weir Mitchell has expressed the belief that in many, if not all, of the serious cases, the after-lesion of thermic fever is meningitis.

Wood says: "There can be no doubt that in many cases of sunstroke, after the subsidence of the original disease, there is manifested a marked tendency towards the development of inflammation of the meninges of the brain; and Bonnyman (*Edinburgh Medical Journal*, 1864) speaks of reaction sometimes setting in strongly, and requiring the application of leeches to the temples."

Wood also says: "There is often, however, after *coup de soleil*, a condition of simply deranged innervation, with headache, dyspepsia, etc., in which there is no sufficient reason to believe that actual inflammation of the meninges exists. Such cases are

readily distinguished by the headache being irregular and shifting, sometimes absent, sometimes present, sometimes frontal, sometimes occipital, etc."

Treatment.

First and most important among them, is the avoidance of exposure to heat; and Maclean says: "When the pain is fixed and severe, long-continued counter irritation to the nape and a long course of iodide of potassium sometimes permanently relieves." Dr. Maclean lays stress upon the necessity of attending to the functions of the skin, which he states always to be profoundly perverted.

NOTE ON A CASE OF SPONTANEOUS OR NATURAL VERSION BY THE PELVIS, UNDER CONDITIONS IN WHICH IT SEEMED IMPOSSIBLE.

BY Dr. J. C. FAGET.

"Medicus, naturæ minister et interpres, quicquid, meditetur et faciat, si naturæ non obtemperat, naturæ non imperat."—*First thought in the works of Baglivi.*

On the 9th of March, 1876, Dr. Bezou was called to a robust woman, aged 42, a native of Gascony, who had been for over two days in labor, although it was her fifth confinement, but who was within two or three weeks of full term. The amniotic fluid had escaped from the beginning, and the arm of the child was hanging out. A midwife had charge of the case so far, and maintained that she had in no way interfered, that this arm had dropped there of itself. But the enormous swelling of the arm, and a *fracture of the humerus*, bore strong evidence to the contrary. Under such circumstances our confrère thought advisable to call some one to share his responsibilities, and I was sent for.

I proceeded to a thorough examination at once, in order to ascertain the position of the fœtus. The woman was placed across the bed, and under full influence of chloroform. I introduced easily one hand into the uterus, behind the fœtus, in the direction of the concavity of sacrum, whilst the other was applied over the abdomen. I thus recognized that the back was behind, and the head in the right iliac fossa. In fact it was the right

shoulder that occupied the inferior pelvis, but not alone: a portion of the thorax, as proved by the ribs which could be felt distinctly, also entered into the composition of this complex mass, forming a cone with its base upward. This confused mass was deeply engaged and impacted in the inferior pelvis.

I had to withdraw my hand after a few minutes, owing to the powerful uterine contractions; but I had arrived at the knowledge of the position, which was my main object; I remained also convinced that ergot had been given, although positively denied by the midwife.

Dr. Bezou also came to the same conclusions. He thought for a moment that he felt a foot; but he had to withdraw his hand on account of the violent contractions of the womb, although chloroform had been continued in such full doses that *all the voluntary muscles were in complete resolution.*

The inferior extremity of the fœtus being on the left (*right cephalic iliac, abdomino-anterior*), I had the woman turned on her left side, and, placing myself behind her, I introduced my right hand, directing it anteriorly and, as much as possible, towards the left iliac fossa. But I found it entirely impossible to bring my hand in front of the fœtus, probably because its abdomen was somewhat pendulous. I had to turn my right hand over and slide it along the back of the fœtus, in order to proceed and reach the pelvis. Having thus some purchase on the inferior extremity of the fœtus, I had the woman turned on her back, so as to try to act at the same time and inversely over the superior, or scapular extremity of the fœtal trunk, with my left hand. I wished to apply in this particular case the *bipolar* version, so well described by Prof. Barnes, of London. I brought together my left index and median fingers, and firmly applied them in the right axilla of the fœtus; but I tried in vain, either simultaneously or successively, to move in an inverse direction one or the other extremity of the lever represented by the fœtal ovoid; nothing moved.

We then—Dr. Bezou and myself—stepped into the adjoining room to consult over the case, and came to the conclusion that our duty compelled us to interfere, and not to leave the delivery of the woman to the efforts of nature only.

The fœtus had certainly been dead for several hours, and we thought decapitation had to be resorted to; but previous to pro-

ceeding to the operation we determined to make another examination.

But nature had not been at rest. The arm was no more to be seen, and the breech was making its way through the vulva. I had only to support, and the work was done with wonderful ease. So that nature, left to itself during the fifteen minutes of our deliberation, had operated turning, which art with hours of energetic intervention had failed to accomplish.

Yet Barnes says, at page 155: "Spontaneous version is not likely to take place, when the shoulder has been driven down in a point, *with a part of the chest-wall, low in the pelvis*, and the uterus is strongly grasping the fœtus in every part." Such, however, were the precise conditions of our case. Therefore we we were fully authorized to behave as we did, and in resorting to the bipolar method we believe that we have been faithful to the Hippocratic precept so elegantly expressed in the sentence of Baglivi inscribed at the commencement of this article—"Medicus, si naturæ non obtemperat, naturæ non imperat." And Barnes says very well, at page 155: "We shall be the better ministers of nature in her difficulties as we are the better and humbler interpreters of her ways." (*Natura enim non nisi parendo vincitur.*)

Let it be what it may, and so docile as we have been on this occasion in following the ways of nature, we had no intimation of any kind that it would yield to our wishes and efforts: *nothing moved*, as I said before. Therefore, however happy we should be to think that we have not been entirely useless in starting an imperceptible motion in the fætal axis which became sufficient to help nature in accomplishing version, we dare not flatter ourselves of it.

It rather seems to us that the most impartial explanation is to regard the above case as one of those facts *so rare that they have been denied*, in which nature has succeeded when art has been powerless—as a case of spontaneous version in conditions in which it had appeared impossible, and as a fact to be added to those reported formerly by Denman, which many had refused to admit.

But, as Barnes asks, at page 126, "Shall we reject the testimony of Denman? Whose, then, shall we accept in contradiction? Shall it be the testimony of those who deny that Denman saw what he says he saw, because they themselves have never

seen it? This is simply to give preference to negative over positive evidence. * * * Let us first call Denman into the box He says: "In some cases the shoulder is so far advanced into the pelvis, and the action of the uterus is at the same time so strong, that it is impossible to raise or move the child. * * * In a case of this kind, I was so fortunate as to observe, though it was not in my power to pass my hand into the uterus * * that, by the mere effect of the action of the uterus, an evolution took place, and the child was expelled by the breech" * * *

The lochia in our case were normal, and not the slightest inflammatory accident occurred. But through neglect on the part of our patient, and also on account of her bad lodging, in which she was exposed to draughts of air, she caught cold, and a few days afterwards we found her with pleuro-pneumonia, of which she got right well in spite of her carelessness.

I am reminded by the fact I have related of the saying of an eccentric old uncle of mine, the late Dr. Caillard, senior, formerly House-Surgeon at the Hôtel Dieu, of Paris, who, for fifty years, never failed to witness whatever occurred of any importance in the hospital, and who had thus gained so much experience. He used to say that the "whole art of accouchement could be written on his thumb nail," and when asked how it could be so resumed, he would answer, "Savoir attendre" (Learn to wait).

This is surely an exaggeration, and my conduct in the above case shows that I fully think so. But how many accoucheurs ought to meditate over Dr. Caillard's words, and if they would put his precepts into practice, how often they would recognize that "expectation" is often the wisest course to follow, even sometimes when intervention seems to suggest itself.

POISONING BY AN OVER-DOSE OF CHLORAL—RECOVERY.

BY J. E. HALBERT, M.D.,

Of Leota Landing, Mississippi.

On September 9th, at 10.30 p. m., I was called to see Dr. ——, who, the messenger stated, had taken an over-dose of chloral while under the influence of alcohol.

I arrived shortly after, and found that twenty minutes before, 140 grains had been taken, and a few minutes after, the contents

of an ounce bottle two-thirds full (one ounce and a half had been packed into the bottle).

The patient was in a state of complete anæsthesia, with flushed face, rapid and stertorous breathing, no pulse perceptible at wrist, and heart irregular and feeble; pupils irregular, mouth filled with frothy mucus; breath smelled strongly of chloral. No stomach pump at hand, I ordered xx grs. sulph. zinc., which was not taken, as deglutition was impossible. I then gave 2 oz. of whiskey and ½ʒ of spts. am. by enema; applied sinapisms to spine and chest, with warmth to feet, and kept patient on his side to prevent closure of glottis by the tongue—so complete was the anæsthesia.

In two hours, the condition being about the same, the enema was repeated. At one, Dr. Allen arrived, and advised a continuance of same treatment.

At 3 a. m. patient was better, but face cyanotic.

With the concurrence of my friend Dr. A., I gave 1 50th gr. of atropia with 1 ʒ whiskey hypodermically; in thirty minutes pulse slightly perceptible at wrist; the body warm, though covered with profuse perspiration; pupils slightly contracted, and stationary; face more natural. Temperature at one, 100½° F.; respiration 36. 3 a. m.—Temperature 100° F.; respiration 40. 6 a. m.—Temperature 102½° F.; respiration 56; pulse more volume; pupils slightly contracted and inactive. Atropia and whiskey repeated. 9½ a. m.—Pulse 151 and irregular; temperature 104; respiration 58; perspiration less than at any other time. Atropine and whiskey repeated. 11 a. m.—Pulse irregular at 138, more volume; temperature 102½; respiration 50; slight movement of one arm, first that has been noticed. Treatment discontinued, except to keep patient warm.

2 p. m.—Restless; temperature 103½; respiration 48. 3 p. m.—Patient swallowed some water and beef-tea, which were allowed every hour or two. 11 p. m.—Extremely restless; passed catheter and drew off nearly a pint of urine, and gave potas. brom. xv grs., tr. valerian, am. 1 ʒ, whiskey ssʒ, which produced pleasant sleep until 6 a. m., when the pulse was found feeble and extremities cool. Whiskey and am. were allowed every hour. 10 a. m.—Surface warm; pulse improved. From this time the temperature began to fall, and at 2 p. m. consciousness was complete. An occasional dose of potas. brom, and val. were

allowed as required, and plenty of ice and beef-tea given *pro re nata.*

In the evening the patient was able to sit up, and had no further trouble except slight diarrhœa for a few days.

REMARKS.

I consider the above case worthy of publication on account of the large amount of chloral taken, which must have exceeded 400 grains, and the recovery from a condition extremely critical.

I am not aware that atropia has been used in cases of poisoning by this drug; and while I do not claim any antidotal properties for it, I consider it one of our great auxiliaries in this as in other cases of feeble and irregular action of the heart so characteristic of poisoning by this drug.

Recently it has been used in sun-stroke (*N. Y. Med. Journal*), also in surgical shock (*N. O. Med. and Surg. Journal*). In a letter from Prof. J. B. Biddle, of Jefferson Medical College, it is stated that recovery has taken place after 460 grains of chloral had been taken, and that he has used the extract of belladonna in a case. In the last edition of his work on Materia Medica, it is stated that the same treatment applies to this as in cases of poisoning by opium, which had escaped my notice until recently.

TEST TRIALS OF VARIOUS REMEDIES IN THE WARDS OF THE CHARITY HOSPITAL.

BY S. M. BEMISS, M.D.

Sulphate of Cinchonidia.—During the past winter I made a very full and satisfactory test of the value of sulphate of cinchonidia as an antiperiodic. Ten ounces of this drug were expressed to me by the manufacturers, Powers and Weightman, of Philadelphia, for the accomplishment of the above purpose. The autumn and winter afforded the usual large proportion of malarial cases in my wards, and thus gave me an excellent opportunity to employ counter-agents to that poison. Of more than four hundred patients treated during this period, nearly one-half (178 cases) were diagnosed as intermittent or remittent

fever, or as malarial cachexia. In the exhibition of the sulphate of cinchonidia to these patients, no further selection was made than to restrict its use to those cases whose symptoms were not so grave as to demand the induction of cinchonism at the earliest possible moment. While my success in the use of the drug was so uniform as to suggest a belief that it might have proved as efficacious as the salts of quinia, in grave or pernicious forms of malarial fever, I yielded to those conscientious scruples which impel the physician to meet symptoms threatening immediate danger, with the most potent remedies at his command. In all other respects, the sulphate of cinchonidia was given in doses very little above those of the salts of quinia, at the same intervals and in similar combinations. A very common prescription for an early effect in breaking paroxysms of intermittent was sulph. cinchonid. ʒss. pul. opium gr. i; make ten pills, S., two every second hour. In very obstinately recurring intermittents, its combination with guiaic and ferrocyanate of iron, in the place of the quinine in that old and energetic prescription, seemed to serve an equally valuable curative purpose. Again, in inveterate cases, or in malarial neuralgias, it was often given in combination with iron and arsenic: ℞—Reduced iron and sulphate cinchonidia, aa ʒss, arsenious acid gr. i. Make fifteen pills: one thrice daily.

The following conclusion is justified in regard to the value of sulphate of cinchonidia: that it is an economical and entirely reliable substitute for quinine in all forms of disease in which the antiperiodic effects of quinine are indicated. In cases of pneumonia, or other acute inflammations complicated by malarial intoxication, I generally preferred to use the "House Solution" of quinine, but I have no reason to assert that sulphate of cinchonidia may not be valuable for its apyretic action.

Scheffer's Saccharated Pepsin.—This is the only preparation of pepsin from which I have obtained any uniform therapeutic action. It was given after meals, dissolved in infusion of gentian with hydrochloric acid, and occasionally small doses of tinct. nux vomica added to the mixture.

Valentine's Meat Juice.—During the latter part of the winter, the manufacturers sent me a dozen bottles of this preparation. More than half of this supply was used in the wards of Charity

Hospital. It is undoubtedly the very best of all the various concentrated meat foods which have been furnished the profession. It was given with especial benefit to cases of typhoid fever, yellow fever, chronic diarrhœa and dysentery, pulmonary phthisis, and to patients in the third stage of pneumonia. In private practice, I have found it invaluable in all forms of disease—adult or infantile—which require forced alimentation.

Nutritive Elixir.—This preparation was given me for trial, by I. L. Lyons, the well-known druggist of this city. The objects in view in making this preparation were to afford those who required concentrated meat extracts, a substitute for Ducro's Elixir of Beef. It is claimed for the substitute that while it is equally efficient as a nutritive agent, it is more economical as it respects the relation of cost and quantity. A number of trials of this preparation enables me to affirm that it is a most admirable dietetic in all cases in which the combination of animal food and alcohol is desirable. The nutritive "Elixir is a combination of Liebig's extract of beef, French Brandy, and the extract of fresh bitter orange peel."

Koumiss.—This preparation was kindly sent to me by the above mentioned druggist, and was also furnished by Dr. Grubé, whose note is herewith published. The trials with it were too few in number to justify an expression of opinion respecting its merits.

NOTE ON KOUMISS, BY A. R. GRUBE, M.D.

At the present time, when science scrutinizes dietetic remedies for their therapeutical value, the physician is obliged to direct his attention to the mode of living of those semi-civilised races for whom chance has selected a diet which manifests its effects by their remarkably robust constitutions. The Tartar, after passing through all the privations which only a Russian winter can inflict upon a badly clothed and fed people, turns out into the steppes with the earliest sign of awakening vegetation, and in a few months reëstablishes his health and strength by partaking freely of what is to him meat and bread—the fermented milk of his mares, usually spoken of as "Koumiss." Strange to say, mares, or by some, Tartar mares' milk, has for a

long time been supposed absolutely necessary for the production of koumiss, an assertion which has, however, been conclusively proved to be erroneous, as the milk from other animals, the cow more especially, has yielded a product almost identical in chemical composition, and what is more important, in its physiological effect upon the human system. From what we can learn respecting the manufacture of Koumiss among the inventors, the process is very simple. As cleanliness does not range among the virtues of the race, their receptacles for milk, consisting of pouches made from the raw skins of the sheep or goat, are never freed from a certain amount of curd which must necessarily collect in them after a very short use, and fresh milk sours in them very rapidly. The bag accompanies the owner on his horse's back, and in the continual movement an actual separation of the casein from the cream is prevented. Within from 12-24 hours a vinous fermentation is set up, which lasts, under favorable circumstances, for about 48 hours, and during which the sugar of milk is resolved into lactic acid, carbonic acid, and alcohol. The koumiss, when now drawn off, appears as a foaming, homogeneous mass, rich in carbonic acid, and containing nearly 2 per cent. alcohol. V. A. Jagislski, M.D., of Berlin, in a paper on the Use of Koumiss as a Medicine, in the *British Medical Journal*, speaking of milk, confirms the experience of all those who had ever attempted the enforcement of milk diet, by stating that, although milk of animals holds the highest place among dietetic remedies, because in its composition it comprises all the nutritive requirements of the body, yet disease has oftentimes so enfeebled the digestive power, that it cannot be assimilated in sufficient quantity to maintain healthy life. Fortunately, fermentation will change milk in such a manner as to enable it to effect healthy nutrition by overcoming the pathological obstacle.

In regard to the value of koumiss as a medicine, or more correctly, perhaps, as an article of nourishment in the treatment of consumption, albuminuria, diabetes, and all diseases depending upon defective nutrition, we need only look towards Europe for the most flattering testimonials as to its efficacy, from those who have had an opportunity of giving it a fair trial. Dr. Stahlberg, to whom the credit is due for having been principally instrumental in introducing the new remedy into general use, established Koumiss Institutions for the treatment of chest-diseases,

successively at Moscow, Petersburg, and Vienna, the undertaking being each time crowned with eminent success. The koumiss cure has since met the general approbation of the medical profession throughout the European continent. To insure anything like success, it is of course necessary to persist in its use, not only for a sufficient length of time, but also to give it in ample quantities. In prescribing it, it is well to begin with a small quantity, say a pint a day, of which 2 or 3 tablespoonfuls should be given at a dose, and after the stomach has become accustomed to it, the quantity increased until 3 or 4, or more pints are consumed in a day. It is well to abstain during treatment from fruits of all kinds.

Up to this time, the profession here has been practically debarred from the use of the remedy, principally on account of the high price of imported koumiss and the difficulty with which it could be obtained fresh and in sufficient quantity. Lately a so-called Extract of Koumiss has been exhibited in the market, which, however, taking its extraordinary high price in consideration, is only calculated to retard the general introduction of that important remedy. The main indication for the encouragement of its use is, a reliable article which can be prepared at such a cost as to bring it within the reach of everybody. After several unsuccessful attempts to supply this want, I revive here a process original with Dr. Townsend, of Cork, which furnishes an excellent product at a nominal cost. Take one quart of new milk, a cupful of sour milk, and half an ounce of white sugar. Mix all together, from jug to jug, till the sugar is quite dissolved. Put in a warm place to stand for ten hours, by which time it will be quite thick. Pour it again from jug to jug until it is smooth. Bottle in soda water or champagne bottles, and allow to remain in a warm place for from 36–48 hours. Use the best corks; tie them down; shake the bottle well for 5 or 6 minutes before it is opened. It will have whey at the bottom when it is fit for use. Its fermentation is a test for its excellence.

Mr. C. H. Roemfelr, druggist of this city, has for some time adopted this process for the preparation of koumiss, and finds it by far superior to that prepared from the so-called extract.

Koumiss prepared in the given manner is very nourishing, as it contains all the nitrogenous elements of milk and a desirable amount of alcohol, which may, however, be increased by keeping

it bottled for a day longer, or even until the whole of the saccharine ingredients have undergone vinous fermentation. It must be borne in mind, however, that an increase in the amount of alcohol commands a proportionate production of lactic acid, and may on this account be objectionable. A preparation said to resemble mare's koumiss very closely is made by diluting the milk with about half its quantity of whey; in this way all the alcohol-producing ingredients are retained, and the casein diminished by one-half. Indeed, the manufacture of koumiss admits of numerous modifications, and various strengths may be made by simply keeping it either for only one, or two, or three, or even four or five days, and also by practicing the addition of differing proportions of whey.

With the given direction, it is to be hoped that the remedy will soon find its way into the houses of many who, for pecuniary reasons, were deprived of its benefit.

Iodide Potash in Compound Syrup of the Phosphates.—This combination was suggested on account of its convenience of preparation, rather than for any superior therapeutical value theoretically imputed to it. It is one of the hospital mixtures, and being always at hand, I determined to try if the addition of iodide potash would not increase its therapeutic value. In truth I must declare that in regard to the latter point, the instances have been few indeed in which I could claim positive advantage from the administration of the "chemical food" alone. In a number of cases of rheumatism, associated with anæmic states, or in chronic diseases complicated by the syphilitic constitution, or in pulmonary phthisis, where an analeptic and alterative treatment was considered proper, the following prescription was generally followed by improved conditions of the patients treated:

℞—Comp. syrup of phosphates: pure water, aa ℥ij,
Iodide potash, - - - ℈iv to ʒvj.
Desert-spoonful at meals.

In cases where the syphilitic diathesis required mercurial alteratives, one grain of bichloride of mercury was added to the formula, and the same dose given. Little or no deposit occurs in these solutions, and I have come to regard them as possessing decided curative value.

CURRENT MEDICAL LITERATURE.

SURGERY.

[Compiled by SAMUEL LOGAN, M.D., Professor of Anatomy and Clinical Surgery Medical Department, University of Louisiana.]

REMOVAL OF PART OF CATHETER FROM THE BLADDER.

Dr. Stimpson presented to the New York Pathological Society, Nov 24, 1875, a portion of an elastic catheter which he had removed from a patient under the following circumstances: The patient was a German of middle age, who suffered from paraplegia, with incontinence of fœces and urine, resulting from an injury received from being run over by a wagon. The patient purchased a cheap catheter, and, while in the act of passing it, broke it, and left eight inches in the bladder and urethra. In the attempt to remove the fragment it was pushed completely into the bladder. When he came under the notice of Dr. Stimpson the prepuce was tied up with a string, like the neck of a sack, to prevent the dribbling away of the urine, and although considerable œdema resulted from this primitive method, the patient did not complain of much pain. Dr. Willard Parker removed a portion of it with a lithotrite, and eight days afterward Dr. Stimpson repeated the operation and removed the remainder. No cystitis resulted from either of these operations, and after the removal of the catheter the incontinence was so far improved that he was enabled to hold his water for six hours. A peculiarity of the case was, that the urethra was exceedingly flabby, and markedly insensible to any irritation.—*New York Medical Journal.*

EXTIRPATION OF NÆVI FOLLOWED BY THE GROWTH OF MALIGNANT TUMORS.

(*Centralblatt für die Med. Wissenschaften*, N. 44, 1875).—F. Durante (*Arch. di Chirurgia pratica, etc.*, 1874) gives an account of the following three cases of extirpation of nævi materni, followed by the growth of tumors of a malignant character, which were observed by himself.

1. A red nævus of the size of a pea was extirpated from the back of the hand of a girl aged eight months, and upon examination with the microscope was found to consist of cavernous epithelial tissue. The wound healed, but one month after the operation a pigmented, spindle-cell sarcoma of extraordinarily rapid growth appeared in the cicatrix, which was also removed. Two months later the child died, and metastatic tumors were found in the lungs.

2. A dermoid cyst of the size of a pigeon's egg was removed from the left thigh of a man aged forty-seven years. On the periphery of this tumor there was a nævus of the size of a pea, which was removed by the same incision, but, as the microscope proved, not completely. An induration was soon noticed in the cicatrix, and a second more thorough extirpation was performed twenty-five days after the first. A microscopic examination then showed that a giant-cell sarcoma had begun to develop itself in the scar.

3. A small angioma of the under eyelid was removed from a child aged two months, and eight months later a giant-cell sarcoma of the size of a hen's egg, which had appeared at the same point, was successfully removed.—W. A., in *Medical Times.*

AN UNSUSPECTED PISTOL BALL IN THE HEART FOR THREE WEEKS.

M. Tillaux presented the heart of a woman who had received two balls from a pistol Oct. 7th; the balls measuring 7 centmtr. One lodged in the diaphragmatic pleura, and caused abscess of the liver. The other traversed the lung and penetrated the left ventricle through its posterior wall. It was found lying in the cavity of the ventricle.

There was no sign of heart lesion in life. The track of the ball could scarcely be traced, so rapid had been the cicatrisation. It was really only by accident that Tillaux discovered the second ball, and if he had not received information that there were two balls he would not have looked for it.—*Le Mouvement Medical*, November 27th, 1875.

FOREIGN BODY IN THE BRAIN.

(*Centralblatt für die Med. Wissenschaften*, No. 43, 1875; from *Archiv. der Heilk.*, 1875).—In the brain of a man aged 42, who for a year before his death had suffered from some mental disturbance consequent upon an injury to the head, there was found, after death, a piece of lead pencil some three inches in length. This lay in the white brain-tissue just beneath the posterior and inferior bones, and did not seem to have caused any marked anatomical changes. No evidence of any perforation of the skull could be found, and the membranes of the brain and the scalp were intact. Certain appearances on the occipital bone render it probable that the pencil was introduced in this region in early youth. Although its presence gave rise to no symptoms, it is probable that the foreign body caused certain changes in the brain which predisposed the patient to the fatal

illness which followed so rapidly upon the injury of the head which he received.—W. A., in *Medical Times*.

A CASE OF IRRITABILITY OF THE FEMALE BLADDER OF FIFTEEN YEARS' STANDING CURED BY DILATATION OF THE URETHRA AND NECK OF THE BLADDER.

(*The Lancet*, Dec. 4, 1875).—Mr. H. Bendelack Hewotson reports the case of an unmarried woman, aged 36, whose history at the time of first coming under observation was as follows:

"That she was a perfectly strong and robust woman, following the arduous duties of a 'present day' schoolmistress until fifteen years ago, when she was seized with an inflammation of the bladder, for such it was termed by her medical attendant. This was followed by the formation of a small abscess in the region of the urethra, which discharged of itself. Since that time her health has been bad, preventing the continuance of her calling. She states that since her recovery from this attack her nights have been wakeful and disturbed by being constantly 'every half-hour or hour' obliged to get up to pass small quantities of urine with great effort and some pain. She is low and depressed, with almost constant headache, loss of appetite, and continual bearing down, resulting in a total unfitness for prolonged exertion of any kind. She has lost flesh considerably."

On examination, the orifice of the urethra was found to be completely surrounded by warty growths of a considerable size, and on examining the rectum the introduction of the finger was impeded by a very tight sphincter ani. The rectum was baggy, and there was a small external pile. The uterus was in its natural position, the catamenia were and had always been regular, and the urine was natural. Not being able to estimate to what extent the retention was due to the warty growths, and seeing that she was suffering considerably from rectal difficulties, it was deemed advisable to negative the possibility of the retention being caused by the warty growths by removing them, and, whilst the patient was under the influence of an anæsthetic, stretching the sphincter ani with the forefingers introduced back to back sufficiently forcibly to paralyze it for a time, and allow the sore produced by the snipping off of the pile to heal: in the same way as one would cure a fissure of the anus by setting the spasm of the sphincter ani at rest, which, constantly contracting, might possibly be an element, through reflex action, in helping to keep up the vesical irritability.

Accordingly, on March 5, chloroform having been administered, the above suggestions were completely carried out. The result of this was, that during the next few weeks relief was given to the retention of urine and to the pain in passing the motions; but there was no relief at all from the vesical irritability. Her

general condition, with these exceptions, continued as before, and there was a return of the retention of urine at the end of three weeks from the operation.

She had been clearly told that a second operation would possibly be necessary should the first fail to give relief, and accordingly she was again placed under the influence of chloroform, and Weiss's female dilator was introduced into the urethra to the extent of about two inches, and the blades of the dilator were then slowly separated, stretching the urethra so as to admit of the introduction of the two forefingers within the bladder while the parts were on the stretch. On closing the blades and withdrawing the instrument, the urethra contracted upon the little finger, so as sensibly to grip it when introduced into the bladder, the coats of which were thickened. There was no foreign body or stone to be detected.

There was after this operation no more irritability of the bladder, no retention, no incontinence; she remained perfectly free from all such symptoms, and enjoyed robust health.—*Medical Times.*

SYPHILITIC INFECTION BY THE SEMEN.

In the year 1867, X. contracted six sores upon his glans penis, which he was informed were chancroids, by his surgeon (not the writer). These, he says, were "*readily*" healed, and have left no visible evidence of their existence. Last January he first applied to me for the treatment of a general feeling of malaise, and I at once suspected syphilis, knowing that his habits had been loose; his countenance was of a pale, dirty, yellowish tinge. I put him, however, simply upon a tonic of iron and gentian, and he immediately felt better. In about two weeks a syphilitic eruption began to show beneath the epidermis, and I gave him the mixed treatment, which held the eruption from further development and finally dispelled it, but there followed mucous patches in the mouth, fauces and nasal passages. He is positive that he has not had an abrasion or any disease on the penis since the year 1867; at present he is apparently cured.

As soon as he came under my care, I warned him very particularly about the chances of communicating his disease to his wife, telling him that his semen might infect her. He said he should use every precaution, but he failed to do so on one occasion, and just four weeks subsequently I found her with four chancres upon the labia minora, and, from the pain produced at the internal os by the application of the uterine sound, I judged of the presence there of another chancre. Secondary symptoms followed in her case, with mucous patches of mouth and nares, which have yielded to a mixed treatment. I shall make no comments upon the case; the above are the facts, and the result, I

think, has borne out the diagnosis.—Smith, in *Archives of Dermatology*, January, 1876.

TREATMENT OF THE COMPLICATIONS OF GONORRHŒA.

When *phimosis* is simple, M. Ricord (*La France Médical*, Année 91, No. 90) proceeds as follows: The penis is allowed to resume its natural position without any traction being made upon the skin. A line is then drawn with ink upon the prepuce, about two lines in front of the circular crest of the gland. A needle, the point of which is protected by a small pellet of wax, is carefully introduced between the prepuce and the glans, and made to penetrate the prepuce from within outwards in the middle line and about one-twelfth of an inch in front of the circular line which has been traced. By this means the skin and the mucous membrane are fixed and rendered incapable of gliding over each other. Behind the needle the jaws of the fenestrated forceps are now placed, and the assistant is directed to screw them together lightly, and a bistoury is made to cut its way through the whole of the prepuce, between the needle and the forceps. The latter being removed the small vessels are twisted, and the two borders of the incision are brought into contact with the aid of serresfines. After the operation the patient is directed to lie quiet, and an appropriate diet is ordered. Usually the wound unites by the first contraction, and recovery without deformity is complete by the fifteenth day.

Paraphimosis.—In recently and moderately severe cases, reduction should be tried. When, however, it is of old standing, and hard, and when the swelling is considerable, this will fail, and M. Ricord has recourse to the following proceeding: The thick fold of tissue behind the glans is incised in the middle line; a straight bistoury is then passed under the border of the prepuce, and a cut made through it proportionate to the length of the gland; any small bridles that remain must be divided. Two cushions of swollen tissues sometimes remain on either side, which should be removed. Rest and cold applications soon effect a cure.

Vegetations.—Neither mercurial nor iodine treatment is required, but lotions of nitrate of silver may be applied night and morning. After each application the surface should be dried, and covered with a powder composed of equal parts of savin, burnt alum, and peroxide of iron. If this fail we may have recourse to caustic liquids, such as nitric, acetic, hydrochloric, or chromic acid; or especially the fluid acid nitrate of mercury, with which each vegetation should be separately touched. After a few days they dry off, and the little ulcer that is left should be treated as a simple wound. When very large, the vegetation

may be partially removed with the knife or scissors, and the remainder touched with the carbo-sulphuric paste of M. Ricord.—*Practitioner*, October, 1875.—*Monthly Abstract*, December, 1875.

PROBABLY A UNIQUE CASE OF OPERATION FOR STRANGULATED INGUINAL HERNIA, PERFORMED FORTY-FIVE HOURS AFTER BIRTH, FOLLOWED BY RECOVERY OF THE PATIENT AND A RADICAL CURE OF THE RUPTURE.

By Frank Woodbury, M.D.,

Reporter for the Philadelphia County Medical Society.

Through the kindness of Dr. Thomas H. Andrews, Demonstrator of Anatomy at the Jefferson Medical College, the opportunity of seeing the result of a most interesting operation was recently offered, and permission accorded to present a brief account of it to the readers of the *Medical Times*. The operation for the relief of strangulated inguinal hernia by the indirect descent was performed in this instance, perhaps, for the first time on record, upon a patient of such tender age, the infant being less than two days old at the time it was resorted to, after repeated attempts at reduction by taxis and treatment had failed. The case was then in such bad condition that an unfavorable prognosis had been given, and no hopes held out of success.

The subject was the twelfth child of a healthy American woman. The labor was not very difficult, and terminated on the 10th of August, 1874, at five in the afternoon. At birth the child was asphyxiated, and some difficulty was experienced in establishing respiration, but after this it continued to cry and fret, giving the mother the impression that it was in pain; about midnight she noticed a prominence in the right groin, which seemed tender, and then about the size of a small walnut. The next evening Dr. Andrews (who had been prevented by absence from the city from attending the confinement) prescribed an anodyne, his attention not being directed to the swelling. The following morning he discovered a tumor, which had now attained the size of an orange, and which he recognized as a hernia. Taxis was tried ineffectually, and repeated in a couple of hours, after a warm bath and small doses of opium, but with similar unsuccessful result; by this time, however, the swelling was as large as the child's head, and quite tender and discolored. A final attempt at reduction was made at 2 p. m., but in spite of careful manipulation it again failed.

Ether was now administered, and, just forty-five hours after birth, the operation was performed. Upon opening the sac, an indirect inguinal hernia was discovered, which had become strangulated at the internal abdominal ring. The band of tissue

causing the constriction was nicked with a probe-pointed bistoury, opening enlarged with the forefinger, and the gut, which was the purple from the long-continued strangulation, carefully returned to the abdominal cavity with the aid of the forefinger and the ivory handle of an exploring-needle. The tumor contained the greater part of the small intestine from near the duodenum to the lower end of the ileum, but no omentum was found in the sac. The opposite walls of the canal were now brought together by one silk suture, the ends of which were led out of the external wound, which in turn was closed by several stitches, and dressed with oxide of zinc ointment, covered with picked lint. The patient made a rapid recovery, without a single bad symptom, a result as gratifying to the surgeon and parents as it was unexpected. A year has elapsed since the operation, which may now be considered as a final success He is a strong, healthy child, and large for his age; until lately he has constantly worn a truss, but the hernia is now radically cured, and the support no longer needed.

REMARKS.—Glancing over the literature of the subject that is immediately accessible, I find that although congenital scrotal hernia is, according to Gross* of frequent occurrence, there are, relatively, remarkably few cases of strangulation requiring operative interference. Holmes† remarks: "It is extraordinary how rarely hernia in children becomes strangulated. At the Hospital for Sick Children, during the thirteen years of its institution, I cannot learn that an operation has been required; and very few cases of hernia have been admitted in a condition of strangulation." And again, speaking in connection with another hospital, he says:‡ "It occasionally happens, although very rarely, that a congenital inguinal hernia becomes strangulated in infancy so obstinately as to require operation." According to Broca,§ "Les enfants présentent rarement un étranglement véritable. Toutefois, le collet non oblitéré de la tunique vaginale peut recevoir une anse d'intestin et l'étrangler. M. Goyrand a observé cet accident sur un enfant de quatre mois. Il paraît même que M. Hayfelder l'a vu sur un enfant de huit jours." In this opinion Gross|| concurs: "It is not often that a congenital scrotal hernia becomes irreducible, and it is still more rare to see it strangulated." Bryant¶ found that out of ninety-eight cases of inguinal hernia, that had existed for years previous to this accident, seven had been congenital in their origin.

This considered, it is, perhaps, not surprising that so few cases

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* Gross's System of Surgery, vol. ii., p. 610, Fifth Edition, Philadelphia, 1872.

† Holmes' Surgical Treatment of Children's Diseases, p. 567, London, 1868.

‡ Vide article by Holmes in St. George's Hospital Reports for 1867.

§ Broca, De l'Etranglement dans les Hernies abdominales, Second Edition, Paris, 1857.

|| Loc. cit.

¶ Bryant, Guy's Hospital Reports, vol. ii., N. S.

requiring surgical aid can be found reported. Erichsen* states that "Operations for strangulated inguinal hernia are required during a greater range of cases than those for any other kind of protrusion. I have operated successfully for congenital hernia in infants less than six weeks old, and for an ordinary oblique inguinal hernia, in one four months of age. Dr. Cheever† reports a case of recovery in his private practice after operation for strangulated hernia in an infant of eleven weeks. Holmes was less fortunate, for out of two hundred cases, occurring at St. George's Hospital, and analyzed in the paper before referred to, "four operations were performed in infancy, all under the age of seven months, . . . three of whom died." Returning to Gross‡ the statement is found that "Age is no bar to the success of an operation for strangulated hernia. It has often been performed upon very old persons, and, on the other hand, cases have been reported in which it was performed upon very young children. Thus, Curling has recorded an instance of twenty-one months, Raynor of seven weeks, and Fergusson of seventeen days. . . . In the cases observed by Curling and Raynor, the suctess was most gratifying. Of forty eight cases of strangulated hernia, nearly all of the inguinal variety, during the first and second years of infancy, collected in 1868, by Dr. E. W. Wimer, twenty-six were operated on with a loss of eight, eighteen were reduced by taxis with three deaths, and three were treated therapeutically with one fatal issue."

Without needlessly multiplying names, it may not prove uninteresting, in connection with this subject, to mention, in closing, the only case quoted by Dr. Paul F. Eve§ of early operation, upon, however, a different form of hernia. "W. M. Fairbrother, in the London *Lancet* for 1850, reported a remarkable instance of congenital rupture in which about twenty-eight inches of the small intestine were strangulated at the umbilicus, and had evidently been so for many (?) days, as they were dark and discolored. The doctor operated at the next visit by making a median incision and restoring the bowel, but the patient died the same evening.—*Medical Times.*

A USEFUL METHOD OF EXCISION OF THE ELBOW-JOINT.

(*The Lancet*, November 13, 1875).—Mr. C. F. Maunder calls attention to his method of excision of the elbow-joint, by means of which he claims that active extension by the triceps may certainly be obtained. Briefly put, his object is arrived at by avoiding all transverse section of the soft parts lying between the

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* Erichsen's Science and Art of Surgery, Am. Edition. Edited by John Ashhurst, Philadelphia, 1869.

† Medical and Surgical Reports of the Boston City Hospital for 1870.

‡ Gross, op. cit., p. 640.

§ Eve's Collection of Remarkable cases in Surgery, Philadelphia, 1857.

point of the olecranon and the external condyle of the humerus. In this way the continuity of muscular and aponeurotic structures passing from the arm to the forearm is not destroyed. He relates some very successful cases operated on in this manner.—*Medical times.*

THE TREATMENT OF VARICOCELE AND OF AN IRRITABLE CONDITION OF THE GENITAL APPARATUS BY COMPRESSION.

(Centralblatt für Chirurgie, No. 41, 1875).—Ravoth attaches much importance to this method of treatment, and relates cases of extensive variocele complicated with frequent seminal emissions, sometimes with and sometimes without priapism, which were quickly ameliorated or cured. After the proper application of a truss, the varicoceles quickly decreased in size, the attendant neuralgia disappeared, the inclination to masturbate vanished, and, in several cases, commenced atrophy of the testicle was arrested. Among the results of this treatment the writer mentions acceleration of the circulation, increase of the tonicity of the veins and the cremaster, and the prevention of the venous congestion.—J. W. W., in *Medical Times.*

SYPHILITIC INFECTION IN A WORKROOM.

(Centralblatt für Chirurgie, No. 41, 1875).—Poray-Koschitz reports an instance of the infection of a number of workmen with syphilis through the common employment of a ball of yarn, the threads of which were drawn through the mouth and bitten off. Of those working in the same room, and using this thread, but few escaped.—J. W. W., in *Medical Times.*

PRACTICAL MEDICINE.

BY S. M. BEMISS, M D.,

Professor of Theory and Practice of Medicine, and Clinical Medicine, University of Louisiana.

ON MORPHIOMANIA.

By Dr. Edward Levinstein,

Principal Medical Officer of the Asylum at Schoeneberg, Berlin.*

Gentlemen—Allow me to direct your attention to a disease for which I can find no more appropriate name than morphiomania

*Read before the Berlin Medical Society. *Berliner Klinische Wochenschrift*, Nov. 27, '75

(*morphiumsucht*). It has not yet been admitted into text-books; and only a few observations of it are recorded in Medical literature (see Fiedler and Hirschfeld, in Kunze's *Zeitschrift für Praktische Médicin*, 1874).

The history of the disease is brief: it dates from the time when the method of subcutaneous injection by Pravaz's method became popular; and, in spite of the shortness of the time, it has gained a wide and dangerous extension.

Morphiomania arises from the abuse of morphia-injection, and the results of this abuse are disturbances of the whole nervous system. The originators and spreaders of the malady are physicians, who, in cases of more or less painful and long continued diseases have allowed their patients to inject morphia subcutaneously; and it has been further spread by the patients themselves, who have recognized only the comfort produced by the injection, and not its dangers.

The symptoms of morphiomania are nearly the same as those of dipsomania; the similarity of the two diseases extends even to the delirium. In delirium tremens from alcohol and in delirium tremens from morphia, horrors, trembling, and hallucinations are pathognomonic; in both diseases, inflammatory affections of the lungs, intestinal, etc., run an equally severe course. They differ essentially in these particulars: in morphiomania, mania does not occur as a psychical form of disease; and, contrary to what is observed in dipsomania, the victims are almost exclusively found in the higher and more cultivated classes of society.

To those who frequently use injections of morphia, it becomes indispensable, in order to ward off all psychical and somatic uneasiness; and thus they take to morphia as the tipler to his dram. They deaden their mental worry, their domestic troubles, their social unpleasantnesses; as the alcohol-drinker does with his morning dram, they steady their tottering limbs with morphia; and, when the morphia has been excreted from the body, and the feeling of depression and discomfort, like that of alcoholic seediness, bring before their view their miserable and comfortless position, and the mental and corporeal break-up of their lives, a renewed dose of the poison helps them out of their misery, which is only in part of spontaneous origin. But the intervals in which they can lead an endurable existence without morphia become constantly shorter and shorter; the craving for morphia constantly increases, the vicious circle constantly closes in around them, until they become incapable of resistance and totally broken down.

I will relate to you the histories of three cases, remarkable both with regard to the large dose and to the long-continued use of morphia.

A married pair, committed to my care by Medical Councillor Dr. Gunther, of Dresden, and Prof. Westphal, of Berlin, were

admitted into the Maison de Santé of Schöneberg on July 19, 1875.

The man was aged thirty-eight; he had been an officer, and was of strong build. Ten years ago he had learned the use of morphia in rheumatic pains, and during the last five years had injected daily a gramme (fifteen grains) of acetate of morphia.

His wife suffered for a short time from gallstone colic, for which she used injections of morphia. The war of 1870-71 taught her another indication for its use. She took to morphia to interrupt her sorrow, to make her forget her trouble at the dangers to which the nearest members of her family were exposed. During the last five years she had injected daily eight *decigrammes* (twelve grains) of morphia.

As a result of the condition which had been induced, the male patient had loss of sleep, increased reflex excitability, exalted and perverted sensibility, neuralgia, twitchings of the muscles, and dryness of the tongue. There was no constipation; and the pupil, instead of being contracted, was dilated. His face had a remarkably deep red color; he perspired on the slightest exertion, often even while at rest, to such an extent that he was obliged to change his linen several times daily. The patient, though intelligent and in many respects well informed, had no inclination for any business; he was stupid and exhausted, and felt himself ill.

His wife, aged thirty-three, had a grey-leaden color of the face; her pupils were scarcely as large as pins' heads. Menstruation had ceased for four years. She had hyperæsthesia and neuralgia, as violent rigors of the tertian type. Her appetite was small; animal food was especially disgusting to her.

Memory and judgment were well preserved in both patients.

I at once cut off the supply of morphia from the male patient. In the case of his wife, I diminished the quantity daily, so that the use of morphia was ceased from altogether from the fourteenth day.

On the first day after the withdrawal, the male patient showed a high degree of irritability, writhed all over if one only felt his pulse, and had rigors and painful attacks of cough. On the second day he was much depressed, and so weak that he had to be carried to the bath, and dressed and undressed. In the evening diarrhœa set in, and continued fourteen days. With the diarrhœa, during the first few days, there were symptoms of congestion in the head and occasional vomiting. The patient behaved like a person in desperation; he craved most urgently for morphia, beat at his window and doors, etc. Doses of three grammes of chloral produced no sleep during the first three nights.

During the next three days the sensibility was still more heightened, and hyperæsthesia of the scalp and giddiness were

present. On the last of the days, however, the patient began to eat and to feel more easy.

Four days after the commencement of the treatment, the patient slept without chloral, but with interruptions; during the sleepless hours of night he was excited, and was depressed during the day. At the end of the second week there was a cessation of the psychical and somatic effect of the withdrawal of the morphia, with the exception of increased sensibility.

The temperature did not undergo any abnormal variations during the treatment. The patient gained about 2250 grammes (nearly 5 lbs.) of weight during the four weeks.

In the female patient the successive reduction of the morphia injected was attended with increase of reflex irritability and a feeling of extreme discomfort and loss of power. She was sleepless, and, when in bed, had a constant sensation of falling out. There were convulsive movements of the limbs, and neuralgia of the genital organs and bladder. She avoided her bed, as, if she lay in it, painful contractions of the arms set in. After the daily dose of morphia had been reduced to 5 centigrammes, moderate diarrhœa appeared and continued eight days; this was accompanied by anxiety, giddiness, palpitation of the heart, and redness of the face.

The patient, an intelligent and well-informed woman, lamented and wept like a child; was excited to a high degree, and incessantly cried for morphia. After three days, the redness of the face disappeared; the patient was very weak on her feet, and complained of pain in the region of the stomach and liver. Ten days after the total withdrawal of the morphia, the catamenia appeared and ran a normal course. After having been under treatment for four weeks, the patient left the institution, happy and cheerful, having gained 2000 grammes (nearly 4½ lbs.) in weight.

The third patient was a man aged thirty-two, strongly built, of pale yellow complexion, hollow-eyed. The pupils were dilated; there was no constipation; virile power had been lost for half a year. For three years he had injected more than a gramme of morphia daily. On October 9, he entered the Maison de Santé in order to be cured of his habit of using morphia, as he had lost sleep and appetite, and was troubled with violent vomiting every morning.

The supply of morphia was at once entirely stopped. Twelve hours afterwards there were depression, weakness, melancholy, and clonic convulsions. The next day he had diarrhœa, which lasted nine days, and severe vomiting, which continued eight days. During the first five days he was quite sleepless, and had illusions and hallucinations of vision.

On the fourth day he had tremblings of the face, tongue, and limbs; speech was difficult, and there were convulsive twitchings of the limbs.

On the fifth day, speech became still more difficult; the uneasi-

ness and hallucinations of sight increased during the night and exhausted the patient. His voice was hoarse, tuneless, and hesitating; his aspect was one of depression.

During the fifth night, the patient, while sitting upright in his bed, suddenly fell backward on the pillow; his breathing stopped, and then became difficult and panting. He had the *facies Hippocratica*. After half an hour the pulse and respiration rose; but a high degree of collapse remained. On the sixth day the patient slept half an hour; and on the seventh day, after a bath with affusion, an hour and a half. Up to the eight day the patient vomited all his food; his appetite then returned and the vomiting ceased. On the ninth day the patient felt somewhat more at ease; he said that he no longer had any desire for morphia, and was only troubled about his sleeplessness.

There was a rise of temperature to 38.5° Cent. (101.3° Fahr.) on the fourth night.

An almost daily examination of the urine in the married pair whose cases are first recorded showed on the first two days after the withdrawal of morphia a turning of the plane of polarization to the left; on the other hand, Trommer's test, applied during the four weeks of observation, showed in both reduction of the hydrated oxide of copper. In the third case, there was no change in the plane of polarization; but Trommer's test gave the same result as in the other cases. This reduction could not be due to chloral, as the female patient took it only a few times, and the last patient had none.

The symptoms of morphiomania are so distinctly defined in these cases, that it is not necessary to describe them more specially. It is worthy of notice, that the abuse of morphia produces almost the same pathological phenomena as those for which it is indicated as a remedy. Hyperæsthesia, neuralgia, sleeplessness, anxiety, depression, and irritability, are both overcome and produced by morphia. Further, when morphia is suddenly or gradually withdrawn, there is during the first days a considerable aggravation of the disturbance, especially of the cerebro-spinal and vaso-motor nervous system (feebleness of gait, trembling, various degrees of rigors, deep redness of the face, perspiration of the whole body).

As regards the prognosis of morphiomania, I will show that in a large number of patients I have seen only 25 % of cases of recovery; in most cases there was a relapse. In two cases I have seen the abuse of morphia followed by marasmus and death; two other patients committed suicide. Five were drinkers; among these was the wife of a colleague, who had read in a book on *materia medica*, that alcohol was an antidote to morphia; she used it as a remedy to cure herself of the habit of using morphia and fell a victim.

The treatment of morphiomania consists principally in the withdrawal of the morphia; and sudden is preferable to gradual withdrawal. The organism bears rough and energetic interfe-

rence better than than that which acts slowly, as we see in surgical and obstetric operations, etc. The treatment of the patients requires personal devotion on the part of the medical man, and is difficult and thankless.

To wean inveterate morphia-cravers from morphia is impossible, unless they be treated as prisoners. While the morphia is withdrawn they must be isolated, and be constantly watched by educated persons inaccessible to all attempts at corruption. Such persons are found with difficulty; for some secretly bring morphia to the patients for the sake of reward, and others can not resist the pathetic entreaties and severe sufferings of the patients. Windows and doors must be closed against all communication with the outer world. The patient's clothes, the sofas, the cupboards in his room must be repeatedly examined; for it is characteristic of every morphia-craver who comes voluntarily or involuntarily into an institution to be cured of morphiomania, that he brings with him a large dose of morphia, and one or more injection-syringes. The physician must not rely on the promises or the most solemn assurances, or on the word of honor, which the patients willingly give. Morphiomania, like every passion, sets aside the character of the individual; the most educated, the most judicious and intelligent, eschew no means, no trick, to deceive the physician, and to either secure the morphia which they have brought with them, or to procure a new supply.

If the physician be energetic, observe his patients constantly, and have control over the watchers, and if these be honest, the most difficult part of the treatment is overcome in eight days.

After the morphia has been withdrawn twelve hours, collapse usually sets in; the patient should therefore keep his bed, and, during the first eight days, not be deprived of the use of stimulant wines; it is even necessary for women to take large doses of alcoholic liquors at this time, As has been shown in the third case, the collapse may become so severe as to endanger life. The danger is overcome by the subcutaneous injection of liquor ammoniæ anisatus, followed soon by an injection of fifteen milligrammes of morphia.

If, during the first forty-eight hours after the withdrawal of the morphia, the patient do not groan and lament, if he be able to eat during the first days, and if his countenance be animated, he has, in spite of denial, secretly used morphia. The narrowness of the pupils, and the absence of diarrhœa, will soon confirm the impression.

The distress, restlessness, and despair which affect the patients during the first three days, are so severe, that the physician must be deeply penetrated by the task which he has imposed on himself to look calmly on this misery, and to have no ear and no heart for the despair, lamentation and weeping.

Attempts at suicide on the part of the patients, which their

unhappy frame of mind may lead them to make, must be watched against and prevented.

Prolonged baths should be given, both as a remedy for the neuralgia which appears during the time of abstinence, and to promote sleep at night; and, if there be not too great collapse, they should be combined with cold affusions

Diarrhœa, which in the cases observed by me has almost always set in immediately after the withdrawal of the morphia, is an obstacle to treatment only when it becomes exhausting. The injection into rectum two or three times a day of one to three litres of water at blood-heat aids in soon assuaging this symptom.

Vomiting, which in some cases appears during the first days of abstinence, and which yields to no remedies, as in general narcotics must be excluded from the treatment, demands that care be taken for the feeding of the patient by the rectum. Leube's nutritive enemata are very useful in these circumstances.

As morphiomania has an affinity with dipsomania, the use of wine and alcoholic liquors should not be prohibited altogether, but should be limited from the time when the patients begin to take regular nourishment. The further treatment must be regulated by the general condition of the patient. Fresh air, good nutritious food, and preparations of iron, will soon again raise the depressed powers.

Beyond all, however, it is necessary, even before the end of the third week of treatment, to provide bodily and especially mental occupation for the patients.

Experience teaches that the internal use or subcutaneous injection of morphia, so long as it is carried out by the physician himself, does not lead to morphiomania; and that this disease was first developed when physicians entrusted the administration to the nurses and attendants of the patient, and prescribed morphia injection. The reason which we often hear assigned for this, that the physician is hindered from making the injection personally, is not valid; he can then content himself with the internal administration of morphia, as, though the effect is a little slower if it be given *per anum*, and on an empty stomach, it relieves pain and produces sleep just as much as when injected subcutaneously. The internal use of morphia is not attended with the very unnecessary feeling of comfort which makes morphia a source of pleasure to patients and stimulates them to its continued use.

I am aware of the great and almost insuperable difficulties which stand in the way of carrying out my requirements; but there is no other means of preventing the further spread of morphiomania.

The suggestions and objections made when I read a paper on the subject at the meeting of naturalists at Gratz, were chiefly the following. On the one hand, no reason was found for entrusting attendants on the sick with the injection of morphia.

There may be exceptions; as a rule, one will become convinced of the disadvantages attending the practice. On the other hand, it was suggested that the legislature should be urged to enact a law forbidding apothecaries and druggists, under pain of severe punishment, to sell morphia to unauthorized persons. Such a law is already in existence; and yet a great number of apothecaries sell morphia to any one who asks for it. Again, it is often impossible to make the apothecarries answerable, as they themselves are deceived by false prescriptions.

The last proposal, which was approved of, and which certainly can have no happy results, was, that in each case the physician should inform against the apothecary. But the function of an informer does not suit every one's taste. With regard to the danger which threatens society through the spread of the malady, it was regarded as a duty of every physician to make subcutaneous injections of morphia personally. The much-occupied practitioner must limit himself to the internal use of morphia if he cannot carry out this requirement.

In the hands of the physician, the method of subcutaneous injection is a blessing to mankind; in the hands of the laity, it is a curse.

I conclude, gentlemen, with entreating you to direct your attention to this new form of disease. If you use your influence by word and writing, then, but only then, will its further development be arrested.—*London Medical Record.*

NELATON'S INVERSION METHOD IN A CHLOROFORM ACCIDENT.

By Lawson Tait, F.R.C.S.

On July 7th, whilst performing Amussat's operation on a thin, delicate, and much exhausted patient, my attention was suddenly drawn to the fact that the respiration and carotid pulsation had ceased. I tried to feel the beat of the heart, but, failing to do so, I immediately seized the patient round the waist, inverted her and kept her with her thighs bent over my arm and her head hanging downwards. I then directed my colleague in the case to imitate respiration by compressing the chest at intervals of about five seconds. Looking back now at the case, it is probable that pulsations began to be felt at the root of the neck in about two minutes after she was inverted, but it seemed to me like a quarter of an hour; and it must certainly have been fully five minutes before she resumed respiration independent of assistance. I kept her in the inverted position for about five minutes longer.

Any one who has seen a death from the uncomplicated action of an anæsthetic must know how useless are the directions for galvanic batteries. Such appliances are sure to be out of order

when most needed, and the benefit to be derived from them even when they act is very problematical.

The cases narrated by Dr. Marion Sims were enough to convince me that the inversion method, whatever may be the theory by which its success is to be explained, had rescued patients from impending death; and I am convinced that it saved me from the loss of the patient whose case I have narrated.

Since July I have used nothing but anhydrous sulphuric ether for operations, and though it is far from being so convenient as chloroform or methylene ether, I think we are not justified in using any other anæsthetic, save in the case of young infants and pregnant women, amongst whom no chloroform accident has yet been recorded.—*Practitioner.*

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, March 16th, 1876.

Dr. S. S. Purple, President, in the Chair.

THE TREATMENT OF DIPHTHERIA.

The object of the paper read upon the above subject by Dr. C. E. Billington, was to contribute to the proof of the doctrine that the primary disease was a local affection and the source of constitutional manifestations. The doctor admitted that there were many cases which seemed difficult to explain upon this theory, but claimed that the exceptions were too few to weigh against that doctrine, which he couched under three heads:

1st. In the great majority of constitutional cases which have been under his observation, the local affections have been much more severe than in the other class of cases;

2d. The constitutional disease, as he had seen it, had been, not antecedent to, but consequent upon the local affection;

3d. The results of treatment upon the principle of local disinfection strongly confirmed this view. The paper was based on observations made in 300 cases, of which 150 were under his own care; and the great majority of all the cases occurred in patients under 12 years of age.

Three elements entered into the study of the treatment of that affection:

1. Contagion; 2. Inflammation, and the formation of the pathological exudation and the accompanying nerve irritation, symptomatic fever, etc.; 3. The resulting specific and septic poisoning.

The indications in the treatment were, 1, to destroy the contagion; 2, to subdue the inflammation, which was most effectually done by removing its cause; and 3, to combat the absorption

of the poisonous element from the spot at which the local disease was manifested.

Failing in these essentials, constitutional remedies were useless. In other words, local disinfection was the proper treatment for diphtheria. The physician should aim to destroy the poisonous exudation and fluids; but at the same time should exercise the utmost care, and not irritate the part affected.

That gave rise to two questions:

1. What were the best medicinal agents that could be employed for that purpose?

2. What was the best method of employing them?

The tincture of the chloride of iron was placed at the head of the list of remedies to be used as local disinfectants; and it also possessed other properties, which justly commended it as an agent to be employed in the treatment of diphtheria.

Lime-water, glycerine, chlorate of potash, carbolic and salicylic acid, and sulphite of soda were also mentioned in this connection.

With regard to the manner of employing these remedies for the purpose of obtaining their disinfectant influence, Dr. Billington recommended their internal use rather than topical application by means of camel's-hair brush, sponges, etc. By that, however, he did not wish to exclude spray and the local use of remedies by means of the soft brush, for these means might be employed in certain cases with great benefit; but they should be used with the utmost care, lest a mechanical irritation should be produced. The following prescriptions were given:

℞—Tinct. ferri perchlorid.....ʒiss,
Glycerini,
Aquæ, aa.....ʒi.
M.

A teaspoonful to be given every two hours. For children under two years of age, one drachm of the iron was a sufficient quantity to enter into the prescription. When vomiting was a troublesome symptom, it sometimes became necessary to omit this mixture.

It was also recommended to administer teaspoonful doses of the following mixture every two hours—that is, alternate with the above; but the administration should come after an interval of thirty minutes.

℞—Potassæ chloratis.....ʒss,
Glycerini .....ʒiij,
Liquoris calcis, ad.....ʒiij
M.

The frequency of this dose was insisted upon by Dr. Billington as an item of very great importance.

It was also recommended to give teaspoonful doses of the following mixture, in addition to those already prescribed.

℞—Acidi salicylici.....grs. x to xv,
Sodæ sulphitis.....ʒss to grs. xlv,
Glycerini .....ʒss,
Aquæ, ad.....ʒiij.
M.

It was recommended to use the following mixture in the form of spray for several minutes at a time, and just before the administration of each dose of medicine.

℞—Acidi carbolici.....m. x,
Liquoris calcis.....ʒiv.
M.

Applied by means of an ordinary perfuming atomizer. The doctor had found that children under two years of age so resisted the use of the atomizer that it was not available. He also recommended early resort to the nasal douché, and if offensiveness of the breath persisted, the nasal syringe should be resorted to and the salicylic mixture already mentioned.

For tough, unyielding membranes, the following was recommended.

℞—Tinct. of the chloride of iron.....two parts,
Glycerini.....one part.
M.

Applied with a camel-hair pencil, but the greatest care should be exercised not to treat the affected parts roughly.

Dr. Billington regarded quinine as worse than useless, especially in young children, except as an agent to reduce the temperature. It was to be used for this purpose only when the temperature remained high after the initial stage had passed. For the high temperature, sometimes present early in the disease, a single dose of calomel was recommended. The doctor also maintained that the great majority of cases required no medication except the disinfectant measures, to which allusion had been made. Taking all the cases, probably 60 per cent. would recover spontaneously. Stimulants should not be used indiscriminately. The patients might have ice freely when they would take it; should be sustained by cold milk, perhaps eggs; and the juices of fruits and the fruits themselves were regarded as beneficial.

Dr. Billington reported astonishing results, which he had obtained by following out this plan of treatment. Membranous exudation was present in every one of the cases referred to in the paper.

Out of one hundred and twenty-four dispensary cases, there were ninety recoveries. Of these, one hundred and two were under his own care, and eighty-eight recovered. The largest number in a single month occurred in the month of August, 1875. In his private practice, the doctor had had seventeen cases, and all recovered with but a single exception. Of these, seven were of the severe tendency; the others were mild. The average duration of the doctor's cases was from four to six days. These cases, added to those treated by Drs. Darkin and Bullard, in accordance with the same plan, raised the number to fifty-one, and with but a single death, already mentioned. The inhalation of steam was regarded unfavorably. Dr. Billington believed that he could prevent systemic infection, and also subsequent serious laryngeal complication, by early, thorough, and faithful resort to and continuance of the measures for local disinfection which he had recommended.

The paper was listened to with marked attention.

Dr. Barry, in discussing the paper, remarked that the success obtained by Dr. Billington in the treatment of diphtheria had been wonderful, and that he had not been able to obtain any such results by any plan of treatment he had ever adopted. Dr. Barry was of the opinion that diphtheria was strictly a constitutional disease, and the local manifestation was simply an indicator. His treatment therefore was local and general. He discarded the promiscuous use of irritating substances in the throat. Where the amount of exudation was small, he used tincture of iron or muriatic acid with glycerine; and if the patient was of sufficient age, an astringent gargle: alum, chlorate of potash, etc. If the patient was young, the vapor of hot water or vapor of iodine was recommended. In those cases in which the tonsils were pretty well covered, he had been accustomed to use a powder composed of sulphate of iron, chlorate of potash, and muriate of ammonia. This was blown through a quill into the throat every two hours.

His general treatment was supporting in its fullest sense, for the tendency to death was by asthenia. Iron with quinine, chlorate of potash, carbonate of ammonia, milk, beef essence, milk-punch, should be employed. The surroundings of the patient should be cheerful and pleasant; the unaffected children removed, if possible, from the house; the room continuously disinfected, and the sick quarantined. In his cases the ordinary duration had been about two weeks if the patient was to recover. The more acute symptoms passed away in from four to six days; and if the case were to prove fatal, it usually did so about the fifth or sixth day. He had not met with a single fatal case in an adult patient in his own practice.

Dr. Burke was also of the opinion that diphtheria was a constitutional disease with a local manifestation. He also regarded

local applications by means of brushes and sponges as harmful. "The mild cases," said the doctor, "would get well of themselves, but perhaps they had better have given them a little cubebs mixed with mucilage." "The malignant cases," continued the doctor, "would die in spite of all treatment."

There was a class of patients between these extremes that could be saved, a certain portion of them, by the use of constitutional remedies, such as quinine, iron, etc.

Dr. Burke mentioned the use of bromine with bromide of potassium, as recommended by Prof. Thomson; and in some cases it had evidently done good, but in many cases it had done no good whatever. He also recommended inhalation of the vapor of lime-water, especially where croupy symptoms became developed.

Dr. Hanks remarked that Dr. Billington's paper was exceedingly interesting to him, for two reasons: first, because of the remarkable success which had attended his mode of treatment; and second, because it was the expression in words of convictions which had been slowly but surely maturing in his own mind during the past fourteen years.

Dr. Billington's success was truly remarkable, for he well knew the type of the disease as it had appeared in the twenty-first ward; having had in his private practice, during the last five years, in that district, from twenty to thirty cases every year. He knew that many of these cases attended by Dr. Billington had been severe, and not a few malignant. Therefore, when the large per cent. of recoveries was considered, a cause must be looked for, and he believed two excellent reasons could be found for this satisfactory result. One was the kind of medicaments used locally and internally, and the other was the great care he bestowed in teaching the parents or nurses the *proper manner* of administering the remedies presented. This carrying out to the letter every little detail has had much to do, more than many had been led to suppose, in the cure of diphtheria.

He wished he could sufficiently emphasize the vast importance, in treating diphtheria, of careful attention to the minutiæ. Many had been, and still were in the habit of looking at the patient's throat, writing a prescription to be taken, ordering a gargle every few hours, and the nose to be syringed twice a day, believing that their directions would be followed. He knew, however, that one-half of the best class of patients even did not receive the full benefit of the medicaments through lack of proper, intelligent nursing.

He mentioned that the paper was interesting to him, because it was the concise and practical expression of views that had been maturing in his mind for several years. He remembered the disease as it appeared in New England fourteen years ago. Then it was not alone a disease of childhood, but adults were frequently attacked, and it seemed to him that nearly one-half

the deaths were among those over fifteen years of age. The prize essay of Slade was the only authority for the treatment at that time. They were taught to cauterize the throat, and use severe remedies, etc., etc. He remembered how, while performing the part of nurse for his preceptor, he applied strong nitrate of silver, locally, twice a day, gave strong solution of tincture of iron and quinine, brandy and whiskey, and made external application of poultices of various kinds. About one-half of the patients died, both young and old. When he commenced practice in Massachusetts, the disease was prevalent in a malignant type, and he treated his patients as he had been taught. He could not conscientiously continue the use of strong caustics, and began to use tannin dissolved in glycerine. Also Huxham's tincture with aromatic sulph. acid, in frequent doses, internally, with a little pyrophosphate of iron occasionally. His success was better, and he learned thus that the disease did not require nitrate of silver in the first stage; and never, excepting in the necrotic or ulcerative stage, which appeared in some cases from the eighth to the fifteenth day. Within the last few years he had not changed the internal treatment, except that he had found more quinine necessary in New York than in Massachusetts. For local treatment, he had changed the glycerine and tannin for pleasant solutions of carbolic acid as a gargle, or equal parts of powdered chlorate of potash and sugar thrown through a glass tube into the mouth and on the affected parts. He liked Dr. Billington's medicaments, and especially his preparation of carbolic acid and lime-water, which he used with the admirable little atomizer.

The success of his treatment would not equal Dr. B.'s, yet he had been led to suppose that it compared favorably with most of his brother practitioners. During the year 1875 he had had twenty-seven cases, with twenty-one recoveries and six deaths. As one of the latter number occurred out of the city, and he saw the patient for the first time after it was too late to do any good, he deducted it in making his per cent., and therefore reckoned this 70+ per cent. of recoveries as a fair record, considering the type of the disease. There was one practical suggestion on which he laid greater stress than had Dr. Billington. He believed he had met with marked success in enforcing a sort of quarantine regulation when the disease had appeared. A careful and thorough disinfection of the room and apartments of the patient and family could not be too strenuously insisted upon. For this purpose he used sulpho-carbolate of lime. He also compelled a persistent administration of the antiseptic remedies, carbolic acid in solution, or pulverized chlorate of potash, to all the unaffected members of the family. In carrying out that régime during the past year, he had had the satisfactory result of preventing the spread of the disease to other mem-

bers of the family. In several instances where there were four or five small children that result had been attained. In conclusion, he wished to say that we could not be too careful, using all the means our knowledge could command, in preventing the ravages and spread of that fearful disease.—*The Medical Record.*

MANIA A POTU.

By L. A. Dugas, M.D., of Augusta.

Read before the Medical Association of Georgia, in April, 1875.

Having been forcibly impressed, during my pupilage, with the fatality then attending mania a potu, as treated in the hospitals of our large Northern cities, I determined, upon the commencement of my professional career, to adopt a different plan of treatment, and to carefully note the results. At that time practitioners usually relied upon opiates, in one form or another, to induce sleep, and upon calomel to correct the secretions, both of which were considered necessary to success. The opiates were often administered in enormous quantities, and the cases which did not terminate fatally, were not unfrequently terribly salivated, making convalescence both protracted and precarious. The violence of the delirium was made so great as to require the patients to be confined in the straight jacket, then in common use in other forms of mania.

I now feel it a duty to lay before the profession the result of my long experience in a more formal manner than that of clinical instruction, made to the classes of the Medical College of Georgia for upwards of forty years.

My plan of treatment is very simple. It consists of the administration, once or twice a day, of cold water affusions, of such food as may be relished, and sometimes of two or three small drinks of toddy per day. If the patient is very unruly, one or two intelligent persons should attend him day and night as long as it may be necessary.

For the affusions a large tub should be provided, if a bathing tub be not convenient, three or four buckets of water, with a pitcher and napkins placed near the tub, and one or two assistants. The patient should then be stripped of all garments and seated in the tub, the aid's hands should be placed apon the patient's shoulders, so as to prevent his jumping up, and the physician should then pour one pitcherful after another over the patient's head, in a regular stream, which will pass down over the entire body. The affusion is to be continued from one

to three minutes, *by the watch.* I have never seen one who needed or could bear it over three minutes. However wild or violent the patient may be, he soon becomes quiet, begs most piteously to be released, and makes the most solemn promises to be quiet thereafter. The pulse, which was full and strong, soon loses the peculiarities, and becomes small and frequent. If the affusion be continued too long the pulse may become almost imperceptible. The physician should therefore watch this carefully and cease whenever the patient is entirely rational, and the pulse sufficiently subdued.

Let the aid then rub the patient rapidly, and with force until the skin is dry and red with reaction. Place him then promptly in bed, cover him warmly, and tell him to go to sleep. The room should be darkened, and a nurse left near him. In most cases the patient will be asleep in a few minutes, and continue so more or less long, according to his previous loss of rest. He will sometimes sleep six or eight hours, and awake perfectly rational. He should then be fed, and allowed a little toddy if he craves it.

If this affusion be administered in the morning, and the relief from delirium be not complete at night, it should then be repeated; but I am in the habit of repeating it every morning until the perfect restoration, which may vary from two to six days. Too much attention cannot be given to the taking of food, by complying with the caprices of his appetite or taste.

The affusion should always be done in presence of the physician, as very few nurses can be trusted for its proper administration and timely suspension. If the bowels are too slow, an enema of cold water will soon empty the rectum. I never allow the use of laxatives, and still less of cathartics, lest unnecessary purging be caused. The fact is, that patients have usually eaten so little during the attack that there can rarely be any injurious accumulation in the intestines. Diarrhœa must be immediately checked by ordinary astringents, avoiding opium or camphor. During the whole management of the case, I eschew all narcotics, with the exception of the toddy as above stated.

We know that while some cases of this disease occur *during* the excessive use of alcoholics, others come on *after* the cessation of these potations. Hence it is that we should discriminate between them, and advise toddy only for those who seem to suffer from its absence. The other class of cases do better without it.

Now, as to the success of this plan of treatment, I have to say that, with one exception, I have never lost a case when called to see it before it was too late to expect good from any treatment, and these have been very few. In the exceptional case the patient had old complications, which would have rendered any treatment unsuccessful.

NOTICES OF NEW BOOKS.

A System of Midwifery, including the Diseases of Pregnancy and the Puerperal State. By William Leishman, M.D., Regius Professor of Midwifery in the University of Glasgow; Physician to the University Lying-In Hospital, etc. Second American from the Second and Revised English Edition, with additions by John S. Parry, M.D., Obstetrician to the Philadelphia Hospital, etc. Philadelphia: Henry C. Lea. 1875.

There are very few of our readers who are not well informed in regard to the merits of this work. In his preface to the first edition, the author avows that his "object in this work has been to furnish the students and practitioners a complete system of the midwifery of the present day." Its general use as a text-book in this country must be accepted as a recognition, on our part, of the successful accomplishment of the author's purpose. In the preface to the second edition, the author states that "the chief alterations will be found in the Physiological Section—in regard to which the author is under great obligation to his colleague, Prof. Allen Thomson—and in the chapters on Puerperal fever, which have been re-written, with the view of giving greater prominence to the doctrine of septicæmic infection." The American Editor "has added such notes only as he believed would make the book more useful to the profession in this country. The additions are distinguished from the text by being enclosed in brackets [— P.], and will be found chiefly in the chapters on the Use of the Forceps, Lactation, and Puerperal Diseases. A chapter on Diphtheria of Puerperal Wounds has been added, and a few new illustrations have been introduced, representing the principal modifications of obstetrical instruments generally employed in this country." The volume contains 766 octavo pages, and is gotten up in the publisher's usually faultless style.

A Treatise on Surgery, its Principles and Practice. By T. Holmes, M.A. Cantab., Surgeon to St. George's Hospital. With four hundred and eleven illustrations, chiefly by Dr. Westmacott. "*Mille Mali Species.*" Philadelphia: Henry C. Lea. 1876.

This is not only the latest, but we have no doubt is one of the very best text-books upon surgery ever offered to the profession

of this country. The author speaks of it as intended "to be to some extent an introduction to the more elaborate system of surgery of which I am the editor, and have freely used the treatises of that system in composing the various chapters; and when any quotations are made, the source of which is not distinctly acknowledged, it will be understood that they are taken from thence." The volume contains 960 octavo pages, including an index of authors, and a carefully arranged index of subjects, and is admirably published.

A Treatise on the Disease of Infancy and Childhood. By J. Lewis Smith, M.D., Clinical Lecturer on Diseases of Children in Belleview Medical College Hospital; Physician to the New York Infants' Hospital, etc. Third Edition, enlarged and thoroughly revised, with illustrations. Philadelphia: Henry C. Lea. 1876.

This is probably the best work on the subject by an American physician, and for the use of American practitioners. A second edition was published in 1872, and it has now, in 1876, reached an enlarged and thorougly revised third edition. Cerebro-Spinal Fever, and Rötheln, are in this last edition introduced for the first time, and the chapter on Diphtheria has been rewritten. The work deserves the success it has achieved. C.

The Medical Jurisprudence of Insanity. By J. H. Balfour Browne, Esq., of the Middle Temple and Midland Circuit, Barrister-at-Law, etc. Second edition, with references to the Scotch and American decisions. Philadelphia: Lindsay & Blakiston. 1876.

We hold that every active member of the medical profession should have upon a shelf of his library, within easy reach of his outstretched hand, some unquestionable authority upon the difficult points of medical jurisprudence. Every physician, whose experience and trials include an appearance in the court room as an expert in cases involving questions of sanity, or who has served on commissions of lunacy, will readily admit that investigations concerning healthy or unhealthy states of the

human mind are among his most perplexing problems. We should therefore welcome a volume which comes to us replete with accurate and interesting data, and clothed with high authority. We have not space for an extensive notice or long extracts from the work, but cannot forbear laying before our readers the very latest classification of insanity.

§ 61. Dr. Hammond's Classifications.—Again Dr. Hammond, in his valuable work on Diseases of the Nervous System,* gives the classification which was agreed upon at an international congress which met at Paris in 1867. It is as follows:

I. *Simple Insanity*, embracing Mania, Melancholia, and Monomania, (thus negativing the claims of Monomania to be considered a distinct disease,) Floating Insanity, Moral Insanity, (whose independent existence is thus also negatived,) and Dementia consequent on the above types.
II. *Epileptic Insanity.*
III. *Paralytic Insanity*, which is treated as a distinct disease.
IV. *Senile Dementia.*
V. *Organic Dementia.*
VI. *Idiocy.*
VII. *Cretinism.*

But although Dr. Hammond refers to the classification just quoted, it can scarcely be with entire approval. Indeed, it is difficult to see upon what principle such a grouping could have been made; and it seems to us entirely illogical. Dr. Hammond's own classification has greater merits. He divides insanities as follows:

I. *Perceptional Insanity*, "characterized by the tendency to the formation of erroneous perceptions either from false impressions of real objects, (illusions,) or from no external excitations whatever, (hallucinations)."
II. *Intellectual Insanity*, characterized by delusions.†
III. *Emotional Insanity.*
IV. *Volitional Insanity.*
V. *Mania.*
VI. *General Paralysis.*
VII. *Idiocy and Dementia.*

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* New York, p. 337.

† Dr. Hammond, in distinguishing illusions and hallucinations from delusions, said: "Illusions and hallucinations may exist, and the individual be perfectly sensible that they are not realities. In such cases, the intellect is not involved. But if he accepts his false perceptions as facts, his intellect participates, and he has delusions. A delusion therefore is a false belief."

This classification has been adopted by Mr. Dudley Field in his essay on "Emotional Insanity,"* in so far as the first four classes are concerned. In this way he would, we suppose, regard mania, general paralysis, idiocy, and dementia as properly belonging to one or other of the first four classes.

For all practical purposes, however, perceptional insanity might be left out of consideration, as it is, according to Dr. Hammond, productive only of illusions and hallucinations, which if they are irremovable by evidence, or really indications of insanity, at once pass into the category of false beliefs or delusions, and indicate the existence of lesions in the ideational centres. We come then, ultimately, only to three forms of insanity—that which is connected with the emotions or feelings, that which is manifested in relation to thoughts or ideas, and that which affects the volition or will.

§ 62. Dr. Bucknill's Classification.—One of the most recent attempts at classification is that of Dr. Bucknill, whose position as one of the ablest leaders of medico-psychological thought in this country entitles his classification to an attentive consideration, which it should have commanded by its own intrinsic merits. Dr. Bucknill's classification was originally published in the "Lancet," but is now appended to Drs. Bucknill and Tuke's "Psychological Medicine."† It purports to be founded on pathogenetic relations of morbid mental states, while under these are grouped the various ætiological forms of insanity as "genera," these genera being differentiated by various "species" according to the pathological conditions of the brain and nerves, the blood and nutrition. It is as follows:

Classes of Psychical Phenomena.

1. Melancholia.
2. Mania.
3. Dementia.

Sub-Classes of Psychical Combinations and Transmutations.

1. Melancholia, simple.
2. " combined with excitement.
3. " with stupor (*dementia attonita*).
4. " mania and dementia alternating (*folie circulaire*).
5. Manie, simple.
6. " with depressing emotions.
7. " intercurrent with melancholia.
8. " intercurrent with dementia.
9. " alternating with sanity (recurrent mania).
10. Dementia, simple and primary.

* Albany Law Journal, 3 May, 1873.
† 3d ed., p. 801.

11. Dementia, consecutive on mania or melancholia.
12. " congenital (idiocy and imbecility).

Orders of Pathogenetic Relations.

1. Simple insanity (ideo-encephalic).
2. Allied insanity.
3. Sequential insanity.
4. Concurrent insanity.
5. Egressing insanity.
6. Metastatic insanity.
7. Climacteric insanity.

Genera of Pathogenetic Relations and Simple Insanity.

1. Insanity from hereditary predisposition.
2. " from moral influences.
3. " from intellectual overwork.
4. " from direct cerebral injuries.
5. " of general paralysis (*encephalo rachites*).

Allied Insanity, influenced by other diseases, but independent.

1. Insanity with cardiac disease.
2. " with pulmonary disease, emphysema, phthisis, etc.
3. " with enteric disease.
4. " renal or vesical disease, etc., etc.

Sequential Insanity, caused by other disease which has subsided.

1. Insanity following idiopathic and exanthematous fevers.
2. " following inflammations and pneumonia.
3. " following injuries to the cerebro-spinal axis, apoplexies, etc.

Concurrent Insanity, caused by other diseases or diseased conditions which continue to exist.

1. Insanity from cachexias (syphilitic, chlorotic, cretinic, etc.)
2. " from epilepsy.
3. " from chorea.
4. " from alcoholism.
5. " from masturbation.
6. " from starvation.

Egressing Insanity growing out of the former disease, of which it is an exaggeration.

1. Insanity egressing from hysteria.
2. " egressing from ecstasy.
3. " egressing from hypochondriasis.

Metastatic Insanity, from the shifting or ceasing of other disease or suppression of discharges.

1. Insanity from rheumatism.
2. " from erysipelas and skin diseases.
3. " from suppression of habitual discharges, hæmorrhoids, or ulcers.
4. " from suppression of the catamenia.

Climacteric Insanity, caused by natural conditions of development and decline.

1. Insanity of the pregnant and puerperal state.
2. " of pubescence.
3. " of climacteric decline.
4. " of old age.

Species of Pathological Conditions differentiating the genera by Pathological conditions of the brain and nerves, of the blood and the nutrition.

Neurotic.	1. Hyperæsthetic.
	2. Anæsthetic.
	3. Neuralgic.
	4. Sympathetic.
	5. Apathetic.
	6. Hypertriptic.
	7. Atriptic.
Hæmic.	8. Hyperæmic.
	9. Anæmic.
	10. Septicæmic.
	11. Uræmic.
	12. Toxic.
Trophic.	13. Hypertrophic.
	14. Atrophic.
	15. Cacotrophic or cachetic.

§ 63. Conclusion.—Upon the whole, consideration induces us to adopt the first of [45] these classifications. It is certainly of the utmost importance that a classification should be adopted for the purposes of medical jurists which is easily understood, and the ground of which is to be found in easily observed symptoms. Only in this way will the great gulf which separates medical men and lawyers be bridged over. When, however, mental peculiarities, as inferred from conduct, are taken as the basis of the methodical arrangement of the kinds of insanity, or of patients laboring under them, into certain groups, little difficulty is likely to arise; as to a lawyer, insanity is to be inferred from certain acts, not from the existence of a certain cause. It must be remembered that all classifications are defective, and can only be defended on the ground of convenience and expedi-

ency, not upon that of absolute correctness or truth. In many cases much difficulty will be found in assigning some mental disorder to any one of the classes above enumerated, and care must always be taken to appreciate the fact that these words are not absolute partitions between diseases. In many cases these peculiarities which have served as a distinguishing feature of one class are found mixed with, or modified by those which have served as the distinguishing features of another. A classification is like a walking-stick, a thing to be of assistance. Yet some children ride on a walking stick, and some men make a hobby of classification. It is mental weakness which is the cause in each case.

The volume closes with concise rules and instructions to medical experts with regard to many of the most responsible duties devolved upon them.

Medical and Surgical Memoirs: containing Investigations on the Geographical Distribution, Causes, Nature, Relations and Treatment of Various Diseases, 1855–1876. By Joseph Jones, M.D., Professor of Chemistry and Clinical Medicine, Medical Department University of Louisiana; Visiting Physician of Charity Hospital; Honorary Member of the Medical Society of Virginia; Formerly Surgeon in the Provisional Army of the Confederate States. Volume I.—*Introduction to the Study af Diseases of the Nervous System. Investigations on Traumatic Tetanus, Epilepsy, Paralysis, and Cerebro-Spinal Meningitis. Clinical Observations on Diseases of the Lymphatic and Circulatory Systems, and of the Liver and Kidneys. Investigations and Researches on Pneumonia. Observations on Diseases of the Osseous System. Illustrated by* 800 *Cases of Disease*, 400 *Physiological Experiments*, 95 *Analyses of the Blood and Urine, and* 60 *Tables, Illustrating the Symptoms and Mortality of Diseases under Different Modes of Treatment and in Different Climates.* Vince Malum Bono. New Orleans: Printed for the Author, by Clarke & Hofeline, 112 Gravier street. 1876.

The 1st volume of the Medical and Surgical Memoirs contains six monographs upon the following subjects:

1st. Introduction to the Study of Diseases of the Nervous System. Historical Notes relating to the Anatomy and Physiology of the Nervous System—p 1–48. Results of the Microscopical and Anatomical Investigation of the Minute Structure of the Brain and Spinal Cord in Vertebrate Animals—pp. 48–62. Results of Investigations, directed more especially to the Deter-

mination of the Functions of the Cerebrum and Cerebellum—pp. 62–79. Relations of the Cerebro-Spinal and Sympathetic Nervous Systems—pp. 79–96. Experiments in Section of the Nerves, illustrating the Relations of the Sympathetic to Nutrition, Secretion, Circulation, Respiration, and Animal Temperature—pp. 97–115. Hypothetical Discussion and Investigations Concerning the Nature of the Nervous Force—pp. 115–120. Mutual Relations of the Muscular and Nervous Force—pp. 120–130. Physical and Intellectual Constitution and Relations of Man—pp. 130–137.

2d. Investigations on the Nature, Causes, Relations and Treatment of Traumatic Tetanus, illustrated by Observations on Various Diseases of the Nervous System, and by Experiments on Living Animals with certain Poisons—pp. 141–407.

3d. Observations on Cerebro-Spinal Meningitis; and more especially as it appeared amongst the Soldiers of the Confederate States Army during the Civil War of 1861–1865—pp. 411–553.

4th. Clinical Observations on certain Diseases of the Lymphatic and Circulatory Systems, and of the Liver and Kidneys, illustrating the Relations of Dropsy to Various Diseases—pp. 558–634.

5th. Investigations of the Prevalence and Fatality of Pneumonia in the Confederate Army during the American Civil War of 1861–1865, with Practical Observations on the Relative Value of the Different Modes of Treating Pneumonia—pp. 649.

6th. Mollities Ossium—(Malakosteon, Osteo-Malatia, Osteo-Sarcosis, Knochenerweichung, Rachitismus Adultorum. Rickets or Softening of the Bones in the Adult)—pp. 751–799.

The 2d, 3d and 5th mongraphs contain numerous tables containing the statistics relating to the diseases, wounds and mortality of the different divisions of the Confederate Army, consolidated by Dr. Joseph Jones, from the official records on file in the Surgeon-General's Office at Richmond during the recent civil war, 1861–1865.

The opportunities afforded Dr. Joseph Jones for the consolidation and preservation of these statistics, which should prove of equal value and interest to the medical officers of both the Southern and Northern Armies, may be estimated from the following official letter, which we extract from the author's Preface.

CONFEDERATE STATES OF AMERICA,
SURGEON GENERAL'S OFFICE,
Richmond, Va., Feb. 17th, 1863.

SURGEON JOSEPH JONES,
Augusta, Ga.

SIR: Your letter of the 10th inst., as well as the report in the case of Tetanus, have been received.

The opportunities now offered of making a free and thorough investigation as to the nature, history, and pathology of fevers caused by animal effluvia, contra-distinguished from those produced by vegetable exhalations, or malaria, should not be permitted to pass unimproved. Your attention, therefore, is especially called to this class of disease; and you are directed to make a thorough investigation. Besides the mere satisfaction in a scientific point of view, the results are likely to be of the greatest practical benefit to the army.

If additional medical aid is deemed necessary for this purpose, you will communicate the fact to this office.

Very respectfully, your ob't serv't,

S. P. MOORE,
Surgeon General C. S. A.

The *Introduction to the Study of Diseases of the Nervous System should be regarded not so much* as a general introduction to the first volume, as a distinct monograph, the chief design of which is to aid students and Practitioners of medicine in the prosecution of original investigations and researches in the physiology and pathology of the nervous system. In this monograph, Dr. Jones has traced the development and perfection of the various discoveries and doctrines relating to the general and minute anatomy, and the physiology of the cerebro-spinal and sympathetic nervous system. To bring this important and arduous labor to any degree of completion and symmetry, it was manifestly necessary that the author should present analyses of the important works of those observers and writers who have contributed to the greatest extent to our knowledge of the anatomy and physiology of the nervous system.

Prof. Joseph Jones believes that an effort has been recently made in Paris, and reëchoed and repeated in an American garb from a professional chair in New York, to rob Sir Charles Bell, of England, of the merit of his brilliant discovery of the distinct offices of the anterior (motor) and posterior (sensitive) roots of

the spinal nerves. After a careful and thorough analysis of the works of many authors on this subject, Prof. Jones reaffirms Sir Charles Bell's claims to priority, while giving due merit to the labors of Magendie, Alexander Walker, Bellingin, Müller and others.

It would be impossible, in the brief space at our command, to give even an analysis of the closely printed and extended monographs of this volume, each one of which, if printed in medium-sized type and leaded, would form a volume of three hundred to six hundred pages. In order to give some idea of the labors of Dr. Joseph Jones, we will give briefly some of the conclusions of the various chapters composing the treatise on Traumatic Tetanus.

GENERAL CONCLUSIONS, DRAWN FROM THE OBSERVATIONS IN THE NATURAL HISTORY OF TRAUMATIC TETANUS.

1st. The essential phenomena of inflammation were absent. The phenomena were exaggerated manifestations of nervous and muscular actions. An irritation in a distant nervous branch was propagated to the spinal cord, and the disease, after its establishment, appeared to be dependent upon an exalted excitability of the entire spinal ganglia, as manifested in the greatly exaggerated reflex actions.

2d. The increased actions in the nervous and muscular systems, were attended by corresponding changes in the materials composing these structures, thus indicating that the two were intimately connected and were even dependent upon each other in the relation of cause and effect. In these phenomena of the human organism, as well as in the physical and chemical phenomena of the exterior world, we find no exception to the law, that for the production of definite physical, and the *so called vital actions* and results, a certain amount of matter must be chemically altered; that is, be deprived of, or emit, a certain amount of force, inseparably connected with certain forms and combinations of matter.

3d. The phenomena during the active stages of Tetanus, point to a change in the electric conditions and relations of the nerves and muscles.

We will not now discuss the question, as to whether the peculiar spasms of Tetanus were caused by a *pre-existing* change in the conditions and relations of the muscles, or whether they were directly traceable to the transmission of the irritation from the wound; but will confine our attention to the examination of those facts which throw light upon the physical phenomena of the nerves and muscles, during their violent manifestations in Tetanus.

We have discussed at length, in the Physiological introduction, the relations of the muscular and nervous forces, and shown that:

a. There is a close analogy between the structure and mode of action of the electric organs of certain fish, and the nerves and muscles of living animals.

b. Animal life is not possible without constant chemical and physical changes in the molecules of the body; and since such disturbances are always accompanied with the liberation of electricity, we infer that electrical currents exist in all living structures, and that the intensity of these electrical actions varies with the amount and character of the physical actions of the tissues.

c. Electrical currents circulate in all tissues in which active nutrition is carried on, and the electro-motive force, is strongest and at the same time is capable of the greatest and most sudden variations in intensity and direction in the nerves and muscles.

d. There exists, both in the muscles and in the nerves of all animals, a natural electricity, which is manifested under the form of closed circuits, circulating along the muscles, or nerves of the animal, and of which we can collect but a very small derived portion, by the assistance of our instruments; and the preservation of this free electricity is subordinate to the state of life of the animal, and disappears with the cessation of the normal chemical and physical changes characteristic of life.

e. An electro-physiological law of great interest, in the study of the phenomena of Tetanus, has been established by DuBois Reymond, for the motor nerves, and may be expressed thus: the motor nerves are not excited by the absolute amount or density of the current, but merely by the variations which occur in the density of the current, from one instant to the other, and the more considerable the variations in the density of the current, the greater the physiological effects. It results from this, that unstable conditions of the closed, muscular and nervous currents dependent upon derangement of the chemical and physical properties and actions of the molecules of the muscles and nerves, would be necessarily attended by deranged muscular and nervous actions; variations in the density of the currents circulating in the motor nerves, may be attended with either exaltation or depression of muscular action.

f. Contractility is inherent in the muscles; and is not the result of a force communicated to the muscles by the nerves. The muscles do not derive their state of tone, or power of contractility from the cerebro-spinal and sympathetic nervous systems, but possess within themselves all the conditions necessary for the generation of their proper force.

g. The muscular force results from the chemical changes involved in the healthy nutrition of the muscles; the chief influence of the nervous system, therefore, upon the muscular system, is by the disturbances of the electrical condition, and by an in-

fluence upon the nutrition of the muscle, through the variations of the amount of blood circulating through the muscular structures.

h. If in the state of health, the molecules of the nerves and muscles are retained in a particular arrangement, by the vital force, and if under the action of the will, or other causes determining muscular contraction, or relaxation, this arrangement is modified, so as to become similar to the condition of a conductor transmitting an electric current, it is probable that when derangement of the molecules is caused by almost every cause, however slight, capable of disturbing the electric equilibrium, and even beyond all control of the will, and even so powerful in its effects as to rend asunder the muscular structures, there is either a want of proper action of the vital force, in preserving the mutual and definite relations of the molecular forces, or an undue activity in the molecular changes in the nerves and muscles. We have previously demonstrated, that during the active stages of Traumatic Tetanus, there is an increased chemical change of the nerves and muscles; we must conclude, therefore, that the disease is due not only to a disturbance in the electrical conditions and relations of the nerves and muscles, but chiefly to a great augmentation of the intensity of the electrical actions in both nerves and muscles. This view is further sustained by the fact, that the contraction of the muscles in tetanus are far more violent and prolonged than those of health, excited by any cause whatever, internal or external, by the will, or by mechanical stimuli—so violent in fact, that the muscles are frequently ruptured, and that, too, against no other points of action than the bony levers, and in no other action than in that of simple involuntary contractions; and by the equally striking fact that a continuous current of electricity may, when passed in a certain direction, relieve the spasms of Tetanus.

i. If it be true that the nervous force is electricity, or a modification of electricity, and if all the chemical actions in the body develop this force, together with heat, it follows as a necessary consequence, that nerves may be capable of influencing secretion, in virtue of the power which their active force has of exciting chemical change. Thus an impulse originating in the central masses of nervous matter, or reflected from the circumference, may be propagated by changes of the molecules of the nerves, and reproduce its original effects, by transmission to distant organs. We would thus have an example of chemical change in the periphery of the nerves, and in the various organs, whether muscular or secretory, to which they are distributed, analogous to that which takes place at the terminals of the galvanic battery.

In Tetanus, where there is an exaltation of the acts of the ganglionic cells of the gray matter of the spinal axis, constant impulses are sent out to the voluntary muscles, and to the sympathetic, in virtue of the nervous connections between the two

systems; and thus the ganglionic cells of the sympathetic become in turn excited, and the organs to which this system is distributed, such as the kidney, liver, and alimentary canal and heart, are in turn affected.

GENERAL CONCLUSIONS AS TO THE NATURE AND PATHOLOGICAL LESIONS OF TRAUMATIC TETANUS AND OTHER DISEASES OF THE NERVOUS SYSTEM.

From the preceding investigations and researches into the pathological alterations characteristic of Traumatic Tetanus, and other diseases of the nervous system, the following conclusions may be drawn:

1st. The nerves leading from the wound in cases of Traumatic Tetanus, exhibit, in most cases, evidences of congestion, irritation, and in some cases, even inflammation and alteration of texture. Besides the inflammation which is in the nerve at the spot which has been injured, a rosy reddening is produced at irregular intervals in its course by the injection of its neurilemma.

2d. In Traumatic Tetanus, the blood-vessels of the cerebellum; medulla oblongata and spinal cord, and especially of the gray matter of the medulla oblongata and spinal cord, are dilated and congested.

It is possible, by cold and irritants applied directly to the cerebellum, medulla oblongata, and superior portions of the spinal cord, to produce dilatation and congestion of the blood-vessels, and the congestion thus produced is attended with exalted and aberrated action of the cerebellum and spinal axis, and spasms of the voluntary muscles, resembling the abnormal nervous action characteristic of Traumatic Tetanus. We are therefore compelled, in view of these facts, to regard the dilatation and congestion of the small arteries of the cerebellum, medulla oblongata, and spinal cord in Tetanus, as of great importance, and as indicating, not only an increased functional activity in the central ganglionic cells, but also paralysis or arrest of the action of that portion of the sympathetic nervous system which presides over the circulation of the cerebellum, medulla oblongata and spinal cord.

3d. When the dilatation and congestion of the blood-vessels of the cerebellum and spinal axis, characteristic of Traumatic Tetanus, are examined in the light of careful physiological experiments, they appear to be dependent upon some arrest or alteration of the influence supplied to the unstriped muscular fibres of the minute arteries, leading to dilatation of their diametres, and enfeeblement, if not complete arrest of the normal peristaltic actions. The gray cells of the cerebellum, medulla oblongata, and spinal cord are thus supplied in Traumatic Tetanus, with an increased amount of blood, even when there is

no increase in the force and frequency of the heart's action. The sympathetic nervous system, which regulates the circulation of the blood in the minute arteries, appears to be involved in Traumatic Tetanus.

4th. It is difficult to determine the exact relationship of the disturbances in the two systems of nerves, viz.: Whether the irritation is reflected from the wounded surface, first to the ganglionic cells of the cerebro-spinal system, and secondarily to those of the sympathetic in the spinal axis, as well as in the ganglia of organic life, in virtue of the intimate relationship of the two systems, and in virtue of the dependence of the lesser upon the greater, in highly organized animals, for a continuous supply or renewal of nervous force? or whether the influence affects primarily the ganglionic cells of the sympathetic system? It would appear that after the establishment of the state of increased functional activity in the ganglionic cells of the spinal axis, there is at least an enfeeblement of the sympathetic system, and especially of that portion which presides over the circulation of the central ganglionic masses; and the question arises, whether this impairment of its normal functions be due to a diversion of the nerve force ordinarily received from the cerebro-spinal system?

If the vaso-motor nerves be connected with the motor and sensitive ganglionic cells, as well as with sympathetic ganglionic cells in the spinal cord; and if the arteries are normally kept in a due state of contraction, and the capillaries duly retentive of their contents, by the influence propagated continuously from the sympathetic ganglionic cells, then it is evident that if the motor and sensitive cells be over-excited, the nervous influence may be withdrawn from the sympathetic cells, and through them from the vaso-motor system, and engorgement, effusion and alteration of nervous structure results.

When, therefore, the condition of superfunctional activity is established in the motor and sensitive cells of the spinal axis, by the transmission of the irritation along the nerves connected with the injured parts, this very exaltation of nervous action tends to propagate and perpetuate itself by withdrawing the nervous influence from the vessels upon which the ganglionic cells depend for the proper supply of nutritive materials. We are thus enabled to understand why a certain length of time elapses between the reception of the injury and the manifestation of the tetanic spasms.

By these inquiries, and by this chain of reasoning, we are led to the conclusion that the irritation is transmitted along the injured nerve to the motor and sensitive ganglionic cells of the spinal cord, and extends gradually from the point of entrance of the irritated nerve, until the medulla oblongata and ganglionic masses at the base of the brain are involved, and the gradual exaltation of the nervous force in the motor and sensitive cells

is attended with a corresponding diminution in the sympathetic cells, the blood-vessels become dilated and engorged, and with this change we have the full manifestation of the phenomena of Traumatic Tetanus; the disease, therefore, advances slowly at first, and when once established, tends, as it were, to propagate itself.

5th. The continuance of the state of congestion leads to structural alterations of the spinal cord, characterized by increased specific gravity, commencing most generally in the region of the cord in immediate communication with the wounded part; exudation of organizable material from the congested blood-vessels; proliferation of the connective tissue of the medullary substance of the medulla oblongata, of the inferior peduncles of the cerebellum, of the crua cerebri and of the spinal cord, producing a viscous mass abounding in nuclei and nerves progressing to the formation of fibres; exudation of structureless, transparent material in the immediate vicinity of the vessels, forcibly intruding itself into the tissue, and displacing the neighboring parts; escape of blood corpuscles from the blood-vessels replete to distension with their natural contents.

The pathological lesions of the spinal cord in Tetanus are frequently of surprising extent, consisting of disintegration and softening of a portion of the gray substance, which appears in certain parts to be in a state of solution.

6th. The structural alterations of the cord in Traumatic Tetanus are not primary, but secondary; they are the *results* of, rather than the *cause* of, the congestion of the blood-vessels, and cannot therefore be looked upon as the cause of the aberrated, nervous actions. This is clearly shown by the pathological investigations of Insanity and Paralysis; for in these diseases we have similar lesions, without tetanic spasms. And in epilepsy, in which similar lesions to those of Traumatic Tetanus are found in the medulla oblongata, the spasms are separated by long intervals, and a careful analysis of the phenomena of this disease showed that whilst they were aggravated, and perhaps rendered incurable, by the pathological changes of certain portions of the spinal axis, at the same time, these changes followed rather than preceded the establishment of the diseased action. The lesion of the spinal cord in Tetanus, consisting of exudations and disintegrations, are similar in character to those observed in Insanity, Paralysis and Epilepsy, and clearly depend, as in these diseases, upon a morbid state of the blood-vessels of the cord. Whilst therefore these lesions may intesify the symptoms, and render the disease incurable, they are by no means neceasary to the manifestation of the spasms; and it is highly probable that in these cases of Tetanus which recover, they are either not present or are present only in a slight degree.

7th. The following appears to be the order of the lesions of the nervous system, as deduced from the preceding investigation:

1st. Peripheral irritation of the injured nerves.

2d. Extension of the peripheral irritation to the ganglionic cells of the segment of the spinal cord connected with the injured nerve.

3d. Extension of the irritation to other segments of the spinal cord, and especially to the medulla oblongata.

4th. Exalted action of the ganglionic cells of the spinal axis, arising either from an extension of a similar state along the injured nerves from the periphery, or from reflex action on its blood-vessels, excited by the injured nerves.

5th. Congestion of blood-vessels, hyperæmia, and morbid state of blood-vessels of spinal axis, and especially of gray matter of medulla oblongata and superior portion of spinal cord.

6th. Exalted reflex actions, morbid excitable conditions of gray substance of cord and cerebellum, and tetanic spasms, trismus, emprosthotonos, etc.

7th. Exudations and transmigrations of colorless corpuscles from the distended vessels, and structural alterations of nerve cells and fibres.

8th. The character and extent of the pathological lesions discovered in the spinal axis after death from Traumatic Tetanus will depend in large measure upon the duration of the disease. Thus, if the patient dies, in the earlier stages, from sudden spasm of the respiratory muscles, or of the epiglottis, little else will be discovered besides dilatation and congestion of the blood-vessels of the injured nerve, and of the medulla oblongata and spinal cord, and especially of the gray matter of the spinal axis.

The diverse views held by writers upon the pathology of Traumatic Tetanus (a large number including all those who have made careful sections and microscopical examinations of the cord, holding to the existence of distinct recognizable lesions; others who have only superficially examined the brain and spinal axis, giving forth confused, contradictory, and unreliable assertions as to the purely functional nature of the disease,) are clearly referrable to the stage of the disease at which death took place, and to the mode in which the post-mortem examinations were conducted.

9th. Pathological alterations have been detected in the sympathetic nervous system, in some cases of Traumatic Tetanus; but farther and more careful observations are needed to determine the character and uniformity of these changes; for the number of cases in which the organic system of nerves has been examined is comparatively small.

10th. *Certain external conditions, as sudden changes of temperature, extremes of heat and cold, and variations in the moisture of the atmosphere, appear evidently to induce such changes in the wound, and in the nervous system, and in the entire organism, as favor the development and progress of the disease.*

* * * * * *

A careful comparison of the phenomena of Traumatic Tetanus

with the symptoms of poisoning by such powerful agents as Strychnine, Prussic Acid, and Cyanide of Potassium and Woorara, leads to the conclusion, that this disease arises from the transmission of the irritation in the wounded surface and nerves to the central gangliomic cells of the spinal axis, and that if the irritation be continued for a sufficient length of time, structural alterations of the spinal axis are established.

Traumatic Tetanus, although influenced in its origin and progress by external circumstances, and the state of the system at the time of the reception of the injury, is not caused by the generation within the system of a poison, which acts like Strychnine, or Prussic Acid, or Woorara.

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We are compelled to refer readers to the work under review, for a large amount of interesting observations under the heading "Analysis of the results of treatment in four hundred and twenty cases, of Traumatic Tetanus." The following epitome of measures of treatment is all that we can admit.

The local measures which appear to be most suitable for the arrest of Tetanus in the earliest stages, are:

a. Counter irritation, with the Tincture of Iodine and Ointment of Iodine applied within and around the wound. This application should be followed by warm poultices of flaxseed or bread and sweet milk, to which Tincture of Opium should be added. The poultices will in like manner tend to promote suppuration in the wound. During the past twenty years I have used with good results the Tincture of Iodine as a local application to such wounds of the extremities as are known to be most frequently followed by Traumatic Tetanus, as penetrating wounds of the hands and feet inflicted by splinters, glass and rusty nails. When poured directly into the wound, even within a few moments after its reception, it produces no increase, but rather a diminution of pain. The application should be repeated every day, or every other day, as long as the wounds are painful and inflamed. In dissecting wounds also I have found no agent superior to the Tincture of Iodine for the arrest of the poisonous action. In some cases a saturated solution of Carbolic Acid in Alcohol may be used as a local application immediately to the wounded surfaces. An ointment composed of two drachms each of the Iodine, saturated solution of Carbolic Acid in Alcohol, and Tincture of Opium, mixed thoroughly with from one to two ounces of Simple Cerate, has proved in my hands a useful application to wounds of this description.

An efficient sedative application to the surface of the injured extremity and to the back over the region of the spine, will be found in a liniment composed of equal parts of Chloroform, Gum Camphor and Tincture of Opium, mixed with from two to four parts of Olive Oil. The Camphor should first be dissolved in the

Chloroform and this solution mixed with the Tincture of Opium and Olive Oil. The injured limb may be rubbed with this, and also enveloped in a piece of soft lint saturated with it.

b. The Careful Removal of all Foreign Bodies from the Wound.—The importance of a thorough examination of the wound and the removal of all foreign bodies, was forcibly illustrated during the recent civil war, by the following cases, which were treated in the General Hospital, at Charlottesville, Virginia:

In the first case, after death, a piece of leather cartridge box was found buried in the triceps muscle. The ball had passed through the arm; the probe in like manner passed readily through from the point of entrance to that of exit, and hence the extraneous body was not discovered during life. In this case the spasms appeared at first to be confined to the muscles of the arm, and Dr. Cabell at first supposed that it was a case of "traumatic spasm." The spasms were confined to the wounded arm for two or three days before they affected the general system. The second case manifested local spasms similar to those of the case just recorded, the spasms being confined to the wounded limb. After the removal of a piece of cloth from the wound of the leg, the patient recovered. It appears to be a fair inference that if, in the first case, the piece of leather had been removed from the arm before the spasms became general, the patient would, in like manner have recovered. Such cases support, in the clearest and strongest manner, the theory that traumatic tetanus is primarily, in its earliest stages, dependent upon local lesions of the nerves, the irritation being gradually propagated to the segment of the cord with which the injured nerve is connected, and from thence propagated to the ganglionic cells of the entire spinal axis.

c. Actual Cautery.—The application of the actual cautery to the wounded surface appeared to be attended with beneficial results in certain cases of traumatic tetanus, and Baron Larrey was the most strenuous advocate for the its use. Cases 95, 96, 97, 98 and 99 illustrate the beneficial effects of the actual cautery. It is probable, however, that the Tincture of Iodine, and the saturated solution of Carbolic Acid in Alcohol will accomplish as efficient and satisfactory results, and with less pain and inconvenience to the patient In case 342, the application of the actual cautery (a heated poker pressed into the wound), was said to have been attended with a sensation of pleasure rather than of pain, the patient exclaiming, "What are you doing? Delightful! You make me feel as if I were in heaven!"

d. Section of the Injured Nerve, Amputation, and the Application to the Wound or Cicatrix of the Actual Cautery, have, when employed in the earliest stages, before the spinal axis has been seriously involved, been attended with apparent benefit in arresting the farther progress of the disease.

Such measures are only valuable when the irritation is chiefly confined to the injured nerve. After the irritation has been fully

established in the spinal axis, it is doubtful whether amputation, section of the nerve and the actual cautery will materially alter the progress of the disease. We have carefully recorded the historical facts relating to section of the nerves and amputation, as proposed by William Cullen and practiced by G. Hicks, Baron Larrey and others. (See cases 60, 91, 93, 94, 112, 118, 132, 137, 172, 178, 181, 228, 257, 266, 329, 338, 343, 345, 356, 361, 367, 370, 371, 372, 385, 402, 447, 470). In the employment of such measures, the physician must be governed by the general symptoms, as well as by the nature and position of the wound.

2. Absolute rest of the injured part; and quiet rest for the patient in a dark room of regulated temperature. All draughts of cold air, and all extremes of heat and cold, as well as sudden changes should be avoided. The strictest quietude should be insisted upon. If the patient has been accustomed to the use of tobacco in any form or mode, it should not be discontinued. It is evident that in certain cases the severity and violence of the tetanic spasms and contractions, will preclude the use of tobacco in chewing or smoking.

3. The bowels should be kept open by efficient purgatives, as Croton Oil, Calomel, Castor Oil, Epsom Salts, and the compound Cathartic pill of the United States Pharmacopœia. The action of the purgative may be promoted by the use of Enemas. Infusion of Tobacco may with benefit be combined with the clyster. Simple, but efficient enema may be quickly and extemporaneously prepared, by mixing one fluidounce each of Castor Oil and Molasses, half an ounce each of common Salt and Sulphate of Magnesia, and one drachm of Turpentine with one pint of tepid water. If the infusion of Tobacco be employed as the vehicle for the purgatives administered by the rectum, half a drachm of the dried leaf should be boiled in a pint of water and strained. The purgative above indicated may be added to the infusion of Tobacco, or it may be administered alone. The infusion of Tobacco may be employed twice or three times, daily, but its effects should be carefully watched; and its depressing action upon the heart and circulation generally, counteracted by stimulants and nutritious diet.

4. The strength of the patient should be sustained throughout the disease, by simple but nutritious diet, consisting chiefly of milk, milk punch, beef tea, egg-nog, boiled milk and rice, arrow root and thick corn and rice gruel.

When Traumatic Tetanus is fully developed, the physician should ever bear in mind the important facts, that the greatest sources of danger are from sudden arrest of respiration from spasm of the respiratory muscles and epiglottis, and from the continuous and progessive exhaustion of the powers, consequent upon the continuous expenditure of the nervous and muscular forces, the loss of refreshing sleep, and the imperfect nutrition of the body, consequent upon the great difficulty in many cases, of taking nourishment. In those rapid cases which prove fatal,

in the course of from one to four days after the onset of the disease, the cause of death is most generally *asphyxia*; and in every case of Tetanus the favorable or unfavorable issue will depend to a great extent upon the set of muscles involved. It should also be carefully borne in mind that the chances of recovery increase with every day of prolonged life. The powers of the patient should, therefore, be continuously and carefully supported by nutritious diet, (administered freely by the rectum in the form of beef tea, if the patient is unable to swallow), and alcoholic stimulants; when asphyxia occurs, artificial respiration after the method of Marshall Hall, should be instituted.

5. In the constitutional treatment of Traumatic Tetanus, those remedies should be employed, which exert the most decided sedative effects upon the spinal system, and which promote in the most efficient and least injurious manner profound sleep.

Then follows a most extended analysis of the immense list of remedial agents which have been employed, ending with the following summary.

In conclusion, in the present state of medical knowledge, in the treatment of Traumatic Tetanus, the highest places must be assigned, and the greatest importance attached to the following remedial agents:

Chloral Hydrate.
Calabar Bean.
Chloroform.
Sulphuric Ether.
Cannabis Indica.
Tobacco.
Bromide of Potassium.
Opium.

Important advances in the Therapeutics of Traumatic Tetanus will be made, when in its treatment all empirical remedies are discarded, and the attention of the entire profession is concentrated upon two or more remedies, as Chloral Hydrate, Calabar Bean and Bromide of Potassium.

The same laborious research, supplemented with carefully recorded personal investigations of numerous well-studied cases, and many original experiments, is shown in all the other chapters on the various subjects enumerated in the title page. The volume is indeed a rich mine of medical lore, and we venture the prediction that many will be the miners who, for many years to come, will seek galleries to add to their own store of professional knowledge. It will stand high as a work of reference.

The printers have done their part pretty well, but we would have preferred a larger type. S. L.

Hermaphrodism, from a Medico-Legal Point of View. A Thesis presented to the Faculty of Medicine, Paris, 1874, for the degree of Doctor of Medicine, by Basile Poppeses. Translated from the French by Edw. Warren Sawyer, M.D. (Harv.), Lecturer on Obstetrics, Rush Medical College, Chicago. Pp. 54.

This paper presents in convenient shape what is known and recognized in regard to those malformations of the genital organs which result from arrest of development at an early stage of intra-uterine life. In addition some interesting cases are contributed, which illustrate certain unusual features in hermaphrodism. S. S. H.

The Sanitary Condition of Boston. The Report of a Medical Commission, consisting of Charles E. Buckingham, M.D., Calvin Ellis, M.D., Richard M. Hodges, M.D., Samuel A. Green, M.D., and Thomas B. Curtis, M.D., appointed by the Board of Health of the City of Boston, to investigate the sanitary condition of the city. 8vo., pp. 199. 1875.

The investigation indicated above originated in a request from the Mayor of Boston to the Board of Health, and was occasioned by a marked increase in the death-rate in 1872 and 1873. In 1871 the mortality was 23.5 per 1000 living inhabitants, while in 1872 it was 30.4, and in 1873, 28.5.

The scope of inquiry pursued by the committee was quite extensive, having reference, first, to the truth of the allegation of an excessive death-rate; then to the ages and nationalities thus affected; the nature and causes of the diseases thus operating, to what extent and how preventable; and finally to measures for prevention.

These inquiries show that the foreign-born population exhibit the highest death-rate, and that this varies with nationality as regards total mortality and that resulting from particular diseases; that the increase has fallen most heavily on the period of infancy and early childhood, especially upon the children of foreign parents; and that the late excess has largely been due to small-pox, scarlatina, and diarrhœal complaints incident to hot weather, which was unusually marked in 1872.

Not the least valuable portion in this volume is the correction of certain fallacies in the arrangement of vital statistics. They are to be found in estimating the death-rate and birth-rate

among the native and foreign-born elements of the population respectively, which are usually made in ratio to the number living of each class without reference to their distribution by age. In this way we lose sight of the fact that the foreign-born population has much more than its share of persons in the middle period of life, when the birth-rate would be high and the death-rate low; while the infant mortality belonging to this element of population would be excessively high.

The report is undoubtedly a valuable contribution to sanitary science, and especially as regards the mode of arranging vital statistics. S. S. H.

Transactions of the Michigan State Medical Society for the Year 1875. Pp. 84.

The session was held at Detroit, June 9th and 10th. The most important feature in the proceedings was the adoption of the following resolution:

Resolved, That the Regents of the University are hereby requested by the State Medical Society to make, as soon as practicable, a full three years' graded course of study and lectures obligatory upon all students graduating in the Medical Department; and that the requirements for admission into this department be made equal to those for admission into the Scientific Department.

It was supported by some remarks from Prof. E. S. Dunster, of the Medical Faculty of the University, in which he stated that they had already put in operation a preliminary examination and rejected several applicants for admission to the Medical Department. All this promises well for Michigan; and, if the people are not very careful, they will have better doctors than they deserve.

Several short papers were read, which need not be noticed here. Perhaps the doctors of the Lovely Peninsula, whose coat of arms is displayed on the title page, have better business than writing. If so, we would like to be in their company.

S. S. H.

Physicians' Combined Call-Book and Tablet. By Ralph Walsh, M.D., of Washington, D. C.

This also includes lists for Obstetrical and Vaccination en-

gagements, and pages for addresses of Nurses. The most striking feature is, that it can commence and end with any date, in this respect resembling the Visiting List of the late Dr. S. W. Butler, of Philadelphia. S. S. H.

American Association for the Cure of Inebriates. Proceedings of the Sixth Meeting, held at Hartford, Conn., September 28th, 1875. Pp. 98.

The first 14 pages are occupied with the minutes of the proceedings. During the session several papers were read by members, which are printed in this volume.

The first of these is on the Etiology of Inebriety, by T. D. Crothers, M.D. Hereditary influence receives credit for a large production of intemperance. Afterwards he proceeds to consider the exciting causes. The number recognized is very great; almost everything capable of disturbing the nervous equilibrium is in fact considered a possible cause—debilitating illness, shocks and injuries, excessive labor and fatigue, natural weakness of structure, etc. He remarks: "Generally women are more liable to inebriety than men, because they have feebler organization, and suffer more from functional disorders and organic degenerations." He does not explain, however, how it happens that the number of male inebriates vastly preponderates over the female. On the whole we think he draws out the thread of his argument rather too fine for the staple of his subject, as is apt to be the case when one is possessed *by* rather than *of* an idea.

The annual address was delivered by Dr. Joseph Parrish, the President. He treats of intemperance severally as a vice, a crime, and a disease. The last view of the subject naturally leads to the consideration of asylums for its treatment, of which he is, of course, an advocate. The recent legislation in Connecticut is mentioned with approval. The act enunciates that one is properly liable to be deprived of his liberty, when he has lost self-control. This view we are ready to accept in the abstract, and perhaps we shall soon be sufficiently civilized to put the principle safely in practice. The act then provides that a person may be committed to an asylum for a limited period by judicial authority, which is also well enough. The difficulty is, that the benefits of this scheme must be confined to those who are able to pay for their support at the asylum, since it is plain

that the State could not undertake to keep all its inebriates at the public expense.

We have elsewhere expressed the opinion that the proper course is to interdict inebriates of their civil rights, and subject them to guardianships, as in case of lunatics and imbeciles, first temporarily, and then permanently if necessary. If this restraint over habits of excess is inadequate, then let the individual be deprived of personal liberty. A person of means may be committed to an asylum, as now provided. If a life of industry is required for the support of the subject or his family, let him be confined at hard labor for this purpose, but not among common criminals. The bare knowledge of liability to such treatment would have a powerful restraining influence over inebriates, just as the certainty of punishment operates as a restraint on criminals.

Several other papers follow, not without merit, but space is wanting for their consideration. The subject of intemperance is one of vast importance, and its discussion will lead to the evolution of truth as a practical solution eventually. But, in our opinion, the part to be played by inebriate asylums, as constituted at present, will be a minor one. S. S. H.

Hospital Plans. Five Essays relating to the Construction, Organization and Management of Hospitals, contributed by their authors for the use of the Johns Hopkins Hospital, of Baltimore. 8mo., pp. 353. New York: William Wood & Co. 1875.

These essays were contributed by Asst. Surgeon John S. Billings, U.S.A., Norton Folsom, M.D., Prof. Joseph Jones, M.D., Univ. La., Caspar Morris, M.D., and Stephen Smith, M.D., who were solicited by the Board of Trustees of the Fund to perform the duty. The objects contemplated by the beneficient founder, whose name is indicated above, are the establishment of a University, a Hospital, and in connection with it a Medical College, and an Asylum for destitute colored orphan children. For the foundation and support of the Hospital and Medical College the sum of $2,000,000 was appropriated by the donor, which has since been increased to $3,000,000. The essays in this volume relate to plans of construction and administration of these two institutions, and are freely illustrated with drawings. The contributors were selected for their well-known experience in the

management of hospitals, and it has been thought by the Trustees that these essays might be of service to other parties engaged in similar undertakings; consequently they are given to the public in this form.

It is unnecessary here to commend the enlightened liberality of the donor or the prudence of the trustees of his gift. With regard to the Hospital, there can be no doubt that its construction and administration will leave little to be desired in respect to plan and execution. The uncertainty lies with the Medical School. As is properly observed by Dr. Billings, there is no want of schools of ordinary grade, and it is very desirable that the present opportunity should not be lost to establish one of high standing. To this end he suggests a preliminary examination for admission, graded classes, a four years' course, and successive examinations. This plan has already been adopted at Harvard, and has been found to work well.

Since the means afforded, both in money and in hospital privileges, are likely to be ample, we would suggest, in addition to this plan, the establishment of post-graduate courses of study, giving medical men an opportunity to pursue systematically advanced studies and special branches of medical science and art; not that facilities now are altogether wanting for this kind of application, but schools of such grade cannot be made self supporting, and the occasion ought not to be lost to take advantage of the foundation here provided. Baltimore already has two medical schools, and certainly does not need a third of the same sort. One of the grade here indicated would be an honor worth having, and, better still, would be a priceless boon to those who have a desire to rise above the general level of professional attainments.

In addition to the plans offered by the contributors named above, the architect, Mr. John R. Niernsée, F.A.I.A., has furnished a plan with drawings and a description of the "Johns Hopkins Colored Orphan Asylum," for 300 children; also the same with reference to an octagonal system of pavilions, which he suggests to the trustees as economizing space—that is, affording increased capacity over rectangular structures.

The book is printed in clear type on paper of extra quality, and the authors' drawings have been engraved in fine style. In addition to its high intrinsic value, it is therefore rendered very attractive. S. S. H.

Transactions of the Pathological Society of Philadelphia, Volume Fifth, containing the Report of the Proceedings for the Year 1874, and from January, 1875, to July, 1875. Edited by Jas. Tyson, M.D., Hospital Professor of Pathological Anatomy and Histology in the University of Pennsylvania, etc.; Recorder of the Society. Philadelphia: printed for the Society by J. B. Lippincott & Co. 1876.

An interesting volume, containing lists of specimens submitted to the Society, with more or less extended reports of clinical histories and autopsies. We are indebted to R. G. Eyrich, Bookseller and Stationer, Canal street, New Orleans, for this volume.

Transactions of the Twenty-Fifth Anniversary Meeting of the Illinois State Medical Society, held in the city of Jacksonville, May 18th, 19th, and 20th, 1875. Chicago: Fergus Printing Company. 1875.

This volume contains a number of interesting and valuable papers. We instance among them a report on the Treatment of Whooping Cough with Quinine. The supposed mode of action of the drug consists in the destruction of the fungi which are believed to occasion the disorder. The reporter, Dr. Charles W. Earle, of Chicago, favors the mode of administration formerly suggested by Dr. Dawson, of New York: 1. "Give the quinine (sulphate or hydrochlorate) dissolved by acid in pure water only. For children under 3 years, from grs. v. to viij., and for older children and adults, from grs. x. to xij., to the ounce. 2 Give not less than a teaspoonful *every single* hour, or at the longest, every two hours, during the day, and whenever cough comes on in the night. 3. Give nothing afterwards, 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 the quinine is pure and thoroughly dissolved. To which I would add, as a valuable adjuvant, the hand atomizer. The quinine, dissolved in acid and water, should be introduced through a glass tube—not metal."

There are other interesting reports on "Small-Pox," "Shortening in Fracture," and "Hernia," etc.

It seems quite unfortunate that the rules of medical organizations or their views of policy, or it may be, feelings

of courtesy, should require the insertion among the *res gestæ* of a scientific association, of papers exhibiting testimony as assailable as that found in the statistics upon which is rested the "New Plan of Treatment of Scarlatina, and How to Prevent its Spread." The following is the "new plan of treatment." "When called to a child, say from one to five years of age, with high fever, swelling of the glands of the throat, scarlet redness of the skin, etc., I at once order the whole body bathed in a warm solution of carb. soda, and soaked from the crown of the head to the end of the toes with old salt bacon grease, and give the following: ℞—Potass. iodide, ʒj, syrup scilla, f℥ij, tinct. verat. viride gtt. ij. M. S. Half a teaspoonful more or less, according to age, every second hour, until the temperature is greatly abated, the doses to be gradually decreased. At the same time I order a piece of fat salt pork, applied from ear to ear, around the throat, heated as much as can be endured, which is to be taken off, heated and reapplied, every third or fourth hour, and a saturated solution of common salt in equal parts of cider vinegar and honey, to be used as often as possible as a gargle." The reporter then states, *mirabile dictu*, that "we met over two hundred and fifty cases of *scarlet fever*, ranging from the most malignant to the mildest possible forms of the disease; of these not one proved fatal" where the above method of treatment was adopted at the outset and carried out faithfully. Very few experienced practitioners will accept these statistics as being altogether free from flaw or prejudice.

Zell's Popular Encyclopædia and Universal Dictionary: History, Biography, Geography, Sciences, Arts, Language. Edited by L. Colange, L.L.D. New and revised edition. Philadelphia: Baker, Davis & Co. 1875.

We have in a previous number called attention to this admirable work. We are just in receipt of Nos. 9 to 12 inclusive, of the new edition. No. 9 contains a new map of California, Nevada, Oregon, Washington, Idaho, Utah, Arizona, and part of Montana. The new edition is to contain eighteen similarly colored and well executed maps, besides an addition of 200 pages of new matter. The work furnishes a full and accurate reflex of the most advanced progress in all departments of learning. We

heartily commend it to our readers. It is to be completed in 64 numbers, at the low figure (for so immense a work) of fifty cents a number.

Extra-Uterine Pregnancy: its Causes, Species, Pathological Anatomy, Clinical History, Diagnosis, Prognosis and Treatment. By John S. Parry, M.D., Obstetrician to the Philadelphia Hospital; Physician to the Department for the Diseases of Women in the Presbyterian Hospital, etc. 8vo., pp. 276. Philadelphia: Henry C. Lea. 1876.

As a basis for this work, the author has made a study of five hundred cases of extra-uterine pregnancy, and his aim has been to present in a systematic treatise the result of his analysis. Frequent reference is made, throughout the work, to the most noted authorities in obstetric medicine, and it may fairly be considered an embodiment of the literature of the subject, which has hitherto been too scattered to be available to the great body of the profession.

The work is divided into thirteen chapters, of which the first treats of the Causes of Extra-Uterine Pregnancy; the second, of the Classification of Misplaced Gestations; the third and fourth, of Pathological Anatomy; the fifth and sixth, of Symptoms; the seventh, of Terminations and Mortality; the eighth, of diagnosis; the ninth, of Prognosis; and the remaining four, of Treatment.

As space is wanting for analysis of the entire volume, and diagnosis and treatment are the points of most practical importance, these are selected to illustrate the author's views.

Having acknowledged the general difficulties which lie in the way of diagnosis of this accident, both in general and especially of distinguishing one form from another, he decidedly expresses his disapproval of the use of instrumental means for this purpose. In support of his view he adduces disastrous examples of resorting to exploration by the trocar and the aspirator, in which death followed from peritonitis and septicæmia.

Rupture of the cyst, which usually occurs in an early stage of gestation, is almost invariably fatal; and the author expresses his astonishment that no active interference by surgical means has yet been resorted to, in order to avert the fatal catastrophe. The credit of recommending gastronomy, in order to tie the bleeding vessels or remove the entire sac, is ascribed to our

countrymen, Drs. Harbert and Stephen Rogers, and the authority of such high names as Meadows, Hewitt, Greenhalgh, Playfair, Kœberle, Béhier, Schrœder and Atlee, is quoted in support of the operation.

Further on an analysis is exhibited, to show the comparative results of operative interference at or beyond the term of natural pregnancy. Of the 500 cases considered in the work, 248 went to or beyond term. The average mortality among these 248 is shown to be 50 per cent.; but, when the pregnancy terminates at the ninth month, it is found to rise to more than 76 per cent. Sixty of these 248 women were subjected to various operations, of which 43 were gastrotomies. The mortality, excluding three cases in which the operation was manifestly improper, was found to average 38.33 per cent. Excluding the 60, the mortality among those not operated on will average 52.65 per cent., thus showing a considerable margin in favor of operative interference. How far this calculation should be modified to allow for selection of favorable cases to operate on, is not conjectured by the author, and the reader must judge for himself. If any allowance is to be made on this ground, it will not leave a great percentage of gain for surgery.

Our impression of this work, as a whole, is quite favorable. Its conception is in accordance with the wants of obstetric medicine, to collect in one volume what it is needful to know on the subject; and the performance of the task has been as faithful and complete as could be reasonably desired. S. S. H.

Inhalation in the Treatment af Disease; its Therapeutics and Practice. A Treatise on the Inhalation of Gases, Vapors, Fumes, Compressed and Rarefied Air, Nebulized Fluids, and Powders. By J. Solis Cohen, M.D., Lecturer on Laryngoscopy and Diseases of the Throat and Chest in Jefferson Medical College, etc. Second edition, revised and enlarged, with many new illustrations. 12mo., pp. 392. Philadelphia: Lindsay & Blakiston. 1876.

The work is divided into four parts, of which the first treats of the inhalation of airs, gases, vapors and fumes. The list of agents thus used is very large, and most of this part, comprising 171 pages, is occupied with the therapeutic applications of these remedies. References to authorities are very numerous,

and thus we have rather a compendium of the experience of various observers than a statement of the author's own knowledge.

In part second is considered the inhalation of nebulized fluids or sprays. Here various instruments are described and figured, the method of their use is explained, experiments are related, proofs of penetration of the medicated liquids to the intimate structure of the pulmonary apparatus are adduced, and the articles suitable for use enumerated with their applications.

Part third relates in a similar manner to the inhalation of powders, and part fourth to medicated atmospheres; but the two last subjects are treated briefly.

Dr. Cohen admits a partiality for medication by inhalation, and would extend its application far beyond the limits generally practised. Much of the testimony in favor of numerous agents he does not undertake to vouch for, and it is evident that it must be received with great caution. While this plan of medication can be traced to a high antiquity, it is clear that the fashion at present inclines to extension of its use; and it is important that practitioners should become acquainted with its methods, applications and therapeutic agents. The author has given the subject much attention, and his little work is the best guide on the subject that has come to our notice. As such we cordially recommend it. S. S. H.

Insanity in its Medico-Legal Relations. By A. C. Cowperthwait, A.M., M D. 8vo., pp. 80. Philadelphia: J. M. Stoddard & Co. 1876.

This little work is divided into seven chapters, of which the first is introductory, while the remainder respectively treat of the Pathology, Classification, and Diagnosis of Insanity, the Criminal Responsibility of the Insane, Epileptic Insanity, and Treatment of the Insane.

The author's views on the pathology of insanity are consonant with those now generally accepted by medical men—that the affection in short is but a symptom of cerebral lesions, though the precise nature of the lesions is not yet satisfactorily determined.

The classification of Esquirol, Maudsley and Hammond are

exhibited, and preference is given to the last, which is based upon the division of the mind into such elementary faculties as perception, intellect, emotion and will.

Chapter fourth gives directions for the examination of those suspected of being insane.

The following chapter is the most important of all in the plan adopted by the author. His main object is to point out the defects of the doctrines hitherto enunciated by the courts in regard to the responsibility of lunatics for their actions. It is unnecessary to make particular mention of his opinions and arguments, as they are in accordance with those to be found in the writings of the best authors of the day on Medical Jurisprudence and Insanity.

The chapter on Epileptic Insanity is important, as showing the liability of epileptics to violent seizures of emotional insanity, which seem in fact to be explosions of cerebral force, corresponding to the spinal explosions witnessed in the usual form. This subject is too little understood by the public at large, and particularly by the legal portion of it, and there is no doubt that fatal mistakes have thereby occurred in the administration of criminal justice.

The chief merit of this little work is the convenience of small compass and limited field of inquiry, for it contains nothing new or that may not be found in the more extended treatises on Insanity and Legal Medicine. An occasional violation of rules of syntax detracts from the otherwise agreeable effect of the author's style. S. S. H.

Transactions of the Texas State Medical Association. Seventh Annual Session, 1875, held in the City of Austin, April 6th, 7th, 8th and 9th. Pp. 224.

The President's annual address, pronounced by Dr. A. G. Clopton, relates chiefly to the history of medicine.

A Report on the Science and Progress of Medicine follows, by Dr. D. R. Wallace. Some of the most prominent points are his advocacy of the doctrine of change of type in disease and a plea for the importance of therapeutics in medicine.

Two papers are contributed on Malarial Hæmaturia, one by Dr. T. J. Heard, the other by Dr. E. P. M. Johnson.

The former studied the subject by sending a list of questions to practitioners in various parts of the State, and thus he reflects the opinions of many. At the same time he announces some very sensible views on the causation and prevention of the disease. Among the measures recommended by him may be mentioned the improvement of the dietary by the addition of fresh meats, vegetables, and fruits, the cultivation of the eucalyptus globulus, and the adoption of cistern water for drinking and culinary purposes.

Space fails to give even a passing notice to most of the papers, which compare very favorably with those found in similar reports. A little more attention to the proof-reading would have eliminated some unnecessary errors in orthography; but this volume is a marked improvement on its predecessor, and the State Association of Texas needs no encouragement to go on in the work which they have undertaken. Though they have not yet succeeded in obtaining from the Legislature authority for acting as a State Board of Health, continued effort in laboring with that body will be sure to attain the object aimed at, and then their means of usefulness as an association will be doubled.

S. S. H.

Transactions of the Colorado Territorial Medical Society, at its Third and Fourth Annual Sessions, held at Denver, Colorado, June, 1874, *and June,* 1875. Pp. 77.

Besides the minutes of the proceedings, the volume contains a few papers, mostly clinical and quite brief. Under this head we notice two by Dr. F. J. Bancroft, which offer points of interest. On the subject of Drainage of Pulmonic Cavities, he gives several instances where most decided benefit seemed to be derived from drainage effected in two cases by spontaneous fistulous openings, in another by a gun-shot wound, and in another by an incision. In his other paper he relates how he afforded permanent relief to the vomiting of pregnancy, which had become so urgent that he had commenced dilating the os uteri preparatory to inducing abortion. The dilatation was marked by complete subsidence of nausea, and the patient went successfully to term.

Dr. Thomas E. Massey speaks with remarkable candor of the climate of Colorado. While claiming great advantages for it in asthma, pulmonary consumption, and malarial cachexia, his

praise stops here, and he admits that the dry, sunny atmosphere is not preservative of beauty nor generally conducive to longevity.

Dr. Eug. C. Gehrung relates his success with compression of the joints in articular rheumatism, in conjunction with the exhibition of propylamin, and inclines to give more credit to the local than the internal feature of the treatment. He applies bandages snugly from the extremity of the limb over and beyond the affected joint.

It is an encouraging sign of health in the body medical of a new territory, to see its members thus organizing for their common improvement and the public good; and this example is a special reproach to the profession in Louisiana, where corporate vitality is still in the embryonic stage. S. S. H.

A Series of American Clinical Lectures. Edited by E. C. Seguin, M.D. *Vol. I., No. XI.—On the Diagnosis of Diseases accompanied with real or apparent Paraplegia without marked Muscular Degeneration.* By H. C. Wood, M.D., Clinical Professor of Diseases of the Nervous System in Medical Department, University of Pennsylvania. *No. XII.—On the Nature of the Gouty Vice.* By W. H. Draper, M.D., Physician to the Roosevelt Hospital, and Clinical Professor of Dermatology, College of Physicians and Surgeons, New York.

The first of these lectures necessarily covers a large extent of territory, and the matter consequently is much condensed. Though a valuable essay for the medical man somewhat familiar with the maladies in question, we consider it quite above the comprehension of undergraduates, and therefore not well adapted for the purpose for which it seems to have been prepared—delivery to a medical class.

The other lecture is the most lucid exposition of the pathology of gout, as connected with imperfect and morbid processes of nutrition, which has met our observation. The therapeutical feature of the discourse is correspondingly clear and satisfactory. As a class-room performance it must have been both interesting and profitable, and to the medical reader it will prove an instructive lesson. S. S. H.

On Alcohol; a course of six Cantor Lectures delivered before the Society of Arts. By Benjamin W. Richardson, M.A., M.D., F.R.S., etc. 12mo., pp. 190. New York: The National Temperance Society and Publication House. 1876.

This publication was obviously intended as a temperance tract; and, as the lectures were prepared for a popular audience, in a style remarkably lucid and free from technicalities, it is well adapted to its purpose. A preface is contributed by Dr. Willard Parker, of New York, who makes a brief exhibit of the cost of intemperance in the pauperism and crime engendered by it.

The lectures are six in number, of which the fourth is the one of most interest to the medical reader, treating of the Position of Alcohol as a Food; Effects of Alcohol on the Animal Temperature; Hygienic Lessons. Even here, however, it is apparent that the distinguished author is writing for non-medical readers, as not a word is said of the use of alcohol in the treatment of continued fevers and of pulmonary consumption. It may be inferred that he must admit its value in these diseases, but finds it expedient to ignore the fact with his hearers.

As a food, he observes, "It does not certainly help to build up the active nitrogenous structures. It probably does not produce fatty matter, except by an indirect and injurious interference with the natural processes." As a heat-producing agent, he considers alcohol a failure, because bodily temperature is actually reduced after a brief period of vascular excitement. He denies that it is transformed by oxydation into carbonic acid and water, because these products are not increased by its use; and considers the transformation to be into some other substance, probably aldehyde. While admitting that it really undergoes a partial oxydation, as he does, it is to us incomprehensible how he can escape the conclusion that this process must generate heat. This view is quite compatible with the fact that the ingestion of alcohol is attended with lowering of temperature of the body, and is accounted for on the supposition that the consumption of alcohol dimishes waste of the adipose tissues of the body in diseases attended with deficient nutrition, and in health diminishes the want and consumption of food.

On the whole, it is perhaps not quite fair to subject these lectures to a strict scientific criticism, as it is likely that Dr. Rich-

ardson would have made a somewhat different treatment of the subject for a medical audience. S. S. H.

The Protection of the Public Health. Report of the Committee. By R. H. Harrison, M.D., Chairman.

The report forms a portion of the Transactions of the Texas State Medical Association for 1875, already noticed in this number, and has reference to the project of constituting the Association a State Board of Health. It contains a copy of the proposed act with commentaries on the same, and a history of the effort with the Legislature to obtain its enactment—thus far without success.

If they will but profit by the example of the woman in the parable, who gained her cause with the unjust judge by her importunity, success will eventually reward their perseverence.

S. S. H.

Cholera Epidemic of 1873 *in the United States.* 8vo., pp. 1025. Washington: Government Printing Office. 1875.

The production of this large volume was in accordance with a joint resolution of the 43d Congress, instructing the Supervising Surgeon of the U. S. Marine Hospital Service, in connection with a medical officer of the Army, "to confer with the health authorities and resident physicians of such towns as were visited by the cholera epidemic of 1873, and to collect, as far as possible, all facts of importance with regard to such epidemic, for the purpose of making a report of the same to the President of the United States to be submitted to Congress." Accordingly it was prepared by Dr. John M. Woodworth, Supervising Surgeon, in connection with Ass't Surgeon Ely McClellan, U.S.A., who was detailed for the purpose.

The first 28 pages of the work are devoted to the following: "The Introduction of Epidemic Cholera into the United States through the Agency of the Mercantile Marine: Suggestions of Measures of Prevention." As this portion of the book possesses a special local interest here, from the fact that New Orleans is regarded as the initial point of that cholera visitation, we propose to give it particular attention.

The following propositions on the nature of cholera were drawn from various authorities on the subject, with the view of showing their bearing on the question of excluding the disease from this country. To our readers they may possess an additional interest, as affording hints towards prophylaxis and treatment in presence of the disease:

"I. Malignant cholera is caused by the access of a specific organic poison to the alimentary canal; which poison is developed spontaneously only in certain parts of India (Hindostan).*

"II. This poison is contained primarily, so far as the world outside of Hindostan is concerned, in the ejections—vomits, stools, and urine – of a person already infected with the disease.

"III. To set up anew the action of the poison, a certain period of incubation with the presence of alkaline moisture is required, which period is completed within one to three days; a temperature favoring decomposition and moisture or fluid of decided alkaline reaction hastening the process, the reverse retarding.

"IV. Favorable conditions for the growth of the poison are found (1) in ordinary potable water, containing nitrogenous organic impurities, alkaline carbonates, etc.; (2) in decomposing animal or vegetable matter possessing an alkaline reaction; (3) in the alkaline contents of the intestinal portion of the alimentary canal.

"V. The period of the morbific action of the poison—which lasts, under favorable conditions, about three days for a given crop—is characterized by the presence of bacteria, which appear at the end of the period of incubation, and disappear at the end of the period of morbific activity. That is to say, a cholera-ejection, or material containing such, is harmless both before the appearance and after the disappearance of bacteria, but is actively poisonous during their presence.

NOTE.—It is not meant by this that the bacteria so found are the cholera-poison, since they differ in no appreciable manner from bacteria found in a variety of other fluids. Indeed, Lebert hints that the bacteria may even be the destroyers of the poison.†

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* The student of cholera-literature cannot fail to be struck with the resemblance between the early writing on *syphilis* and much of the current speculation and theory concerning cholera. It now seems incredible that the connection between sexual intercourse and syphilis should have ever been overlooked—not to say vehemently denied—and yet it is not hazarding much to say that future generations will be quite as incredulous of the delay in recognizing the true mode of cholera-propagation. Just as certainly as that contact of pre-existing syphilitic virus is necessary to produce syphilis, so certainly is contact of the pre-existing cholera-virus necessary to produce cholera in any portion of the globe outside of Hindostan.

† "Among the reasons why the disease does not fully develop under apparently favorable conditions, we may notice here again the fact that the germs may reach even an exuberant growth in the water of the soil and then be destroyed by otherwise innocent bacteria of putrefaction and fermentation before they have come into thorough contact with the human organism."—(*Cyclopedia of the Practice of Medicine.* ZIEMSSEN, Vol. I., p. 374.)

"VI. The morbific properties of the poison may be preserved in posse for an indefinite period in cholera-ejections dried during the period of incubation, or of infection-matter dried during the period of activity.

"VII. The dried particles of cholera-poison may be carried (in clothing, bedding, etc.) to any distance; and when liberated may find their way direct to the alimentary canal through the medium of the air—by entering the mouth and nose and being swallowed with the saliva—or, less directly, through the medium of water or food in which they have lodged.

"VIII. The poison is destroyed naturally either by the process of growth or by contact with acids: (1) those contained in water or soil; (2) acid- gases in the atmosphere; (3) the acid secretion of the stomach.

"IX. It may also be destroyed artificially (1) by treating the cholera-ejections, or materials containing them, with acids; (2) by such acid (gaseous) treatment of contaminated atmosphere; (3) by establishing an acid diathesis of the system in one who has received the poison."

After alluding to the introduction of cholera infection on several previous occasions, particular mention is made of some recent facts which transpired through the researches of Dr. McClellan:

"In 1873, three distinct outbreaks of the disease occurred at widely remote points in the United States, from poison packed and transported in the effects of emigrants from Holland, Sweden, and Russia. These people and the vessels in which they were carried had been perfectly healthy, and the people remained so until their goods were unpacked at Carthage, Ohio, at Crow River, Minn., and at Yankton, Dak., respectively. Within twenty-four hours after the poison particles were liberated the first cases of the disease appeared, and the unfortunates were almost literally swept from the face of the earth.*

* * * * * * *

"According to that indefatigable investigator, Dr. Peters, the disease continued to be carried from Hamburg, and during the year 1872 it was sent thence 'to London, Havre, Liverpool, New York, and various other places, probably also to New Orleans.'†

"Arrivals of vessels at both New York and New Orleans from a number of notoriously infected ports, including eleven arrivals at the former port from Taganrog and Cronstadt, were constant and numerous during the entire year; and one case of 'cholera

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* See McClellan for details in these cases.

† On the Origin and Spread of the Asiatic Cholera which raged in the United States in 1873. By John C. Peters, M.D., of New York City, chap. IV. of Dr. McClellan's report.

asphyxia' was officially reported as sent from the New York emigrant depot at Castle Garden to the State Emigrant and Refuge Hospital on Ward's Island, besides four cases of 'cholera sporadica' treated in the Temporary Hospital at Castle Garden. Cholera is also reported to have prevailed during that year on the Island of Cuba, and the neighboring Island of Jamaica is known to have quarantined against Cuban vessels on that account. An examination of the consular correspondence of 1872–'73 from West Indian and South American ports, which examination was made for the purposes of this paper by the State Department at the request of the honorable the Secretary of the Treasury, shows also that cholera reached Jamaica in the autumn of 1872. Under date of September 23, the consul at Kingston reports the arrival of a cooly-ship at Bluff's Bay, upon which vessel sixty deaths had occurred on the passage, and one other fatal case, admitted to be cholera, occurred after her arrival.

"This, it will be seen, brings the disease within striking distance of New Orleans, and direct communication between the two points is shown by the arrival of vessels from Jamaica at that city during the month of January, 1873. More conclusive, however, than this, is the fact that while cholera thus existed at almost every European port of embarkation for emigrants—107 cases occurring in one week at Hamburg—there arrived at New Orleans, via Liverpool, Hamburg, and Bremen, during the months of December, 1872, and January 1873, a total of nearly two thousand emigrants from cholera-infected districts of Europe.*

"While, in the absence of direct evidence to the contrary, it may be admitted that no person actually laboring under cholera was landed in New Orleans during the winter of 1872–'73,* the unavoidable alternative is that the poison which caused the epidemic in the Mississippi Valley in the latter year was imported in the same manner as that which caused the later outbreaks at Carthage, Crow River, and Yankton, namely, in the personal effects of immigrants, sailing from healthy ports, in healthy vessels, and subjected to the usual sanitary requirements of the period."

Admitting that no other mode of introduction of cholera infection can be shown, except the one proposed above, it is certainly remarkable, on that supposition, that it did not become more prevalent, particularly along the levee. Special mention is made of the mild character of the disease at New Orleans, the low rate of mortality, amenability to treatment, etc. In the absence of proof of importation, and in view of the above men-

* See tables compiled by Dr. McClellan from statistics of immigration into New Orleans during 1872–'73.

tioned characteristics of the disease, it was not generally regarded as true Asiatic cholera, until its subsequent outbreak in a malignant form at other localities.

The moral to be drawn from the cholera visitation of 1873 is obvious, and applicable whether we admit or not that the introduction of the infection to the country through our port is positively made out. It is to the effect that greater care is needed at the quarantine station in the inspection of vessels from other ports, and in the disinfection of all merchandise and personal effects which might possibly serve as fomites.

Following these introductory pages, are the reports prepared under the direction of the Surgeon-General of the Army. First comes a History of the Cholera Epidemic of 1873 in the United States, by Ely McClellan, M.D., which extends through page 513. This portion is divided into 23 chapters, treating respectively of the Clinical History of the Epidemic of 1873; Etiology of the Epidemic; on the Prevention of Cholera; on the Origin of the Epidemic of Cholera which reached the United States in 1873; Narratives of the Epidemic in 17 States and Territories, and also in New York harbor and in the United States Army.

The clinical history of the disease is illustrated by 25 cases reported by various physicians, and by about 40 notes from the experience of practitioners in different parts of the country on modes of treatment. The remedies most relied on were calomel and opium, generally administered in small doses. Morphine was largely used by the hypodermic method. Sulphuric acid was used in a few instances, with varying success.

The chapter on the Ætiology of Cholera is based on a number of propositions similar to those already quoted, and these are separately discussed. One of these propositions is thus enunciated: "That the virulence of a cholera demonstration, the contagion having been introduced into a community, is influenced by the hygienic condition of the population, and not by any geological formation upon which they may reside." The history

* During the following summer it was alleged with much circumstantiality of detail that three Hungarian emigrants, *en route* for Texas, were landed and died of cholera in New Orleans about the middle of February, and that in consequence thereof the alcade of Havana, acting upon dispatches from the Spanish consul at New Orleans, caused vessels from the latter port to be quarantined. Inquiry at the Spanish legation in Washington and of the consul at New Orleans failed to substantiate the report, although such action with reference to quarantine was in fact taken by the authorities in Havana soon after the appearance of the disease in New Orleans.

of the epidemic of 1873, as well as that of earlier visitations, we think, shows greater prevalence and virulence of the pestilence in the States of Tennessee and Kentucky than elsewhere, and this fact is attributable to the limestone formation of the surface. The explanation is found in the water-supply for drinking and culinary purposes. On a limestone formation the surface and subterranean waters are potable, while on alluvial formations people generally use rain water. The former water is much more liable to be contaminated with cholera dejections than the latter. In this way we may account, in some degree, for the moderation of the cholera which visited us in 1873, while much was undoubtedly due to systematic disinfection of the discharges. Another point of some importance is the alkaline character of limestone formations, which favors the vitality of the cholera infection, as, on the other hand, acids are known to destroy it.

With regard to the Prevention of Cholera, the first means considered and recommended is a "*quarantine of observation.*" This means not mere detention, which is the least valuable feature of a quarantine system, but also isolation of the sick, and thorough disinfection of all places and articles suspected of infection.

A national system of quarantine is advocated, by which alone uniformity of action can be secured along a great extent of exposed coast and frontier.

On the approach or in the presence of the disease, suitable hygienic measures are indicated, among which personal cleanliness, the removal or destruction of rubbish, garbage, and rank vegetation, deserve notice as precautions, as well as the disinfection of cholera discharges by acids or the sulphate of iron. For the disinfection of clothing and other fomites, the hot-air plan is recommended—subjecting them to a temperature of 250° in a close room. We think the fumes of sulphurous acid quite as effective and more convenient.

Chapter IV., on the Origin and Spread of the Asiatic Cholera which reached the United States in 1873, is contributed by Dr. J. C. Peters, of New York. It is traced to successive outbreaks in India from 1865 to 1869, which were communicated to Persia by returning pilgrims. From Persia it reached Kiev, on the Dnieper, in Russia, July, 1869, and thence gradually spread westward over Europe. The agency of religious pilgrimages in

the transportation and dissemination of cholera has long been recognized. The pilgrimages to Mecca have been regarded as especially dangerous to Europe, on the return of the pilgrims to their homes in Egypt and European Turkey.

The remaining chapters, to XXII inclusive, give a narrative of the cholera visitation of 1873, derived from a large number of local contributors. The whole affords the most complete history attainable, and will prove extremely valuable for preservation and future reference.

Part Second comprises a History of the Travels of Asiatic Cholera in Asia and Europe, by John C. Peters, M.D.; and of the same in North America, by Ely McClellan, M.D., Assistant Surgeon, U.S.A.

A disease presenting the characteristic symptoms of cholera is traced in the first chapter from the dawn of authentic profane history in the writings of the most eminent medical men, from Hippocrates down. Though no account of an epidemic of the malady is found in ancient writings, the author inclines to the belief that the epidemic feature was not wanting to perfect its identity with modern cholera.

On this point we venture to observe that the evidence adduced by Dr. Peters seems insufficient. There are besides some considerations which appear to forbid such a conclusion. First, the description of the disease found in ancient writers is answered by the ordinary cholera morbus, which prevails more or less every year, and is quite accountable on other grounds than that of a special infection. Another reason is, that commercial intercourse between India and western nations was extremely restricted in ancient times. Previous to the 7th century Mohammedan pilgimages had no existence, and previous to the 15th, maritime communication was on a most limited scale. Again, circumstantial accounts of the plague have come down to us from ancient times, and it is highly improbable that an epidemic of cholera should have failed of record and transmission to our time.

The second chapter gives a history of epidemic cholera from 1800 to 1823, including the famous outbreak which started from Jessore in 1817, in the course of six years spread over the Indian peninsula, and extended to China and the principal islands near the southern and eastern coast of Asia, and to Arabia and Persia on the west.

Chapter third describes the epidemic which spread over India in 1826 and 1827, reached Russia in 1829, England in 1831, and the United States in 1832. It is to be observed that Dr. Peters reckons here two distinct outbreaks, while other medical writers remark that the cholera march of 1817 paused for several years on the confines of Europe.

The four succeeding chapters give a history of the different visitations of cholera which have reached this continent previous to that of 1873.

The last chapter treats of cholera in India and Ceylon, and its introduction into large cities. The point especially considered is the mode of propagation, in which overcrowding with its concomitants, bad food, insufficient shelter, fatigue, and, above all, the accumulation of human excrementitious matters, plays a prominent part. The pilgrimages in India, with all their attendant miseries, are graphically described, and it is plain that this pestilence took its origin and maintains its existence through the vast gatherings which are incited by religious superstition. The annual pilgrimage to Mecca promotes the introduction of the infection to Europe, as that shrine is resorted to by the faithful from India, Persia, Northern Africa, and the Turkish dominions. Thus, while religious observances may be credited with the origin of this pestilence, they share with commercial intercourse the responsibility of propagating it throughout the world in the lines of human intercourse.

Somewhat more than 300 pages of the book are occupied with the Bibliography of Cholera, which has been prepared with great care and admirable system by Assistant Surgeon John S. Billings, U.S.A.

The work contains a number of maps, illustrating the progress of the different cholera marches since 1817.

Of the work as a whole, we feel bound to declare that it deserves great praise. Pains and care have not been spared in the collection of material facts, and good judgment is displayed in the deductions. The historical feature of the book is the one of highest value, being the one in which systematic works on medicine are greatly and necessarily deficient; but the remarks on the natural history, prophylaxis and treatment of cholera, do not suffer by comparison with those found elsewhere. The typographical execution is very creditable for neatness and general accuracy. S. S. H.

CORRESPONDENCE.

Yellow Fever Epidemic at Vera Cruz in 1875.

U. S. CONSULATE, VERA CRUZ.
February 23d, 1876.

Prof. T. G. Richardson, President of the University of the State of Lousiana:

MY DEAR DOCTOR: After having watched with great care the progress and conclusion of the recent fearfully fatal epidemic of yellow fever which assailed the city of Vera Cruz and the fortress of San Juan de Uloa during the past spring and summer, I avail myself of this opportunity to give you a summary of my observations concerning the same, according to promise made to you at your recent sojourn in our city and country.

To preface my remarks, thinking that should they fall under the observation of others who have not seen, and hence are not acquainted with, the topography of Vera Cruz, that it may serve to make more clear some points in discussion, I will allude to some of the surroundings and local influences which militated more or less in the mortality of our great pestilence.

Vera Cruz is situated on a sandy plain not more than four feet above high tide-water of the Gulf of Mexico. The southern extremity of this plain is covered with a thick undergrowth of grass, cactus and dwarfed shrubs, which undergrowth becomes more and more diminished in verdure until you reach (passing northward) near the centre of the city, relatively, when the plain becomes a barren waste of sand. Surrounding this plain for a mile from the walls of the city are barren sand hills, which are changing their shapes and features, under the influences of the heavy northers which visit us during the winter months, with nearly the same facility as snow-drifts on the prairies of Illinois. The southern expanse of this sandy plain is covered, in the rainy season, with water, and our prevailing winds are from the south during the spring and summer months. Vera Cruz has a high wall encircling the main city, which, unfortunately, is always kept in good repair. The city has about 15,000 inhabitants, is neatly and carefully policed, has good water-supply, the streets and alleys are well paved, and have one gutter in each, which passes down the middle to the sea. These gutters are open to the sea, and are the conduits of all the slops of houses except

the water-closets, and I fear many of them find escapes in those channels. These gutters are supplied with fresh water by steam power, and are washed by hand power and scrub brooms each day. The streets are swept every day, and are always proverbially clean. There are no vacant grounds inside the walls, the buildings and streets occupying the entire space. An American who has never seen the Spanish order of architecture may find some difficulty in picturing to his mind a true outline of a Spanish city. There is no rear to a Spanish block of buildings skirted by an alley; no chance for air to pass through, but only into them. If alleys there be, they are small streets, and constitute the fronts of tenements for the poorer classes. The entire grounds being covered with buildings, streets, alleys and courts, give ample chances for landlords to crowd residents into ill-ventilated and dark apartments, which are always damp and musty. The floors are of bricks laid on the sand, which, when removed and a shovel is inserted a foot into the sand, gives a pool of brackish water. These interior holes (for they are entitled to no better name) are filled with squalid humanity robed in all the habiliments of filth. Here vice and "vomito" are twin occupants of the dark corners. We always have more or less of both.

San Juan de Ulloa is a penitentiary at present, with a strong military guard, and is on an island about a mile from the city, and the intervening water space between the fortress and city is the harbor of Vera Cruz. The barracks of the castle contain the convicts and the guard, and are not fashioned after the high laws of hygiene which modern builders would recommend, and hence the occupants of this prison often suffer from endemic and epidemic diseases.

The year is divided into three periods—the cold, the hot and dry, and the rainy season. The cold part of the year includes the winter months, and northers prevail, but these months have little or no rain-fall, and constitute the healthiest season of the year. Then come about three months—from the middle of March to the middle of June—which are hot and dry, and these give us our heaviest mortality in febrile diseases. Following this period the rains begin to fall, and until about the middle of September every night gives us heavy sheets of rain. The days are usually fair and hot. The range of the thermometer is very small for all parts of the year, standing at about 78°, mean,

in the winter, and going to about 93° Fahr. in the hot, dry months. We never have a higher degree than 95 in the shade. Yellow fever is more or less prevalent in Vera Cruz at all seasons of each year, but becomes epidemic only in the hot seasons of those years which give origin to malarial diseases in general, and are marked by laxity in the police regulations governing the cleanliness of the city in particular.

During the past spring, summer, and first month of fall, we had this laxity of cleanliness more manifest than at any time since my sojourn in Vera Cruz. Also, the year was peculiarly adapted to epidemic influences, because of the absence of the usual rain-fall in the rainy season. In place of having rains every night, as is common, this year gave us only a rain storm about once a week, which was really worse than if we had had none whatever.

I have at last succeeded in obtaining a table of statistics for the last year bearing on the number of admissions to the three hospitals of the city, the number of recoveries and deaths in each hospital, which I herewith enclose for your perusal. The difficulty in obtaining this table is my apology for not handing you this paper long before this.

By referring to this table, it will be seen that the Military Hospital had 353 cases of yellow fever entered, 211 recoveries, and 142 deaths, being a death-rate of 40.22 per cent. These were carefully diagnosticated cases, under the control of my very competent friend, Dr. Molina.

The Hospital San Sebastian had 350 cases entered, with 215 recoveries and 134 deaths, being a death rate of 38.28 per cent. I am told that the diagnosis in this hospital was not as well guarded as in the Military Hospital, and it is probable, therefore, that some cases of malarial fevers were counted as yellow fever.

The women's hospital, "Loreto," had 96 cases of yellow fever entered, 38 recoveries and 59 deaths, being a death,rate of 60.41 per cent. These were genuine cases, and the high mortality is accounted for by the fact that the women are usually taken care of in families until great fear is entertained that the patient will die, and they being poor, are thrust upon the hospital to cover responsibility and to save burial expenses.

I have no means of obtaining the data covering the number of cases in the city outside of the hospitals nor the death-rate,

but will say that there were very many attacked and the death-rate very great.

Table of Statistics of Yellow Fever Patients admitted into the Hospitals of Vera Cruz, in the year 1875.

HOSPITALS.	Months.	Entered.	Recovered.	Deaths.	Death-rate.
Military Hospital.	January	....	....	....	
	February	1	....	1	
	March	2	....	.....	
	April	3	3	....	
	May	1	1	.	
	June	17	4	8	
	July	81	15	33	
	August	160	71	69	
	September	72	77	24	
	October	16	33	6	
	November	....	7	1	
	December	...	....	....	
	Totals	353	211	142	40.22
"San Sebastian"—civil hospital, for men.	January	9	2	3	
	February	2	5	1	
	March	4	...	1	
	April	10	6	6	
	May	26	5	8	
	June	97	52	39	
	July	113	55	46	
	August	40	48	19	
	September	24	20	6	
	October	19	17	4	
	November	6	5	1	
	December	....	....	....	
	Totals	350	215	134	38 28
"Loreto"—civil hospital for women,	January	4	1	2	
	February	.....	1	....	
	March	3	.....	1	
	April	1	2	.....	
	May	10	1	7	
	June	24	4	17	
	July	18	11	12	
	August	21	11	8	
	September	13	7	6	
	October	....	....	3	
	November	2	....	2	
	December	....	....	1	
	Totals	96	38	59	60.41

In the castle of San Juan de Uloa the "vomito" was very prevalent and fatal. All those who suffered from the malady at this prison and military station were transferred in boats *through the harbor where the vessels of commerce were at anchor* and taken to the hospitals in the city for treatment. Still not a single case of yellow fever occurred on board of a vessel in the harbor. The harbor is, as I previously said, *between the city and San Juan de Uloa*, and daily coming and going was kept up throughout the season of the epidemic between the castle and city, and through the squadron of vessels at anchor in the harbor. Here

were vessels lying for from two days to three months between two fires, as it were, and they escaped all dangers. In fact, since my sojourn in this city, I am not cognizant of a single case occurring on board of a vessel in the harbor, and that period of observation is over six years I cannot but think that if the contagious theory of yellow fever be the correct idea, that some cases would have occurred on board of some of these vessels, for they have certainly been highly exposed.

The sanitary authorities at Vera Cruz have taken the advanced doctrine of the non-contagionists, do not believe in the transportability of yellow fever in goods or persons, and at all times have permitted vessels to come and go at will, only sending a medical man to see if actual cases were on board brought from other ports, and if so, to direct the patients to be sent to hospital. If the doctrines of contagion and transportation are correct, then this open field should give us some cases to observe which give strength and conviction to the theory; but it has not, and the medical gentlemen here are as a unit in the belief that the city and harbor are as safe under the present rule as they were under the rigid quarantine exercised in former times.

This is "benighted Mexico" in the estimation of many, but the vast experience and high medical culture, on this disease, of the profession in this city entitle these medical gentlemen to some consideration among those over whom the cloud of quarantine superstitions still hovers as a relict of barbarism, and the experiences encountered here should be at least suggestive to steps in the advance by those clothed with authority as sanitary agents in ports of entry in the United States.

If it were once proven that the detention of a vessel at quarantine below New Orleans, entering from an infected port, for a period of from one to twenty days saved a single citizen from the disease under consideration, then might the humanitarians come justly to the front, and demand the most ample fulfillment of the most rigid regulations of quarantine. But as that proof is wanting, and even the strongest doubts have just grounds for their substantiation, then why should a mythical tradition be adhered to which has no better effect than to torment the traveler and thwart the prosperity of commerce?

To you who live in the city of New Orleans belongs the argument which says that, admitting the inadmissible dogma that

your present system of quarantine is protective, still by its working routine you are not protected because of your proximity to other ports of entry, and of the railroad facilities for landing goods and persons into your city from places scourged by yellow fever.

Large bodies move slowly of necessity, and the popular mind, being such, has been slow to throw away the prejudices of olden times, which promised protection and immunity from the afflictions of a fearful malady, and hence the blind continuance of the long detention of vessels in quarantine to escape from an imaginary evil. But with all these detentions, disinfections and safeguards of quarantine, the yellow fever has afflicted you probably just the same as though no such rigidity had been exercised. Your Faculty have proven the sporadic and epidemic origin of yellow fever in your own city. And should your health officers turn a more energetic and systematic attention to cleansing the city of all unhealthful influences, you would doubtless receive a greater breadth of blessings than is vouchsafed in your present mode of enforcing quarantine.

Yellow fever does exist. It had its origin somewhere, and under some specific circumstances, or combination of circumstances. It certainly originates under those circumstances whenever they prevail. They have sporadically and epidemically produced the disease in Vera Cruz, in Havana, New Orleans, Shreveport, Nashville, Memphis, Norfolk, and many other places. And it behooves the philosopher and philanthropist to investigate the causes which tend to unhealthfulness, and to remove them before they become pestilent stenches requiring the doubtful agencies of disinfectants. To admit the necessity of the latter is but a grave admission, that a great neglect has been perpetrated which has permitted the origin of something pestilent to the well-being of the community. And yet disinfection is growing to be the seventh son of quarantine—the bow of promise to all who were not submerged in the first flood. If the disinfectionists would tell us *what it is they kill* by their thrust in the dark, whether it is friend or foe, then we would be more content to see carbolic acid in high carnival devouring our wives' fine dresses, or sulphur fumes giving us a foretaste of the moral fears within us.

I am dear, doctor, yours sincerely,

S. T. Trowbridge.

A Case of Recurring Abscess of the Liver.

To the Editor of the New Orleans Medical and Surgical Journal:

April 9th, 1873, I was called to see Martha Putney, a negro woman, about thirty-five years of age. I found her suffering with severe pain in her right side. She was breathing rapidly, but her inspirations were shallow. Her pulse was but little excited. The rapidity of respiration was out of all proportion to frequency of pulse. She was frequently troubled with a dry, hacking cough. She was quite sensitive to pressure over the right hypochondriac region generally, and especially so at a particular place. Her tongue was lightly covered with a whitish fur. Temperature about normal. Upon a careful examination of her lungs I could detect nothing to account for the rapidity of respiration. Auscultation found nothing indicating engorgement or inflammation, and percussion elicited only a clear, healthy resonance. My diagnosis was not positive. I suspected the liver to be the seat of her disease, though I was not satisfied as to its exact nature. I prescribed a mercurial cathartic, and had her side rubbed with liniments and covered with warm poultices. I also gave anodynes liberally to relieve the severe pain from which she was suffering. The purgative acted well on her bowels, but she received no substantial benefit from it. After a few days she complained of severe pain in her right shoulder. I now strongly suspected abscess of the liver. This induced me to question her more closely than I had done, with reference to her previous health. She informed me that in 1866 she was thrown from a horse, and fell with her right side across a log. She experienced no trouble from the fall at the time, but in the course of a month she was attacked with a very severe pain in the right side. She was under medical treatment for several weeks, but her disease was not clearly made out by her physician. One day, however, she suddenly commenced vomiting, and ejected from her stomach a large quantity of pus and blood. This relieved her from the acute pain she had been suffering, and was followed by a dull, heavy, sore feeling in the right side. Blood and pus continued to be discharged from her stomach and passed by the bowels for several days, when she commenced convalescing and made a good though slow recovery. Her health from that time to April, 1873, about six and a half

years, was good. After this statement, I was fully satisfied that another abscess had formed in her liver, and limited my treatment solely to palliative and supporting measures, believing the abscess would soon open somewhere. I watched carefully every point at which it would be likely to discharge, but could find no external tumor. At my visit one morning, some two weeks after I first saw her, she informed me she had vomited a large quantity of pus and blood during the night. The vessel containing it had been emptied before my arrival, but she was still occasionally ejecting small quantities of bloody pus. The acute pain had now subsided, and was replaced by a dull, heavy, aching pain, as she described it. Since that time to the present—nearly three years—she has had fifteen attacks similar to the one just described, except that during some, she would suffer more with her right shoulder than at others, and the pain would extend down to the elbow and wrist joints, and at others the interval between commencement of sickness and vomiting of pus and commencement of convalescence would be shorter. She is confined to her bed from three to six weeks, after which she will resume her occupation as cook, though she always feels more or less uneasiness in the diseased side. The use of the right arm and hand is somewhat impaired. Only once has an abscess pointed externally. About two years ago a small one pointed, and opened a little to the left of the middle line of the epigastric region. She, however, discharged pus from her stomach at the same time. During the time the abscess is emptying itself into stomach she suffers great nausea, and has no desire for food whatever, sometimes a week elapsing before she will take any nourishment at all. After the matter is fully discharged, her appetite returns and her digestion is good. She does not lose flesh, as might be supposed, her appearance indicating to one unacquainted with her condition a woman of sound and healthy body. Her catamenia are generally regular in their occurrence, and quantity, and accompanied with no special pain or other inconvenience.

For the past twelve months, the interval between complete convalescence from one spell to the commencement of another has been shorter. She is now slowly recovering from one which came on just four weeks from recovery from preceding attack.

C. O. Weller, M.D.

Columbus, Texas.

Cultivation of Cinchona Tree.

SECRETARY'S OFFICE "PLAQUEMINES PARISH MEDICAL AND SURGICAL ASSOCIATION."
March 21st, 1876.

Professor S. M. Bemiss, M.D., Editor N. O. Medical and Surgical Journal, New Orleans:

Dear Sir—At the last regular meeting of the Plaquemines Parish Medical and Surgical Association, the following resolutions were adopted.

Resolved, That this Association views the introduction of the cinchona tree into the United States as a necessity to the people at large, and more especially to those of the river valleys, as the destruction of the tree in its native place is rapidly assuming such proportions that it will soon be exterminated.

Resolved, That Gen'l R. L. Gibson, our Representative in Congress is earnestly requested to give this matter his attention.

Resolved, That the Secretary forward a copy of these resolutions to Gen'l R. L. Gibson, M. C.

I subjoin Gen'l Gibson's reply.

"HOUSE OF REPRESENTATIVES, WASHINGTON, D. C.
"February 26th, 1876.

"Dear Doctor—I am in receipt of your communication transmitting copy of Resolutions of the Medical and Surgical Association of Plaquemines Parish, relative to the importance of the introduction of the cinchona tree into our country. I will give the matter prompt attention, and endeavor to secure the favorable action of the Government.

"With high regard,
"Yours faithfully,
"R. L. GIBSON."

In view of the importance of this matter, and of the example set by the British Government in India, would it not be well for the various Medical Associations of our Southern country to instruct their Representatives in Congress to coöperate with Gen'l Gibson? True, it would be years before any positive benefit would accrue from it, but assuredly the medical profession would not hesitate simply because future generations would gather the fruits which we planted for them. Our country

possesses all varieties of soil and climate, and, unfortunately, a great deal of malaria.

Respectfully,

GEO. A. B. HAYS, M.D.,
Secretary.

Letters Relating to Prof. Hawthorn's Death.*

Dr. Stanford E. Chaillé:

Dear Sir—The sad news of my dear friend's death had reached me through the press, and had filled my heart with a great sorrow; so there was a melancholy comfort in your letter. The likeness is so fine that it makes me feel as if I was in his presence; and it is a pleasure to know that I was fresh in his memory to the time of his death. He was one of the few friends I ever had, who never in any way disappointed me. His sensibilities, cultivation, sincerity and honor, were such as to enable him to appreciate the true meaning of that relation. His loss is very great. His genius, allied with his ardent love of truth, carried him to the highest regions of knowledge and science, and if he had been spared to a ripe age, Alabama would have had more pride in him than she had found even in the most renowned of her scientific men. Though he died without his ambition being gratified, he had the consolation of duty performed, and the remembrance of many bright deeds of goodness. "Blessed are the merciful, for they shall obtain mercy." Such, I believe, will be his portion.

BRANDON, RANKIN CO., MISS.,
March 14th, 1876.

At the meeting, on the 11th inst., of the "Rankin County Medical Association, the following resolutions were passed.

Resolved, That we deeply deplore the loss of the late Professor Frank Hawthorn, M.D. Recognizing in him one of the brightest ornaments to our profession, exhibiting, as he did in professional worth, its best and noblest attributes, and as one who had attained enviable distinction in his profession, and who was endeared to all who knew him, we still bow with submission to the will of Him who doeth all things well.

Resolved, That we tender to his stricken family and bereaved

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* Addressed by one of the leading public men of Alabama.—[ED]

relatives, and to the Faculty of the University of Louisiana, of which he was an honored member, our heartfelt sympathies in this great and irreparable loss.

C. A. Rice, M.D.,
Secretary of Association.

EDITORIAL.

The Journal.

This issue will close the third volume of the new series of the New Orleans Medical and Surgical Journal. During this period of editorial supervision, it has been the earnest desire of the writer to afford the profession a periodical interesting and profitable in its make-up of scientific material. How well I may have succeeded, or in what respects I may have failed, must be for the patrons of the Journal to determine. The effort to establish and sustain a medical journal in this section of the United States, at an era when evil influences tended to alarm and impoverish our profession, in common with the whole people, was attended by unusual difficulties. If the enterprise has been successfully carried through all obstacles, the result should be credited in part to the faithful and liberal support given it by many of the best members of the medical profession in our country. The frugal and wise manner in which the business affairs of the Journal have been managed by its present Proprietors must likewise be considered a paramount element of success. From the beginning of the publication of the new series of this Journal to the present time, the one only aim of the Editor has been to make it a paper in which the whole profession would feel a common interest, because of identification of purpose and of labors. The Journal has not been printed in the interest of any school, nor has it either subsidy or reward from any partizan or clique influence. Contributions from teachers in either of the schools situated in this city, or elsewhere, are placed on the same footing with contributions from lay members throughout the country. It has always occurred to the writer that a scientific journal could not, with a proper devotion, serve the interests of a great and learned profession, unless it pos-

sessed that largeness of spirit which this JOURNAL has sought to cultivate. If our readers admit the justice of the claims which we have advanced, we invoke a continuance and extentension of their support.

For the future, the Editor has projected several plans for advancement of the interests of his patrons. One of these consists in an attempt to benefit the busy practitioner by laying before him in each number of this JOURNAL a study, condensed and practical in its character, of some important disease prevalent, or likely to become so, at the time of publication.

That these papers may each fully reflect the most advanced *practical* knowledge of the profession in regard to its subject-matter, an effort will be made to gather facts from the most recent experience of individual members of our profession in full practice and observation. This mode of study of disease is not new in this country, but has been recently tried with good results in England. It is an attempt at unification of knowledge and experience of the whole profession—an effort to realize in respect to our own profession Portal's utterance in regard to the human race: "Mankind is, as it were, one man, always living, and always learning." The feasibility of this projected feature of improvement rests wholly upon the amount of professional coöperation given to it. The subject chosen for study in the July number of the JOURNAL is "Scarlet Fever;" for the September number, "Diarrhœal Diseases." Contributions of actual observations of these diseases are earnestly solicited, and full credit will be given in every instance to the contributors.

A Swindler of Medical Men.

NEW YORK, April 4th, 1876.

Editor N. O. Medical and Surgical Journal:

Dear Sir—You will place me under obligations by giving notice to the public, that one M. C. Lockwood is traveling through the Southern States representing himself as my agent, and collecting subscribers for various medical journals on my behalf. I authorized the said Lockwood to obtain subscribers exclusively for my own Journal—"Braithwaite's Retrospect." He early violated the agreement with me, and I am constantly receiving complaints of this abuse of my name. In justice to my-

self, you will confer a favor by guarding the medical profession against this imposition.

Very Respectfully,

W. N. TOWNZEND.

Volume IV. of Ziemssen's Cyclopedia of the Practice of Medicine.

This work has been received too late for notice in the department of reviews. The subjects treated of are Diseases of the Respiratory Organs, by Frænkel, of Berlin, Ziemssen, of Munich,* Steiner, of Prague, Riegel, of Cologne, and Frærtzel, of Berlin. The volume is octavo, 805 pages. The printing and illustrations are executed in superior style.

State Medical Society.

The Editor has several times been solicited to call the attention of the medical profession of this State to the importance of organizing a State Medical Society. Louisiana is the only Southern State which has no general medical association. Indeed, so far as we have been informed, there are only two medical societies in the whole State. One of these is the Medical and Surgical Association of this city, which is full of life and vigor, and is not only doing the profession most excellent service, but even promises to become more and more excellent as time advances, and its labors become better systematized; the other is a newer laborer in the vineyard, whose meetings are said to be well attended and interesting, and from whom we publish a resolution in regard to the cultivation of the cinchona tree.

International Medical Congress.

The International Medical Congress will be formally opened at noon, on Monday, the 4th day of September, 1876, in the University of Pennsylvania. The following is the "Preliminary Programme."

The following addresses will be delivered before the Congress in general Meeting—

* Recent Journals announce the death of this illustrious teacher.

Address on Medicine, by Austin Flint, M.D., Professor of Practice of Medicine in Bellevue Hospital Medical College, New York.

Address on Hygiene and Preventive Medicine, by Henry I. Bowditch, M.D., President of State Board of Health of Massachusetts.

Address on Surgery, by Paul F. Eve, M.D., Professor of Operative and Clinical Surgery in the University of Nashville.

Address on Obstetrics, by Theophilus Parvin, M.D., Professor of Obstetrics in the College of Physicians and Surgeons of Indiana.

Address on Medical Chemistry and Toxicology, by Theodore G. Wormley, M.D., Professor of Chemistry in Starling Medical College, Columbus, Ohio.

Address on Medical Biography, by J. M. Toner, M.D., of Washington, D. C.

Address by Dr. Herman Lebert, Professor of Clinical Medicine in the University of Breslau.

Address on Medical Education and Medical Institutions, by Nathan S. Davis, M.D. Professor of Principles and Practice of Medicine in Chicago Medical College.

Address on Medical Literature, by Lunsford P. Yandell, M.D., late Professor of Physiology in the University of Louisville.

Address on Mental Hygiene, by John P. Gray, M.D., Superintendent and Physician to the New York State Lunatic Asylum, Utica, N. Y.

Address on Medical Jurisprudence, by Stanford E. Chaillé, M.D., Professor of Physiology and Pathological Anatomy in the University of Louisiana.

Discussions on scientific subjects will be opened in the Sections as follows:

SECTION I. MEDICINE.

1st Question. Typho-malarial Fever; is it a Special Type of Fever? Reporter, J. J. Woodward, M.D., Assistant Surgeon U. S. Army.

2d Question. Are Diphtheritic and Pseudo-membranous Croup Identical or Distinct affections? Reporter, J. Lewis Smith, M.D., Physician to the New York Infants' Hospital.

3d Question. Do the Conditions of Modern Life favor specially the Development of Nervous Diseases? Reporter, Robert Bartholow, M.D., Professor of the Theory and Practice of Medicine in the Medical College of Ohio.

4th Question. The influence of High Altitudes on the Progress of Phthisis. Reporter, Charles Dennison, M.D., of Denver, Colorado.

SECTION II. BIOLOGY.

1st Question. Microscopy of the Blood. Reporter, Christopher Johnston, M.D., Professor of Surgery in the University of Maryland.

2d Question. The Excretory Function of the Liver. Reporter, Austin Flint, jr., M.D., Professor of Physiology in the Bellevue Hospital Medical College, New York.

3d Question. Pathological History of Cancer. Reporter, J. W. S. Arnold, M.D., Professor of Physiology in the University of the City of New York.

4th Question. The Mechanism of Joints. Reporter, Harrison Allen, M.D., Professor of Zoology and Comparative Anatomy in the University of Pennsylvania.

SECTION III. SURGERY.

1st Question. Antiseptic Surgery. Reporter, John T. Hodgen, M.D., Professor of Surgical Anatomy and of Clinical Surgery in the St. Louis Medical College.

2d Question. Medical and Surgical Treatment of Aneurism. Reporter, Wm. H. Van Buren, M.D., Professor of the Principles and Practice of Surgery and of Clinical Surgery in the Bellevue Hospital Medical College, New York.

3d Question. Treatment of Coxalgia. Reporter, Lewis A. Sayre, M.D., Professor of Orthopædic Surgery and of Clinical Surgery in the Bellevue Hospital Medical College, New York.

4th Question. The Causes and Geographical Distribution of Calculus Diseases. Reporter, Claudius H. Mastin, M.D., of Mobile, Alabama.

SECTION IV. DERMATOLOGY AND SYPHILOLOGY.

1st Question. Variations in Type and Prevalence of Diseases of the Skin in Different Countries of Equal Civilization. Reporter, James C. White, M.D., Professor of Dermatology in Harvard University.

2d Question. Are Eczema and Psoriasis Local Diseases, or are they Manifestations of Constitutional Disorders? Reporter, Lucius Duncan Bulkley, M.D., of New York.

3d Question. The Virus of Venereal Sores; its Unity or Duality. Reporter, Freeman J. Bumstead, M.D., late Professor of Venereal Diseases at College of Physicians and Surgeons, New York.

4th Question. The Treatment of Syphilis with Special Reference to the Constitutional Remedies appropriate to its various Stages; the Duration of their use, and the Question of their Continuous or Intermittent Employment. Reporter, E. L. Keyes, M.D., Adjunct Professor of Surgery and Professor of Dermatology in Bellevue Hospital Medical College, New York.

SECTION V. OBSTETRICS.

1st Question. The Causes and Treatment of Non-puerperal Hemorrhages of the Womb. Reporter, Wm. H. Byford, M.D., Professor of Obstetrics and Diseases of Women and Children in the Chicago Medical College.

2d Question. The Mechanism of Natural and of Artificial Labor in Narrow Pelves. Reporter, William Goodell, M.D., Clinical Professor of Diseases of Women and of Children in the University of Pennsylvania.

3d Question. The Treatment of Fibroid Tumors of the Uterus. Reporter, Washington L. Atlee, M.D., of Philadelphia.

4th Question. The Nature, Causes, and Prevention of Puerperal Fever. Reporter, William T. Lusk, M.D., Professor of Obstetrics and Diseases of Women and Children in Bellevue Hospital Medical College, New York.

SECTION VI. OPHTHALMOLOGY.

1st Question. The Comparative Value of Caustics and Astringents in the Treatment of Diseases of the Conjunctiva, and the Best Mode of Applying them. Reporter, Henry W. Williams, M.D., Professor of Ophthalmology in Harvard University.

2d Question. Tumors of the Optic Nerve. Reporter, Hermann Knapp, M.D., of New York.

3d Question. Orbital Aneurismal Disease and Pulsating Exophthalmia; their Diagnosis and Treatment. Reporter, E. Williams, M.D., Professor of Ophthalmology in Miami Medical College of Cincinnati.

4th Question. Are Progressive Myopia and Posterior Staphyloma due to Hereditary Predisposition, or can they be induced by Defects of Refraction, acting through the Influence of the Ciliary Muscle. Reporter, E. G. Loring, M D., of New York.

SECTION VII. OTOLOGY.

1st Question. Importance of Treatment of Aural Diseases in their Early Stages, especially when arising from the Exanthemata. Reporter, Albert H. Buck, M.D., of New York.

2d Question. What is the Best Mode of Uniform Measurement of Hearing. Reporter, Clarence J. Blake, M.D., Instructor in Otology in Harvard University.

3d Question. In what Percentage of Cases do Artificial Drummembranes prove of Practical Advantage? Reporter, H. N. Spencer, M.D., of St. Louis.

SECTION VIII. SANITARY SCIENCE.

1st Question. Disposal and Utilization of Sewage and Refuse. Reporter, John H. Rauch, M.D., late Sanitary Superintendent of Chicago, Ill.

2d Question. Hospital Construction and Ventilation. Reporter, Stephen Smith, M.D., Professor of Orthopædic Surgery in the University of the City of New York.

3d Question. The General Subject of Quarantine with Particular Reference to Cholera and Yellow Fever. Reporter, J. M. Woodworth, M.D., Supervising Surgeon-General U. S. Marine Hospital Service.

4th Question. The Present Condition of the Evidence concerning "Disease-germs." Reporter, Thos. E. Satterthwaite, M.D., of New York.

SECTION IX. MENTAL DISEASES.

1st Question. The Microscopical Study of the Brain. Reporter, Walter H. Kempster, M.D., Physician and Superintendent of Northern Hospital for Insane, Oshkosh, Wisconsin.

2d Question. Responsibility of the Insane for Criminal Acts. Reporter, Isaac Ray, M.D., of Philadelphia.

3d Question. Simulation of Insanity by the Insane. Reporter, C. H. Hughes, M.D., of St. Louis, Mo.

4th Question. The Best Provision for the Chronic Insane. Reporter, C. H. Nichols, M.D., Physician and Superintendent of the Government Hospital for the Insane, Washington, D. C.

Gentlemen intending to make communications upon scientific subjects, or to participate in any of the debates, will please notify the Commission before the first of August, in order that places may be assigned them on the programme.

In order to facilitate debate, there will be published on or about June 1st the outlines of the opening remarks by the several reporters. Copies may be obtained on application to the Corresponding Secretaries.

The volume of Transactions will be published as soon as practicable after the adjournment of the Congress.

The Public Dinner of the Congress will be given on Thursday, September 7th, at 6.30 p. m.

The registration book will be open daily from Thursday, Aug. 31, from 12 to 3 p. m., in the Hall of the College of Physicians, N. E. corner 13th and Locust streets. Credentials must in every case be presented.

The registration fee (which will not be required from foreign members) has been fixed at Ten Dollars, and will entitle the member to a copy of the Transactions of the Congress.

Gentlemen attending the Congress can have their correspondence directed to the care of the College of Physicians of Philadelphia, N. E. corner of Locust and Thirteenth Sts., Philadelphia, Pennsylvania.

There is every reason to believe that that there will be ample hotel accommodation, at reasonable rates, for all strangers visiting Philadelphia in 1876. Further information may be obtained by addressing the Corresponding Secretaries.

All communications must be addressed to the appropriate Secretaries at Philadelphia.

The foregoing programme is published by the authority of the Committee of Arrangements of the Centennial Medical Commission.

S. D. Gross, M.D., *President.*

Wm. B. Atkinson, M.D., 1400 Pine Street, *Recording Secretary.*
Wm. Goodell, M.D., 20th and Hamilton Sts., } *Amer. Corres'g*
Dan'l G. Brinton, M.D., 115 S. 7th Street, } *Secretaries.*
Richard J. Dunglison, M.D., 814 N. 16th Street, } *Foreign Cor'd'g*
R. M. Bertolet, M.D., 113 S. Broad Street, } *Secretaries.*

PHILADELPHIA, March, 1876.

OBITUARY.

FRANCIS B. COLEMAN, M.D., was born in Lexington, Ky., of Irish parentage, on the 4th day of July, 1811. In his early manhood he took his degree of Doctor of Medicine from Transylvania University, and in 1830 settled near Church Hill, in Jefferson county, Mississippi, where he was an active and honored practitioner of his profession from that time until about eighteen months prior to his death, when his health so failed that he was no longer able to visit his patients. He died February 7th, 1876, in the 65th year of his age.

Dr. COLEMAN fell a martyr to the conscientious discharge of professional duties. He surrendered his own ease and personal comforts, and even a proper care of himself, in his ministrations to the afflicted. The suffering patient found in him sublime devotion, day and night; through heat or cold, sunshine or storm, he was ever ready to respond to the call of suffering humanity.

His exact business habits, his wonderful industry, his clear judgment, and his untiring zeal in his profession, enabled him to acquire a vast amount of practical knowledge that made him preëminently successful in the practice of medicine. He was without ostentation, learned in the medical sciences. No book or journal was left unread; no knowledge ungathered that was within his reach, which would contribute to the fund of his professional information. His course deserves the highest commendation. The rich stores of learning possessed by him made him deservedly rank among the foremost physicians of the South.

In a large country practice, diversified as it always is, every class of cases comes under the control of a physician situated as Dr. COLEMAN was during his long term of service. In order to be successful, it is demanded that such a physician have as diversified an acquaintance with the whole science of medicine. No opportunity is offered in the country to make a particular

branch of medicine a special study, and thus, by the concentration of the whole mental faculties, develop more profoundly the hidden secrets of that branch of knowledge which always follows the inquiries of the earnest seekers after truth. But it nevertheless does require a more active mind and a more industrious student to keep abreast with the progress of general science of the day, than in the learned professor whose life is devoted to a single course of study and experiment. Dr. Coleman found time in the midst of his active and laborious practice to contribute to other branches of useful knowledge, but so great was his modesty that only his intimate friends and the members of his family knew of his researches. For more than thirty years he kept a daily meteorological table. He also constructed a simple but accurate rain-gauge, observations from which were only given to a few persons and at wide intervals of time, although often sought for by scientific men in different parts of the country. His modesty was only equalled by his real merit; and it is to be regretted that the sensitiveness of his nature was so acute as to cause him to shrink from the public gaze. But it is often thus with the truly noble.

The medical profession at large, and the junior members especially, to whom he was endeared by many kind and generous actions and words of cheering counsel, have lost, in the death of Dr. Coleman, a worthy and honored member; society, a public spirited and useful citizen; his immediate friends and family, a man whose place can never be supplied. The universal esteem in which he was held by the community in which he had lived and labored for nearly a half century, was feelingly manifested on the day of his burial. All classes, white and colored, united as of one accord in paying the last tribute of respect to his memory, and with mingled tears moistened the sod where loving friends had laid him.

"Sad, silent and dark be the tears that we shed,
As the night-dew that falls on the grass o'er his head.

"But the night-dew that falls, though in silence it weeps,
Shall brighten with verdure the grave where he sleeps;
And the tear that we shed, though in secret it rolls,
Shall long keep his memory green in our souls."

E. R. Richardson, M.D.

Fayette, Miss.

METEOROLOGICAL REPORT FOR NEW ORLEANS.

Table I---March.

Day of Mon h.	Temperature.			Mean Barometer Daily.	Relative Humidity—Daily.	Rain fall—inches
	Maximum,	Minimum.	Range.			
1	81	61	20	30.178	76	.00
2	64.5	58	6.5	30.237	65	.00
3	60	42	18	30.394	56	.00
4	67	49	18	30.345	69	.00
5	74.5	61	13.5	30.250	78	.00
6	76.5	65	11.5	30.144	75	1.05
7	66	57	9	30.205	74	.00
8	69	50	19	30.180	69	.00
9	77.5	55	22.5	30.091	80	.00
10	79.5	64	15.5	29.958	79	.00
11	78.5	67.5	11	29.905	80	1.19
12	62	49	13	30.085	80	.00
13	60	42	18	30.279	64	.00
14	69.5	49.5	20	30.120	72	.00
15	75.5	61	14.5	29.800	87	.00
16	70	57.5	12.5	29.952	61	.00
17	69	52.5	16.5	30.098	54	.00
18	59	49	10	30.200	55	.00
19	67	48	19	29.827	95	3.60
20	67	40	27	30.018	77	.00
21	52	34.5	17.5	30.245	71	.00
22	57.5	40	17.5	30.287	70	.00
23	68.5	48.5	20	30 163	76	.00
24	69	59	10	29 696	90	1.02
25	72.5	53	19.5	29 805	74	.00
26	71	58 5	12.5	29.940	71	.00
27	72	57	15	29 746	91	3.40
28	59	50.5	8.5	29.927	62	.00
29	61	45.5	15.5	30.106	65	.00
30	69	48	21	30.035	73	.00
31	73	56	17	29.935	84	.00
Mean..	68.3	52.5	15.8	30.069	73.5	Total. 10.26

Table II---April.

Day of Month.	Temperature.			Mean Barometer Daily.	Relative Humidity—Daily.	Rain fall—inches
	Maximum.	Minimum.	Range.			
1	78	65.5	12.5	29.820	78	.00
2	77 5	68.5	9	29.875	80	.00
3	78	62	16	29.960	65	.89
4	80.5	60	20.5	30.010	59	.00
5	78	60	18	30.065	70	.00
6	72	61	11	30.096	85	.00
7	69	62.5	6.5	29.975	92	5.31
8	71	61	10	29.835	86	.00
9	74	60.5	13.5	29.905	76	.00
10	78	63	15	29.942	76	.00
11	78.5	68	10.5	29.936	88	.00
12	84	71.5	12.5	29 910	84	.00
13	82.5	73 5	9	29.825	84	.91
14	62	52.5	9.5	29.995	87	.00
15	70	52	18	30.125	70	.00
16	78	55.5	22.5	30.060	64	.00
17	72.5	55.5	17	30.124	59	.00
18	74.5	55	19.5	30.163	61	.00
19	76 5	58.5	18	30.177	76	.00
20	78	60	18	30.218	65	.00
21	78.5	62	16.5	30.196	68	.00
22	77.5	64	13.5	30.096	85	.00
23	80	63	17	29.981	67	.00
24	80	62	18	29.987	73	.00
25	71	66.5	4.5	30.095	76	.00
26	80	63	17	30.133	77	.00
27	81	63.5	17.5	30.090	64	.00
28	83	67.5	15.5	30.003	73	.00
29	—	—	—	29.051	78	.00
30	—	—	—	29.976	68	.00
Mean..	76.55	62 05	14.5	30.054	74.3	Total. 6.22

Mortality in New Orleans from March 1st, 1876, to April 30th, 1876, inclusive.

Week Ending	Scarlet Fever.	Malarial Fevers.	Consumption.	Small-pox.	Pneumonia.	Total Mortality.
Mar. 5.....	3	2	20	2	1	107
Mar. 12.....	5	3	19	9	11	111
Mar. 17.....	7	2	20	4	0	100
Mar. 26.....	9	4	19	5	2	122
April 2.....	3	1	16	2	1	119
April 9.....	6	6	12	6	0	102
April 16.....	0	4	16	8	0	114
April 23.....	4	4	17	5	0	114
April 30.....	8	4	13	6	8	117
Totals.....	45	30	152	47	23	1006

UNIVERSITY OF THE CITY OF NEW YORK.

MEDICAL DEPARTMENT.

410 East Twenty-Sixth Street, opposite Bellevue Hospital, New York City.

THIRTY-FIFTH ANNUAL SESSION, 1875-'76.

FACULTY OF MEDICINE.

REV. HOWARD CROSBY, D.D., Chancellor of the University.
MARTYN PAINE, M.D., L.L.D., Emeritus Professor of Materia Medica and Therapeutics.
ALFRED C. POST, M.D., L.L.D., Emeritus Professor of Clinical Surgery; President of the Faculty.
CHARLES A. BUDD, M.D., Professor of Obstetrics,
JOHN C. DRAPER, M.D., L.L.D., Professor of Chemistry.
ALFRED L. LOOMIS, M.D., Professor of Pathology and Practice of Medicine.
WM. DARLING, A.M., M.D., F.R.C.S., Professor of Anatomy.
WM. H. THOMSON, M.D., Professor of Materia Medica and Therapeutics.
J. W. S. ARNOLD, M.D., Professor of Physiology.
JOHN T. DARBY, M.D., Professor of Surgery.
CHAS. INSLEE PARDEE, M.D., Professor of Diseases of the Ear; Dean of the Faculty.
ERSKINE MASON, M.D., Professor of Clinical Surgery.
WALTER R. GILLETTE, M.D., Adjunct Professor of Obstetrics.
WM. STRATFORD, M.D., Adjunct Professor of Chemistry.

POST GRADUATE FACULTY.

D. B. ST. JOHN ROOSA, M.D., Professor of Ophthalmology and Otology.
WM. A. HAMMOND, M.D., Professor of Diseases of the Mind and Nervous System.
STEPHEN SMITH, M.D., Professor of Orthopædic Surgery and Surgical Jurisprudence.
MONTROSE A. PALLEN, M.D., Professor of Gynæcology.
FANEUIL D. WEISSE, M.D., Professor of Surgical Anatomy.
HENRY G. PIFFARD, M.D., Professor of Dermatology.

THE PRELIMINARY WINTER SESSION commences September 15th, 1875, and continues till the opening of the regular session. It is conducted on the same plan as the Regular Winter Session.

THE REGULAR WINTER SESSION occupies four and a half months—commencing on September 29th and continuing till the middle of February. The system of instruction embraces a thorough Didactic and Clinical Course, the lectures being illustrated by two clinics each day. One of these daily clinics will be held either in Bellevue or the Charity Hospital. The location of the College building affords the greatest facilities for Hospital Clinics. It is opposite the gate of Bellevue Hospital, on Twenty-sixth street, and in close proximity to the ferry to Charity Hospital on Blackwell's Island, while the Department of Out-door Medical Charity, and the Hospital Post-mortem Rooms, are across the street. The students of the University Medical College will be furnished with admission tickets to these establishments free of charge. The Professors of the practical chairs are connected with one or both of these Hospitals.

Besides the Hospital clinics, there are eight clinics each week in the College building.

The Faculty desire to call attention particularly to the opportunities for dissection. *Subjects are abundant and are furnished free of charge*, and the Professor of Anatomy spends several hours each day in demonstration in the dissecting-room.

THE POST GRADUATE COURSE will begin September 29th, 1875, and continue during the Regular Winter Session.

FEES FOR THE WINTER COURSE.

For course of Lectures	$140 00
Matriculation	5 00
Demonstrator's fee, including material for dissection	10 00
Graduation Fee	30 00

FEES FOR THE SPRING COURSE.

Students who have attended the Winter Course will be admitted free of charge. Those who have not attended the Winter Course will be required to pay the Matriculation Fee and $30; and, should they decide to become pupils for the Winter, the $30 thus paid will be deducted from the price of the Winter tickets.

For the purpose of assisting meritorious individuals, the Faculty will receive a few *beneficiaries*, each of whom will be required to pay $43 per annum and the Matriculation Fee.

For further particulars and circulars, address the Dean,

Prof. CHARLES INSLEE PARDEE, M.D.,

jy, sep & nov *University Medical College, 410 East 26th Street, New York City.*

HARVARD UNIVERSITY,

Medical Department,

BOSTON, MASS.

NINETY-SECOND ANNUAL ANNOUNCEMENT. (1875-76.)

Faculty of Medicine:

CHARLES W. ELIOT, L.L.D., President.
CALVIN ELLIS, M.D., Professor of Clinical Medicine, Dean.
JOHN B. S. JACKSON, M.D., Professor of Pathological Anatomy.
OLIVER W. HOLMES, M.D., Professor of Anatomy.
HENRY J. BIGELOW, M.D. Professor of Surgery.
JOHN E. TYLER, M.D., Professor of Mental Diseases.
CHAS. E. BUCKINGHAM, M.D., Professor of Obstetrics and Medical Jurisprudence.
FRANCIS MINOT, M.D., Hersey Professor of the Theory and Practice of Medicine.
JOHN P. REYNOLDS M.D., Instructor in Obstetrics.
HENRY W. WILLIAMS, M.D., Professor of Ophthalmology.
DAVID W. CHEEVER, M.D., Adjunct Professor of Clinical Surgery.
JAMES C. WHITE, M.D., Professor of Dermatology.
ROBERT T. EDES, M.D., Assistant Professor of Materia Medica.
HENRY P. BOWDITCH, M.D., Assistant Professor of Physiology.
CHAS. B. PORTER, M.D., Demonstrator of Anatomy and Instructor in Surgery.
FREDERICK I. KNIGHT, M.D., Instructor in Percussion, Auscultation and Laryngoscopy.
J. COLLINS WARREN, M.D., Instructor in Surgery.
REGINALD H. FITZ. M.D., Assistant Professor of Pathological Anatomy.
THOMAS DWIGHT, Jr., M.D., Instructor in Histology.
EDWARD S. WOOD, M.D., Assistant Professor of Chemistry.
HENRY H. A. BEACH, M.D., Assistant Demonstrator of Anatomy.
WM. B. HILLS, M.D, Instructor in Chemistry.

OTHER INSTRUCTORS.

FRANCIS B. GREENOUGH, M.D., and EDWARD WIGGLESWORTH, JR., M.D. *Lecturers on Syphilis.*
GEO. F. H. MARKOE, *Instructor in Materia Medica.*
WM. L. RICHARDSON, *Instructor in Obstetrics.*
J. ORNE GREEN, M.D., and CLARENCE J. BLAKE, M.D., *Lecturers on Otology.*
JAMES R. CHADWICK, M.D., *Lecturer on Diseases of Women.*
CHAS. P. PUTNAM M.D., *Lecturer on Diseases of Children.*
JAMES J. PUTNAM, M.D., *Lecturer on Diseases of the Nervous System.*

The plan of study was radically changed in 1871.* Instruction is given by lectures, recitations clinical teaching, and practical exercises, distributed throughout the academic year. This year begins Sept. 30th, 1875, and ends on the last Wednesday in June, 1876. It is divided into two equal terms, with a recess of one week between them. Either of these two terms is more than equivalent to the former "Winter Session," as regards the amount and character of the instruction. The course of instruction has been greatly enlarged, so as to extend over three years, and has been so arranged as to carry the student progressively and systematically from one subject to another in a just and natural order. In the subjects of anatomy, histology, chemistry, and pathological anatomy, laboratory work is largely substituted for, or added to, the usual method of instruction.

Instead of the customary, hasty, oral examination for the degree of Doctor of Medicine, held at the end of the three years' period of study, a series of written examinations on all the main subjects of medical instruction has been distributed through the whole three years; and every candidate for the degree must pass a satisfactory examination in every one of the principal departments of medical instruction during his period of study

DIVISION OF STUDIES.

For the First Year—Anatomy, Physiology, and General Chemistry.
For the Second Year—Medical Chemistry, Materia Medica, Pathological Anatomy, Theory and Practice of Medicine, Clinical Medicine, Surgery, and Clinical Surgery.
For the Third Year—Therapeutics, Obstetrics, Theory and Practice of Medicine, Clinical Medicine, Surgery, and Clinical Surgery.

Students are divided into three classes, according to their time of study and proficiency. Students who began their professional studies elsewhere may be admitted to advanced standing; but all persons who apply for admission to the second or third year's class, must pass an examination in the branches already pursued by the class to which they seek admission. Examinations are held in the following order:

* In and after September, 1877, an examination on entrance will be required. For particulars see catalogue.

At the end of the first year—Anatomy, Physiology, and General Chemistry.
End of second year—Medical Chemistry, Materia Medica, and Pathological Anatomy.
End of third year—Therapeutics, Obstetrics, Theory and Practice of Medicine, Clinical Medicine, and Surgery.

Examinations are also held before the opening of the School, beginning September 27th.

Students who do not intend to offer themselves for a degree will also be received at any part of the course, for one term or more. Any student may obtain, without an examination, a certificate of his period of connection with the school.

REQUIREMENTS FOR A DEGREE.—Every candidate must be twenty-one years of age, must have studied medicine three full years, have spent at least one continuous year at this School, have passed the required examinations, and have presented a thesis.

COURSE FOR GRADUATES.—For the purpose of affording to those already Graduates of Medicine additional facilities for pursuing clinical, laboratory and other studies, in such subjects as may specially interest them, the Faculty has established a course which comprises the following branches: Histology; Physiology; Medical Chemistry; Pathological Anatomy; Surgery; Auscultation, Percussion and Laryngoscopy; Ophthalmology; Dermatology; Syphilis; Psychological Medicine; Otology; Electro-Therapeutics; Gynæcology; and Obstetrics.

Single branches may be pursued, and on payment of the full fee also the privilege of attending any of the other exercises of the Medical School, the use of its laboratories and library, and all other rights accorded by the University will be granted. Graduates of other Medical Schools who may desire to obtain the degree of M.D. at this University will be admitted to examination for this degree after a year's study in the Graduates' Course.

FEES.

For Matriculation	$ 5 00
For the year	200 00
For one term alone	120 00
For Graduation	30 00
For Graduates' Course, the fee for one year is	200 00
" " " " " " " Term	120 00

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UNIVERSITY OF PENNSYLVANIA

MEDICAL DEPARTMENT,

Thirty-Sixth and Locust Streets, Philadelphia.

110th ANNUAL SESSION, 1875-76.

MEDICAL FACULTY.

George B. Wood, M.D., LL.D., Emeritus Professor of Theory and Practice of Medicine; Henry H. Smith, M.D., Emeritus Professor of Surgery.

Joseph Carson, M.D., Prof. of Materia Medica and Pharmacy; Robert E. Rogers, M.D. Prof. of Chemistry; Joseph Leidy, M.D., LL. D., Prof. of Anatomy; Francis G. Smith, M.D., Prof. of Institutes of Medicine; R. A. F. Penrose, M.D., Prof. of Obstetrics and Diseases of Women and Children; Alfred Stille, M.D., Prof. of Theory and Practice of Medicine and Clinical Medicine; D. Hayes Agnew, M.D., LL.D., Prof. of Surgery.

Demonstrator of Anatomy, H. Lenox Hodge, M.D.; of Surgery, Charles T. Hunter, M.D.; of Practical Chemistry, George M. Ward, M.D.; of Experimental Physiology, Isaac Ott, M.D.

Clinical Instruction is given at the University Hospital as follows: Surgery, Profs. Agnew and J. Neill; Medicine, Prof. Pepper; Diseases of Women and Children, Prof. Goodell; Diseases of the Eye, Prof Norris; Diseases of the Ear, Prof. Strawbridge; Nervous Diseases, Prof. H. C. Wood, Jr.; Skin Diseases, Prof. L. A. Duhring; Morbid Anatomy and Histology, Prof. J. Tyson.

The Philadelphia Hospital also is contiguous to the University, and its Clinical Lectures are free to all medical student. Students may be examined on the elementary branches at the the end of the second course, and, if approved, may devote themselves during their third course to the applied branches only.

During the Spring and Summer, Lectures on Zoology and Comparative Anatomy, Botany, Hygiene, Medical Jurisprudence and Toxicology, and Geology, are delivered by Professors Allen, Wood, Hartshorne, Reese, and Howell, of the Auxiliary Faculty, and are free to matriculates of the Medical Department.

The Lectures of 1875-76 will commence on Monday, October 4th, and end on the last day of February ensuing.

Fees.—For one full course, $140; or, for each professor's ticket separately, $20. Matriculation fee (paid once only), $5. These fees are payable in advance. Graduation fee, $30.

Letters of inquiry should be addressed to

ROBERT E. ROGERS, M.D., Dean,
P. O. Box 2838, *Philadelphia.*

1819 Medical College of Ohio. 1875

(CINCINNATI.)

PRELIMINARY TERM begins September 1st.
REGULAR TERM begins October 1st.
SESSION ends about March 1st, 1876.

FEES.

General Ticket	$40 00
Matriculation Ticket	5 00
Demonstrator's "	5 00
Graduation Fee	25 00

ADVANTAGES.

Besides the large City Hospital, open to all Students, the Medical College of Ohio has a hospital of 200 beds under her exclusive control. The *new* amphitheatre in this hospital, with seats for 450 and all the modern conveniences, will be ready by September 1st.

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Number of Matriculants last Session	282
Number of Graduates	102

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These instruments have received the indorsement and recommendation of the medical profession generally, and are now more in use than all other similar instruments taken together

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206 *West Lake Street, Chicago, Ills*

BELLEVUE HOSPITAL MEDICAL COLLEGE,

CITY OF NEW YORK.

SESSIONS OF 1875-1876.

THE COLLEGIATE YEAR in this Institution embraces a preliminary Autumnal Term, the Regular Winter Session, and a Summer Session.

THE PRELIMINARY AUTUMNAL TERM for 1875-1876 will commence on Wednesday, September 15th, 1875, 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, September 30th, 1874, and end about the 1st of March, 1875.

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 o Women.

AUSTIN FLINT, M. D.,
Professor of the Principles and Practice of Medicine and Clinical Medicine.

W. H. VAN BUREN, M. D.,
Prof. of Principles of Surgery with Diseases of the Genito-Urinary System and Clinical Surgery.

LEWIS A. SAYRE, M. D.,
Professor of Orthopedic Surgery, Fractures and Dislocations, and Clinical Surgery.

ALEXANDER B. MOTT, M. D.,
Professor of Clinical and Operative Surgery.

WILLIAM T. LUSK, M. D.,
Professor of Obstetrics and Diseases of Women and Child en, and Clinical Midwifery.

EDMUND R. PEASLEE, M. D., LL. D.,
Professor of Gynæcology.

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.,
Professor of Ophthalmology andOtology.

JOHN P. GRAY, M.D.,
Professor of Physiological Medicine and Medical Jurisprudence.

EDWARD L. KEYES, M D.,
Professor of Dermatology, and Assistant to the Chair of Principles of Surgery

EDWARD G. JANEWAY, M. D.,
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.

The Summer Session will consist chiefly of Recitations from Text-books. This term continues from the middle of March to the end of June. 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.

jy&sep-p

UNIVERSITY OF LOUISVILLE,

Medical Department,

CORNER OF EIGHTH AND CHESTNUT STREETS.

THIRTY-EIGHTH ANNUAL SESSION.

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Professor of Anatomy and the Operative Surgery of the Eye.

L. P. YANDELL, JR., M. D.,
Professor of Therapeutics and Clinical Medicine.

E. R. PALMER, M. D., SECRETARY,
Professor of Physiology and Physical Diagnosis.

T. S. BELL, M. D.,
Professor of the Science and Practice of Medicine and Public Hygiene.

JOHN E. CROWE, M. D.,
Professor of Obstetrics and Diseases of Women and Children.

JAMES W. HOLLAND, M. D.,
Professor of Materia Medica and Medical Chemistry.

DAVID W. YANDELL, M. D.,
Professor of the Science and Art of Surgery and Clinical Surgery.

R. O. COWLING, M. D.,
Professor of Surgical Pathology and Operative Surgery.

W. O. ROBERTS, M. D.,
Demonstrator of Anatomy.

FEES:

Professors's Ticket in full, $50. Matriculation Fee, $5. Demonstrator's Ticket, $10. Graduation Fee, $30. Hospital Ticket—required by the City—$5.

The regular Session will commence on the first Monday in October, and continue until the 1st of March.

A Preliminary Course of Lectures, FREE TO ALL STUDENTS, will commence on the second Monday in September, and continue till the opening of the Regular Term.

J. M. BODINE, M.D., DEAN OF FACULTY.

For the Annual, containing full particulars, address
E. R. PALMER, M.D., *Secretary of Faculty*, Louisville, Ky.

WOMEN'S HOSPITAL MEDICAL COLLEGE,

OF CHICAGO.

THE FIFTH ANNUAL COURSE OF LECTURES

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W. H. BYFORD, A. M., M. D., Professor Emeritus of Obstetrics and Diseases of Women.
A. FISHER, M. D., Professor Emeritus of Surgery.
ROSWELL G. BOGUE, M. D., A. H. FOSTER, M. D., Professors of Surgery.
T. D. FITCH, M. D, SECRETARY OF FACULTY, Professor of Diseases of Women.
E. MARGUERAT, M. D, Professor of Obstetrics.
JOHN BARTLETT, M. D., Professor of Diseases of Children.
MARY H. THOMPSON, M. D., CORRESPONDING SECRETARY, Professor of Hygiene.
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ABDOMINAL SUPPORTERS,
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Manufactured on the Sea-Shore by HAZARD & CASWELL, from Fresh and Selected Livers.

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A Dressing for Gangrenous Sores, Wounds, Ulcers, and Fetid Discharges of all kinds; for Skin Disease in its thousand phases; for Baths, the Laundry, the Sick Chamber—wherever there is Impurity, Bad Smell, or Infection; for its Sweetens and Disinfects everything. From its Purifying and Disinfecting Qualities it can be blended, and with much benefit, with every Ointment. Recommended by *British Medical Journal*, the *Lancet*, the *Medical Times*, and the *Medical Press and Circular*.

Full Directions with each bottle.

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FOR MEDICINAL PURPOSES.

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Receives deposits of Fifty Cents and upwards, and allows

SIX PER CENT. INTEREST

On all deposits remaining three months or longer.

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GUARANTEE RATES.

FOR A YEAR OR LESS PERIOD.

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Gold Coin or Bullion	1 25	"	1 000
Silver Coin or Bullion	2 00	"	1,000
Silver or Gold Plate; under seal, on owner's estimate of full value, and rate subject to adjustment for bulk, on a basis of	1 00	"	1,000

Deeds, Mortgages, Valuable Papers generally, when of no fixed value, $1 00 a year each, or according to bulk.

Wills $5 00. which premium covers the remainder of the life of the maker.

Cash Boxes, or small Tin Boxes, for papers of Bankers, Capitalists, Merchants, Lawyers, Tradesmen, Families, etc., will be received at $25 each box or trunk per year, contents unknown to the Company, and liability limited, or they will be insured for the full amount, contents known, at above rates. No charge less than one dollar.

The Company is prepared to offer for RENT (the Lessee exclusively holding the key or combination),

SAFES INSIDE ITS BURGLAR-PROOF VAULT,

At rates varying from $15 to $100, according to size and location.

COUPONS AND INTEREST WILL BE COLLECTED WHEN DESIRED, AND REMITTED TO THE OWNERS, FOR WHICH ONE PER CENT. ON AMOUNT COLLECTED WILL BE CHARGED.

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The main Vault, or safe, is constructed of alternate plates of steel and iron, is believed to be the largest, strongest and most secure that has ever been constructed, and occupies a space about twenty feet square, immediately in the centre of the building, on the first floor. The doors of the Vault, when closed, are locked with five distinct locks. The Vault is fitted inside with some 3,600 Safes, of wrought iron, each of which has a distinct and different lock. 2,500 of which are combination, and the rest key locks. They are constructed with such care and precision, that no key will unlock any other lock than that to which it belongs. Each safe, of the three smaller sizes, will be fitted with a substantial tin box, with lock and key, for the convenience of renters.

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Will pay interest at 6 per cent. per annum on all savings deposits. Interest added to principal in January and July of each year.

Practice Industry and Economy,

and you will always be prepared to meet and successfully resist adversity. By industry you earn and by economy you save money, and there is no place so secure as a

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Working and Earning

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First Thousand Dollars,

which generally settles the question of business life with most men.

Young Men and Women

should constantly keep before them the fact that extravagance and want of thrift are the most prolific causes of poverty and destitution, and the forerunners of nearly all the

Crime and Disease

with which the human race is afflicted. The time has come for the young people of the South to examine seriously the situation of the country and the people, and see what can be done towards correcting the habits of

Extravagance and Self-Indulgence

which have proved such hindrances to our material advancement. We must draw lessons from our past misfortunes, and force circumstances as helpers into the harness. In other words we MUST learn to SAVE. It is the mission of the

Citizens' Savings Bank, specially

to assist and encourage you in your efforts to improve your condition, by affording you a sure and safe deposit for your money, where you can at any time control it according to your own needs or desires without any previous notice.

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with a determination to lay up something—no matter how little—for the future, out of his present gains, will get rich although it may take him years.

The Result is Sure

to come in time and fortunes thus accumulated very rarely are lost, and riches thus hoarded hardly ever have wings. This fact should be a lesson to those who wish to succeed in life as farmers, as well as for any other class.

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Concentrated Dry Pepsin,

of which one grain digests 100 to 125 grains of coagulated albumen in four to six hours, and

LIQUID PEPSIN,

of which one ounce dissolves 90 grains of albumen.

ALL ARTICLES WARRANTED.

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WHICH WE SELL AT THE MAKERS' PRICES.

The extensive Dispensing Department and complete Laboratory connected with my Wholesale Business enables me to give that careful attention to Physicians' Orders necessary to ensure filling them satisfactorily.

Having always exercised the greatest care in the selection of the crude materials employed, and making all pharmaceutical preparations of standard strength, in strict accordance with established and recognized formulas, I have earned and am entitled to the confidence of the profession.

I. L. LYONS.

PNEUMATIC ASPIRATION

AFTER THE MANNER OF DIEULAFOY.

"It is always possible, owing to Aspiration, to search for a fluid collection without any danger, whatever may be its seat or its nature."

"I have thrust these needles into almost every part of the body, into the Joints, the Liver, the Spleen, the Bladder, the Intestines, the Lungs and the Meninges, and I can affirm, and a great number of observers affirm with me, that we have never seen consecutive accidents."—*Dieulafoy on Pneumatic Aspiration*, pp. 21, 24.

We invite the attention of the Medical Profession to this New Apparatus for Aspiration, constructed upon the general plan of Pontain's modification of Dieulafoy's Aspirator, but containing the following improvements and inventions of our own:

Fig. 68.

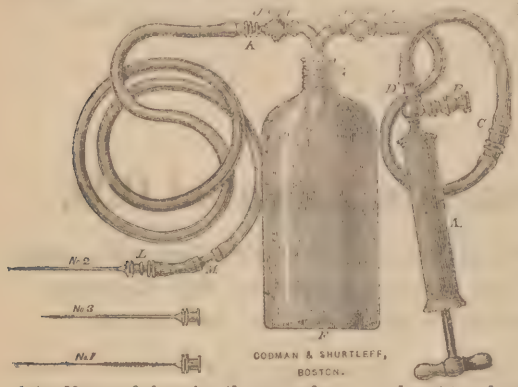

Fig. 69. The Stopper and Cocks supplied with Apparatus No. 2.

1st.—Means of changing the pump from an exhaust to a force-pump, and *vice versa*, thereby enabling the operator not only to draw an abnormal fluid, but to inject the cavity through the tubes and needle of the apparatus with one adapted to induce healthy action.—*See Dieulafoy on Aspiration*, pp. 276, 278.

2d.—The employment in our apparatus No. 1 of a metal Screw Cap, fitting the neck of the receiver supplied with this apparatus so securely that it cannot be forced from its place by condensed air while injecting, or accidentally removed while the receiver is in a state of vacuum for aspiration.

3d.—The substitution, for the ordinary oil silk valves of other apparatus, of a kind indestructible, both in form and material.

4th.—A simple and comparatively inexpensive attachment for evacuating the contents of the stomach, equal, if not superior to any in use hitherto.

Recommendations bestowed upon our Aspirators, by physicians familiar with the latest European and American ones, lead us to believe that, in some important particulars at least, they are superior to any.

In his work on Pneumatic Aspirations, Dieulafoy shows the harmlessness of the Aspiratory Puncture and its great superiority to the Exploring Trocar as a means of accurate diagnosis in all collections of Pathological Fluids. It has been used with unprecedented success in the Retention of Urine, Reduction of Strangulated Hernia, in Ascites, Hydrothorax, Empyema, Pneumothorax, Effusions into the Pericardium, Serous, Purulent and Hematic Effusions of the knee, Hydrocele, Hydatid Cysts, Abscesses of the Liver, and in various other Pathological Lesions.

PRICES OF APPARATUS.

No. 1. Air-Pump—exhaust or condensing as described; 16 oz. receiver, of strong glass, with screw cap; three steel, gold-plated Aspiratory Needles, together with the necessary tubes; stop-cocks, etc., as shown in Fig. 68, fitted in a neat case, accompanied with printed directions $18.00

No. 2. The same, without receiver and with rubber stopper (see Fig. 69) to fit almost any bottle of quart capacity, or less, instead of screw-cap arrangement, also with printed directions 16.00

No. 3. Dieulafoy's Notched Aspirator, Nickel-plated, with two needles, tubes, etc, in case 14.00

No. 4. Stomach Attachment, as described, adapted to pump accompanying Nos. 1 and 2, additional 6.00

The foregoing are the product of our own factory, and are warranted in every respect.

Also, Dieulafoy on Pneumatic Aspiration, post-paid, by mail, on receipt of .. 3.40

☞ *Full description on application.* Illustrated Catalogue of Atomizing and Surgical Instruments sent by mail, post-paid, on application.

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N.B.—See our other Advertisement in alternate numbers.

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During my many years' experience I have always recognized the importance of establishing in our midst a LABORATORY which would enable Physicians to procure at home, with a guarantee of purity and reliability, the many, elegant and really scientific preparations which have of late years become so popular with practitioners and patients. Supplied with the MOST APPROVED APPARATUS, and in charge of intelligent and experienced pharmaceutists, I may justly claim the products of my laboratory to be excelled by none in the country, and to be far superior to most others of foreign manufacture. I cannot attempt here to enumerate all of the extensive list of my preparations, and will only call attention to the leading ones, which have, by their absolute reliability, elicited the praise and approbation of the leading physicians in this city.

I also beg to add that I am prepared to manufacture at short notice any pharmaceutical preparation which physicians may be unable to procure elsewhere.

COD LIVER OIL with PHOSPHATE LIME;
" " " LACTO PHOSPHATE, containing 50 per cent. Cod Liver Oil and 4 grains Lacto phosphate Lime to tablespoon.
SYRUP LACTO PHOSPHATE LIME.
" " " IRON.
" PHOSPHATES OR CHEMICAL FOOD.
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ELIXIR CALISAYA, with PYROPHOSPHATE OF IRON.
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" VALERIAN, AMMONIATED.
WINE OF PEPSINE.
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CINCHO-QUININE, which was placed in the hands of physicians in 1869, has been tested in all parts of the country, and the testimony in its favor is decided and unequivocal.

It contains the important constituents of *Peruvian Bark*, Quinia, Quinidia, Cinchonia and Cinchonidia, in their alkaloidal condition, and *no external agents*.

UNIVERSITY OF PENNSYLVANIA, Jan. 22, 1875.

"I have tested CINCHO-QUININE, and have found it to contain *quinine*, *quinidine*, *cinchonine*, and *cinchonidine*."

F. A. GENTH, Prof. of Chemistry and Mineralogy.

LABORATORY OF THE UNIVERSITY OF CHICAGO, February 1, 1875.

"I hereby certify that I have made a chemical examination of the contents of a bottle of CINCHO-QUININE, and by direction I made a qualitative examination for *quinine*, *quinidine*, and *cinchonine*, and hereby certify that I found these alkaloids in CINCHO-QUININE."

C. GILBERT WHEELER, Professor of Chemistry.

"I have made a careful analysis of the contents of a bottle of your CINCHO-QUININE, and find it to contain *quinine*, *quinidine*, *cinchonine*, and *cinchonidine*."

S. P. SHARPLES, State Assayer of Mass.

In no other form are combined the important alkaloidal principles of Bark, so as to be accessible to medical gentlemen.

In it is found Quinidia, which is believed to be a better anti-periodic than Quinia; and the alkaloids acting in association, unquestionably produce favorable remedial influences which can be obtained from no one alone.

In addition to its superior efficacy as a tonic and anti-periodic, it has the following advantages which greatly increase its value to physicians :—

1st. It exerts the full therapeutic influence of Sulphate of Quinine, in the same doses, without oppressing the stomach, creating nausea, or producing cerebral distress, as the Sulphate of Quinine frequently does, and it produces much less constitutional disturbance.

2d. It has the great advantage of being nearly tasteless. The bitter is very slight, and not unpleasant to the most sensitive, delicate woman or child.

3d. It is *less costly*, the price will fluctuate with the rise and fall of barks, but will always be much less than the Sulphate of Quinine.

4th. It meets indications not met by that Salt.

Middleburg, Pa.,
April 13, 1875.

Gentlemen: I cannot refrain from giving you my testimony regarding CINCHO-QUININE.

In a practice of twenty years, eight of which were in connection with a drug store, I have used Quinine in such cases as are generally recommended by the Profession. In the last four or five years I have used *very* frequently your CINCHO-QUININE in place of Quinine, and have *never* been disappointed in my expectations.

JNO. Y. SHINDEL, M.D.

Gents: It may be of some satisfaction to you to know that I have used the alkaloid for two years, or nearly, in my practice, and I have found it reliable, and *all* I think that you claim for it. For children and those of irritable stomachs, as well as those too easily *quininized* by the Sulphate, the Cincho acts like a charm, and we can hardly see how we did without it so long. I hope the supply will continue.

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I have used your CINCHO-QUININE exclusively for four years in this malarial region.

It is as active an anti-periodic as the Sulphate, and more agreeable to administer. It gives great satisfaction.

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W. E. SCHENCK, M.D., Pekin, Ill.

I am using CINCHO-QUININE, and find it to act as reliably and efficiently as the Sulphate.

In the case of children, I employ it almost exclusively, and deem its action upon them more beneficial than that of the time-honored Sulphate.

W. C. SCHULTZE, M.D.,
Marengo, Iowa.

CINCHO-QUININE in my practice has given the best of results, being in my estimation far superior to Sulphate of Quinine, and has many advantages over the Sulphate. G. INGALLS, M.D.,
Northampton, Mass.

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PROSPECTUS.

Office NEW ORLEANS MEDICAL AND SURGICAL JOURNAL,
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The undersigned informs the friends and patrons of the NEW ORLEANS MEDICAL AND SURGICAL JOURNAL, that Messrs. Seymour & Stevens, Nos. 96 and 98 Common Street, New Orleans, have this day become proprietors of that Journal, through an arrangement effected with its late proprietor, Mr. James Gresham.

The reputation of the new proprietors, who are widely known as among the oldest and most substantial business firms of New Orleans, is a sufficient guarantee that the publication and pecuniary management of the Journal will be so conducted as to give full satisfaction to its patrons.

The Editor respectfully asks in their behalf, a continuance and increase of patronage.

SAMUEL M. BEMISS, M.D., *Editor.*

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Having become the proprietors of the NEW ORLEANS MEDICAL AND SURGICAL JOURNAL, we respectfully invite your attention to the following items of information :

The editorial management will continue under charge of Dr. S. M. Bemiss, assisted by such collaborators as he may select. The business affairs of the Journal will be conducted exclusively by the undersigned.

Number one of the Third Volume of the new series, will be issued on the 1st of July next. Each volume contains near one thousand pages, mostly original; "exhibiting, it is believed, the best exposition of Southern Medicine offered the profession." Subscriptions, contributions, and advertisements may be sent to the undersigned. The subscription price is Five Dollars a year, in advance.

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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.

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6th. The cutters are equal to steel, and will wear as long, and increase in sharpness by use.

7th. **THEIR MODERATE COST.**

EXTRACTS

From the Minutes of the Pharmaceutical Meeting held Dec. 16 1873, *at the Philadelphia College of Pharmacy.*

"On behalf of the manufacturers, Mr. Andrew Blair presented to the College a new Drug Mill, made by the Enterprise Manufacturing Co. of Pa., and a discussion was entered into upon the merits or demerits of the Mill, in the course of which Professor Proctor remarked that he had found it to answer very well for general work, and considered it an improvement on SWIFT'S."

"Mr. Andrew Blair spoke at length in favor of the Mill, and believed it to be the best that had yet been contrived for the purpose of grinding drugs. He exhibited five specimens—Sassafras, Gentian, Senna, Coriander and Liquorice Root—which were ground with just ordinary care, and not sifted. The results spoke practically and favorably for the work of the new comer, and it looks as if the time was approaching when the retail druggist could be independent of the drug miller, and furnish many of his own powders without leaving his store."

"Professor Maish considered the Mill the best that had yet been devised, and thought that one of the prominent advantages was the facility with which the internal working parts could be viewed by simply turning one screw."

OPINIONS.

P. W. BEDFORD, Professor New York College of Pharmacy, writes: "I exhibited your Mill at a meeting of our College. The number present was small, but they appeared much pleased with the work of the Mill. I ground some Seeds, Barks and Roots in their presence, and all expressed their views favorably. I sold two of them at once, and hope to sell still more from it."

P. W. BEDFORD, Professor New York College of Pharmacy, further writes: "Having given your new Drug Mill still further trial, I find it answers an admirable purpose for every want of the druggist in which an iron mill can be used. Have tried various kinds of drugs which may be called representative in their character. I can say, that in the rapidity of its work, and the fineness of the product as compared with the labor expended, it excels any of the other drug mills in the market."

J. F. HANCOCK, Professor Baltimore College of Pharmacy, writes: "I am very much pleased with your Drug Mill, and my young men, who have to work it, are delighted with the change from Swift's Mill. Will shortly give you a lengthy opinion regarding the merits of your Mill, sharply, but sincerely expressed, so that, if necessary, you can use it to your advantage."

JOSEPH P. REMINGTON, Pharmacist, Philadelphia, writes: "The Mill which you have produced for grinding drugs, possesses, in my judgment, many advantages over the mills usually seen in the market. Prominent among these may be mentioned a more accurate adjustment of the working parts, with greater power. The case with which the whole internal chamber may be exposed to view, and the drawer at the bottom of the Mill communicating directly with the delivery spout, effectually prevents the loss which constitutes the great objection when irritating or dusty powders are to be made."

T. H. PATTERSON, Secretary Chicago College of Pharmacy, writes: "From the examination given your Mill by the members of the College at their meeting, would say that it met with the approval of those present."

"PHILADELPHIA, December 3, 1873.

"ENTERPRISE MANUFACTURING CO. OF PA.

"Gentlemen: We take pleasure in stating that the Mill you recently sent us (No. 9) is the most perfect and complete thing of its kind we have ever seen. We have tried almost all the Mills to be found in the market, and none have been entirely satisfactory. Your Mill works to our entire satisfaction, and we think will supply a want long felt by many druggists throughout the country.

"Hoping that you will make it generally known to the trade that such a Mill can be had, we are sure you will dispose of many of them.

"Very respectfully,

H. C. BLAIR'S SONS, Apothecaries, Philadelphia.

CLAY. W. HOLMES, Druggist, Wilkesbarre, Pa., writes: "I have subjected your Mill to a very severe trial, and I must say, it has more than equalled my utmost expectations. It will do more and better grinding than any Mill I ever saw or heard of. It has not failed in a single instance. I have used the Mill for grinding Alum, Chlorate Potassia, Gum Arabic, Tonqua Beans, Sarsaparilla Root, Rose Leaves, Tragacanth and Vanilla Beans, some of the most difficult things we have, with perfect success."

E. MCINALLY, Druggist, writes: "The Mill you sent us not long ago has more than filled our most sanguine expectations. We are thoroughly delighted with it, and if it were the only Mill made we would not part with it for many times its cost. The short time we have had it, it has nearly paid for itself one-half, and more than whole for the economy in labor. We offer the above recommendation voluntarily without any solicitation, because we are truly thankful that we have a 'good thing,' and we want the drug trade to learn of any article that will so much economise labor. Any one referred to us for its merits, we shall be glad to speak of it in the just terms it deserves.

P. M. ZIEGLER, Druggist, Reading, Pa., writes: "Allow me a voluntary testimonial in favor of your new Drug Mill, which I have had the privilege of trying for one month, as it may possibly be of some significance with some of my fellow druggists.

"Very well I am pleased with it; during four years have I been in search of a better Mill than Swift's, that I have had. This suits me much better than any I have tried; it can be firmly fastened to a counter, and it is compact in its construction; it grinds rapidly and of any degree of fineness. It can readily be taken apart to be cleaned, and its price is reasonable. In my opinion, it is the best and most desirable now in use, and as such I would strongly recommend it to all who may be in need of a Mill of this size."

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This article, now in course of completion, will be found of great service to the Druggist, in cutting his herbs and roots, and for the purpose it is the *best yet devised.*

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The universal demand for Cod Liver Oil that can be depended upon as strictly pure and scientifically prepared, having been long felt by the Medical Profession, we were induced to undertake its manufacture at the Fishing Stations, where the fish are brought to land every few hours, and the Livers consequently are in great perfection.

This Oil is manufactured by us on the sea-shore, with the greatest care, from fresh, healthy Livers, of the Cod only, without the aid of any chemicals, by the simplest possible process and lowest temperature by which the Oil can be separated from the cells of the Livers. It is nearly devoid of color, odor and flavor—having a bland, fish-like, and, to most persons, not unpleasant taste. It is so sweet and pure that it can be retained by the stomach when other kinds fail, and patients soon become fond of it.

The secret of making good Cod-Liver Oil lies in the proper application of the proper degree of heat; too much or too little will seriously injure the quality. Great attention to cleanliness is absolutely necessary to produce sweet Cod-Liver Oil. The rancid Oil found in the market is the make of manufacturers who are careless about these matters.

PROF. PARKER, of N. Y., says: "I have tried almost every other manufacturer's Oil, and give yours the decided preference."

PROF. HAYS, State Assayer of Massachusetts, after a full analysis of it, says: "It is the best for foreign or domestic use."

After years of experimenting, the Medical Profession of Europe and America, who have studied the effects of different Cod-Liver Oils, have unanimously decided the light straw-colored Cod-Liver Oil to be far superior to any of the brown Oils.

The Three best Tonics of the Pharmacopœia: IRON—PHOSPHORUS—CALISAYA.

CASWELL, HAZARD & CO. also call the attention of the Profession to their preparation of the above estimable Tonics, as combined in their elegant and palatable **Ferro-Phosphorated Elixir of Calisaya Bark,** a combination of the Pyrophosphate of Iron and Calisaya never before attained, in which the nauseous inkiness of the Iron and astringency of the Calisaya are overcome, without any injury to their active tonic principles, and blended into a beautiful Amber-colored Cordial, delicious to the taste, and acceptable to the most delicate stomach. This preparation is made directly from the **ROYAL CALISAYA BARK,** not from **ITS ALKALOIDS OR THEIR SALTS**—being unlike other preparations called "Elixir of Calisaya and Iron," which are simply an **Elixir of Quinine and Iron.** Our Elixir can be depended upon as being a true Elixir of Calisaya Bark with Iron. Each dessert-spoonful contains seven and a half grains Royal Calisaya Bark, and two grains Pyrophosphate of Iron.

Ferro-Phosphorated Elixir of Calisaya Bark with Strychnia. This preparation contains one grain of Strychnia added to each pint of our Ferro-Phosphorated Elixir of Calisaya Bark, greatly intensifying its tonic effect.

Ferro-Phosphorated Elixir o Calisaya with Bismuth, containing eight grains Ammonio-Citrate of Bismuth in each table-spoonful of the Ferro-Phosphorated Elixir of Calisaya Bark.

Elixir Phosphate Iron, Quinine and Strychnia. Each tea-spoonful contains one grain Phosphate Iron, one grain Phosphate Quinine, and one sixty-fourth of a grain of Strychnia.

Ferro-Phosphorated Elixir of Gentian, containing one ounce of Gentian, and one hundred and twenty-eight grains Pyrophosphate of Iron to the pint, making in each dessert-spoonful seven and one-half grains Gentian and two grains Pyrophosphate Iron.

Elixir Valerianate of Ammonia. Each tea-spoonful contains two grains Valerianate Ammonia.

Elixir Valerianate of Ammonia and Quinine. Each tea-spoonful contains two grains Valerianate Ammonia and one grain Quinine.

Ferro-Phosphorated Wine of Wild Cherry Bark. Each fluid-drachm contains twenty-five grains of the Bark, and two grains of Ferri-Pyrophosphate.

Wine of Pepsin. This article is prepared by us from fresh Rennets and pure Sherry Wine.

ELIXIR TARAXACUM COMP. Each dessert-spoonful contains fifteen grains of Taraxacum

ELIXIR PEPSIN, BISMUTH AND STRYCHINE. Each fluid-drachm contains one sixty-fourth of a grain of Strychnine

JUNIPER TAR SOAP. Highly recommended by the celebrated Erasmus Wilson, and has been found very serviceable in chronic eczema and diseases of the skin generally. It is invaluable for chapped hands and for roughness of the skin caused by change of temperature. It is manufactured by ourselves, from the purest materials, and is extensively and successfully prescribed by the most eminent Physicians.

IODO-FERRATED COD-LIVER OIL. This combination holds sixteen grains Iodide of Iron to the ounce of our pure Cod-Liver Oil.

COD-LIVER OIL, WITH IODINE, PHOSPHORUS AND BROMINE. This combination represents Phosphorus, Bromine, Iodine and Cod-Liver Oil, in a state of permanent combination, containing in each pint: Iodine, eight grains; Bromine, one grain; Phosphorus, one grain; Cod-Liver Oil, one pint.

COD-LIVER OIL, WITH PHOSPHATE OF LIME. This is an agreeable emulsion, holding three grains Phosphate of Lime in each table-spoonful.

COD-LIVER OIL WITH LACTO-PHOSPHATE OF LIME.

CASWELL, HAZARD & CO.,

Druggists and Chemists, New York.

E. J. HART & CO.,

Importers and Wholesale Druggists,

GROCERS AND COMMISSION MERCHANTS,

Stores, 73, 75, 77 and 79 Tchoupitoulas Street,

Warehouses, 93, 95 and 97 Tchoupitoulas Street,

(ESTABLISHED IN 1836.) NEW ORLEANS.

IMPORTERS OF

Opium, English Calomel, English Blue Mass, French Quinine, Iodide Potassium,

Cream of Tartar, Red Argols, Sulphur, Brimstone, Castile Soap, etc.

DYES, DYERS' MATERIALS, ANALINE COLORS, ETC.;

Argols, Indigo, Madder, Logwood. Fustic, Hypernic, Sanders, Red Wood, Catechu, etc.

COLMAN'S MUSTARD—all grades, fresh and genuine.

Nutmegs, Mace, Sago, Tapioca, etc. ESSENTIAL OILS. Orange Flower Water, Carbonate Ammonia, Carbonate Magnesia, Medicinal Roots, Herbs, Seeds, etc.

PERFUMERY AND DRUGGISTS' SUNDRIES—Brushes, Combs, Soaps, etc. Lubin's Coudray's Violette, Benbows' Pomades, Extracts, etc., always on hand.

HEAVY CHEMICALS;

Arsenic, Alum, Blue Stone, Copperas, Epsom Salts, Sal Soda, Soda Ash, Bi-carb Soda Caustic Soda, etc., etc.

Adhesive Plaster, Odorators, Elastic Gum Bougies and Catheters, Breast Glasses with Elastic Tubes, Nipple Shields with Elastic Tubes, Feeding Bottles and Fittings, Chest Protectors, Flesh Gloves and Rubbers, India Rubber Tents and Tubing, Lint [Taylor's Patent], Violet Powder, Wafer Paper, Powder Folders, Soda Water Taps, Sponge Bags and Bathing Caps, Glass and Pewter Syringes, India Rubber Syringes, Tooth and Nail Brushes, Hair Brushes, Mortars and Pestles, Court Plaster, Smelling Bottles, Sea Tangle and other Tents, Carbolized Sponge Tents, Elastic Stockings, etc.

COAL-TAR SOAP—Wright's Sapo Carbonis Detergens:

This Soap, being impregnated with the detergent qualities of the Coal Tar, is purifying, disinfecting, and anti-septic. As a Medicinal Agent, it is used in all the lighter forms of Skin Disease, so prevalent in infancy and childhood—whether on the head, face or body. Its use exercises a marked and salutary influence on the general health, and assists in warding off the attack of Scarlatina, Smallpox, and other kindred maladies, and thoroughly purifies and disinfects the body after an attack, so necessary for the prevention of the graver secondary complications.

For Medical Men and Students in hospital practice, waiting on lying-in women, dressing fetid sores, and engaged in the dissecting room, its use is essential. As a Toilet Soap it is unequalled. By its purifying influence it destroys all offensive odor from the person; the skin is rendered sweet, clean and healthful; and the rich creamy lather is a refreshing luxury. Recommended by *British Medical Journal*, the *Lancet*, the *Medical Times*, and the *Medical Press and Circular*.

ALCOHOLIC SOLUTION OF COAL-TAR:

Wright's Liquor Carbonis Detergens—A Thorough Disinfectant.

A Dressing for Gangrenous Sores, Wounds, Ulcers, and Fetid Discharges of all kinds; for Skin Disease in its thousand phases; for Baths, the Laundry, the Sick Chamber—wherever there is Impurity, Bad Smell, or Infection: for its Sweetens and Disinfects everything. From its Purifying and Disinfecting Qualities it can be blended, and with much benefit, with every Ointment. Recommended by *British Medical Journal*, the *Lancet*, the *Medical Times*, and the *Medical Press and Circular*.

Full Directions with each bottle.

For Scabies.—Solution 1 part, water 5 parts. It is a *certain* and most *reliable remedy*.

GROCERIES;

Coffee, Sugar, Provisions, Powder and Shot, Pickles, Preserves. Hermetically Sealed Fruits, Meats, Oysters, etc.

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Tobacco, Liquors, Fine Whiskies, Brandies, Madeira, Port, Sherry and Claret Wines, and all articles appertaining to the Drug and Grocery Business.

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Importers and Wholesale Druggists,

Grocers and Commission Merchants,

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We offer to the Trade a full and complete assortment of

PURE AND FRESH DRUGS,

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And a large and well-selected stock of

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" CINCHONA PALL,	" OPII SED.,
" BUCHU,	" SARSAPARILLA,
" BELLADONNA,	" TARAXICI, etc., etc.

FRENCH PATENT MEDICINES and ANALINE COLORS; the latter in great variety.

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PURE POWDERED DRUGS—Quantity and Quality guaranteed.

SURGICAL INSTRUMENTS OF ALL KINDS.

Apparatus for Local Anæsthesia; Laryngoscopes; Simms' Instruments--all kinds; Camman's Stethescopes; Simple Throat Mirrors; Holt's Dilators; Æsthiometers; Miller's Intra Uterine Scarificator; French Rubber Urinals; Automatic Vaccinators; Pocket Cases—all kinds; Specula, Dissecting and General Operating Instruments; Eye and Ear Cases, etc., etc.

All new and improved instruments can be obtained from us as fast as they appear.

Saddle Bags, Medicine Chests, Scales, Weights, &c., in great variety.

WHEELOCK, FINLAY & CO.,

IMPORTERS

AND

WHOLESALE DRUGGISTS,

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We keep constantly on hand a large and complete stock of

PURE AND FRESH DRUGS

bought exclusively for CASH, and are prepared to fill all orders entrusted to our care with accuracy and dispatch, and at the lowest possible market rates.

We deal in none but

FIRST CLASS GOODS,

and all medicines sold by us are

GUARANTEED TO BE FRESH AND UNADULTERATED.

The success of the physician often depends on the quality of the drug prescribed by him, and we believe our patrons will bear us out in the assertion that the quality of the goods we supply cannot be surpassed.

We are agents for some of the LARGEST MANUFACTURING ESTABLISHMENTS (both of this country and Europe) of

CHEMICALS,

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SURGICAL INSTRUMENTS AND APPLIANCES,

and all orders will be filled with attention to furnishing such manufactures as are designated. A full stock of

Pure Liquors and Wines

of all kinds, are also kept on hand

FOR MEDICINAL PURPOSES.

my75-1y50

THE

LOUISIANA SAVINGS BANK,

No. 51 Camp Street,

NEW ORLEANS,

Receives deposits of Fifty Cents and upwards, and allows

SIX PER CENT. INTEREST

On all deposits remaining three months or longer.

INTEREST PAID OR COMPOUNDED SEMI-ANNNALLY.

This Bank is chartered by special Act of the Legislature of Louisiana. The Stockholders are individually liable to the amount of their Stock, and the whole Capital is security for the depositors; this fact makes this institution a very safe depository of money.

Married women and children can deposit, subject to their own draft only.

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DAVID WALLACE,

OFFICERS.

E. C. PALMER, President. JAMES JACKSON, Vice President.

JOHN S. WALTON, Cashier.

DEPOSITS RECEIVED SATURDAY EVENINGS FROM SIX TILL EIGHT O'CLOCK.

GUARANTEE RATES.

FOR A YEAR OR LESS PERIOD.

Government and all other securities, including Bank Bills	$1 00	per	$1,000
Gold Coin or Bullion	1 25	"	1,000
Silver Coin or Bullion	2 00	"	1,000
Silver or Gold Plate; under seal, ou owner's estimate of full value, and rate subject to adjustment for bulk, on a basis of	1 00	"	1,000

Deeds, Mortgages, Valuable Papers generally, when of no fixed value, $1 00 a year each, or according to bulk.

Wills $5 00, which premium covers the remainder of the life of the maker.

Cash Boxes, or small Tin Boxes, for papers of Bankers, Capitalists, Merchants, Lawyers, Tradesmen, Families, etc., will be received at $25 each box or trunk per year, contents unknown to the Company, and liability limited, or they will be insured for the full amount, contents known, at above rates. No charge less than one dollar.

The Company is prepared to offer for RENT (the Lessee exclusively holding the key or combination),

SAFES INSIDE ITS BURGLAR-PROOF VAULT,

At rates varying from $15 to $100, according to size and location.

COUPONS AND INTEREST WILL BE COLLECTED WHEN DESIRED, AND REMITTED TO THE OWNERS, FOR WHICH ONE PER CENT. ON AMOUNT COLLECTED WILL BE CHARGED.

Circulars forwarded on Request.

SECURITY OF PREMISES.

The new building, containing the Burglar-Proof Vault on its first floor, is a massive structure. The Burglar-Proof Vault is safe, beyond question, and well ventilated, as is also each small Safe therein. The Internal Police of the office has been organized with care, to protect its dealers. The Company have a constant private night watch inside their premises, which are open to the observation of the city night police. And for still further protection they have constant communication by telegraph with Police Headquarters.

The main Vault, or safe, is constructed of alternate plates of steel and iron, is believed to be the largest, strongest and most secure that has ever been constructed, and occupies a space about twenty feet square, immediately in the centre of the building, on the first floor. The doors of the Vault, when closed, are locked with five distinct locks. The Vault is fitted inside with some 3,600 Safes, of wrought iron, each of which has a distinct and different lock. 2,500 of which are combination, and the rest key locks. They are constructed with such care and precision, that no key will unlock any other lock than that to which it belongs. Each safe, of the three smaller sizes, will be fitted with a substantial tin box, with lock and key, for the convenience of renters.

No pains, care or expense, has been spared to make the building perfect in all its appointments, and worthy of public patronage. my75-1y00

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This company is now ready to take risks against loss or damage by fire or river.

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my75-1y-60

CITIZENS' SAVINGS BANK,

Grunewald Hall, No. 22 Baronne Street, New Orleans,

Will pay interest at 6 per cent. per annum on all savings deposits. Interest added to principal in January and July of each year.

Practice Industry and Economy,

and you will always be prepared to meet and successfully resist adversity. By industry you earn and by economy you save money, and there is no place so secure as a

Savings Bank.

properly conducted to deposit your daily weekly, or monthly earnings, which are not required for your necessary expenses When thus deposited your money is constantly

Working and Earning

more for you in the shape of interest. While you may be sick and not able to earn anything, your money is constantly accumulating and compounding—if the interest is not withdrawn—and becomes a powerful coadjutor to assist you in earning the

First Thousand Dollars,

which generally settles the question of business life with most men.

Young Men and Women

should constantly keep before them the fact that extravagance and want of thrift are the most prolific causes of poverty and destitution, and the forerunners of nearly all the

Crime and Disease

with which the human race is afflicted. The time has come for the young people of the South to examine seriously the situation of the country and the people, and see what can be done towards correcting the habits of

Extravagance and Self-Indulgence

which have proved such hindrances to our material advancement. We must draw lessons from our past misfortunes, and force circumstances as helpers into the harness. In other words we MUST learn to SAVE. It is the mission of the

Citizens' Savings Bank, specially

to assist and encourage you in your efforts to improve your condition, by affording you a sure and safe deposit for your money, where you can at any time control it according to your own needs or desires without any previous notice.

He that Begins Life

with a determination to lay up something—no matter how little—for the future, out of his present gains, will get rich, although it may take him years.

The Result is Sure

to come in time and fortunes thus accumulated very rarely are lost, and riches thus hoarded hardly ever have wings. This fact should be a lesson to those who wish to succeed in life as farmers, as well as for any other class.

The following figures will show how rapidly interest accumulates:

$5 Per Week Accumulates

In 5 years to	$1,520 90	In 15 years to	$9,355 90
In 10 years to	3,584 10	In 30 years to	26,785 05

$10 Per Month Accumulates

In 5 years to	$ 699 87	In 15 years to	$2,904 38
In 10 years to	1,640 30	In 30 years to	10 077 30

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APOTHECARY AND CHEMIST,

115 East Market, Louisville, Ky.,

Manufactures by his Improved Method,

Saccharated Pepsin,

which has proven its superiority over other Pepsins by its greater strength, by its stability and uniformity, and by its almost entire tastelessness.

Concentrated Dry Pepsin,

of which one grain digests 100 to 125 grains of coagulated albumen in four to six hours, and

LIQUID PEPSIN,

of which one ounce dissolves 90 grains of albumen.

ALL ARTICLES WARRANTED.

my75-1y25

UNIVERSITY OF THE CITY OF NEW YORK.

MEDICAL DEPARTMENT.

410 East Twenty-Sixth Street, opposite Bellevue Hospital, New York City.

THIRTY-FIFTH ANNUAL SESSION, 1875-'76.

FACULTY OF MEDICINE.

REV. HOWARD CROSBY, D.D., Chancellor of the University.
MARTYN PAINE, M.D., L.L.D., Emeritus Professor of Materia Medica and Therapeutics.
ALFRED C. POST, M.D., L.L.D., Emeritus Professor of Clinical Surgery; President of the Faculty.
CHARLES A. BUDD, M.D., Professor of Obstetrics,
JOHN C. DRAPER, M.D., L.L.D., Professor of Chemistry.
ALFRED L. LOOMIS, M.D., Professor of Pathology and Practice of Medicine,
WM. DARLING, A.M., M.D., F.R.C.S., Professor of Anatomy.
WM. H THOMSON, M.D., Professor of Materia Medica and Therapeutics.
J. W. S. ARNOLD, M.D., Professor of Physiology.
JOHN T. DARBY, M.D., Professor of Surgery.
CHAS. INSLEE PARDEE, M.D., Professor of Diseases of the Ear; Dean of the Faculty.
ERSKINE MASON, M.D., Professor of Clinical Surgery.
WALTER R. GILLETTE, M.D., Adjunct Professor of Obstetrics.
WM. STRATFORD, M.D., Adjunct Professor of Chemistry.

POST GRADUATE FACULTY.

D. B. St. JOHN ROOSA, M.D., Professor of Ophthalmology and Otology.
WM. A. HAMMOND, M.D., Professor of Diseases of the Mind and Nervous System.
STEPHEN SMITH, M.D., Professor of Orthopædic Surgery and Surgical Jurisprudence.
MONTROSE A. PALLEN, M.D., Professor of Gynæcology.
FANEUIL D. WEISSE, M.D., Professor of Surgical Anatomy.
HENRY G. PIFFARD, M.D., Professor of Dermatology.

THE PRELIMINARY WINTER SESSION commences September 15th, 1875, and continues till the opening of the regular session. It is conducted on the same plan as the Regular Winter Session.

THE REGULAR WINTER SESSION occupies four and a half months—commencing on September 29th and continuing till the middle of February. The system of instruction embraces a thorough Didactic and Clinical Course, the lectures being illustrated by two clinics each day. One of these daily clinics will be held either in Bellevue or the Charity Hospital. The location of the College building affords the greatest facilities for Hospital Clinics. It is opposite the gate of Bellevue Hospital, on Twenty-sixth street, and in close proximity to the ferry to Charity Hospital on Blackwell's Island, while the Department of Out-door Medical Charity, and the Hospital Post-mortem Rooms, are across the street. The students of the University Medical College will be furnished with admission tickets to these establishments free of charge. The Professors of the practical chairs are connected with one or both of these Hospitals.

Besides the Hospital clinics, there are eight clinics each week in the College building.

The Faculty desire to call attention particularly to the opportunities for dissection. *Subjects are abundant and are furnished free of charge*, and the Professor of Anatomy spends several hours each day in demonstration in the dissecting-room.

THE POST GRADUATE COURSE will begin September 29th, 1875, and continue during the Regular Winter Session.

FEES FOR THE WINTER COURSE.

For course of Lectures	$140 00
Matriculation	5 00
Demonstrator's fee, including material for dissection	10 00
Graduation Fee	30 00

FEES FOR THE SPRING COURSE.

Students who have attended the Winter Course will be admitted free of charge. Those who have not attended the Winter Course will be required to pay the Matriculation Fee and $30; and, should they decide to become pupils for the Winter, the $30 thus paid will be deducted from the price of the Winter tickets.

For the purpose of assisting meritorious individuals, the Faculty will receive a few *beneficiaries*, each of whom will be required to pay $43 per annum and the Matriculation Fee.

For further particulars and circulars, address the Dean,

Prof. CHARLES INSLEE PARDEE, M.D.,

jy, sep & nov *University Medical College*, 410 *East 26th Street, New York City.*

HARVARD UNIVERSITY,

Medical Department,

BOSTON, MASS.

NINETY-SECOND ANNUAL ANNOUNCEMENT. (1875-76.)

Faculty of Medicine:

CHARLES W. ELIOT, L.L.D., President.
CALVIN ELLIS, M.D., Professor of Clinical Medicine, Dean.
JOHN B. S. JACKSON, M.D., Professor of Pathological Anatomy.
OLIVER W. HOLMES, M.D., Professor of Anatomy.
HENRY J. BIGELOW, M.D. Professor of Surgery.
JOHN E. TYLER, M.D., Professor of Mental Diseases.
CHAS. E. BUCKINGHAM, M.D., Professor of Obstetrics and Medical Jurisprudence.
FRANCIS MINOT, M.D., Hersey Professor of the Theory and Practice of Medicine.
JOHN P. REYNOLDS M.D., Instructor in Obstetrics.
HENRY W. WILLIAMS, M.D., Professor of Ophthalmology.
DAVID W. CHEEVER, M.D., Adjunct Professor of Clinical Surgery.
JAMES C. WHITE, M.D., Professor of Dermatology.
ROBERT T. EDES, M.D., Assistant Professor of Materia Medica.
HENRY P. BOWDITCH, M.D., Assistant Professor of Physiology.
CHAS. B. PORTER, M.D., Demonstrator of Anatomy and Instructor in Surgery.
FREDERICK I. KNIGHT, M.D., Instructor in Percussion, Auscultation and Laryngoscopy.
J. COLLINS WARREN, M.D., Instructor in Surgery.
REGINALD H. FITZ. M.D., Assistant Professor of Pathological Anatomy.
THOMAS DWIGHT, Jr., M.D., Instructor in Histology.
EDWARDS. WOOD, M.D., Assistant Professor of Chemistry.
HENRY H. A. BEACH, M.D., Assistant Demonstrator of Anatomy.
WM. B. HILLS, M.D, Instructor in Chemistry.

OTHER INSTRUCTORS.

FRANCIS B. GREENOUGH, M.D., and EDWARD WIGGLESWORTH, JR., M.D. *Lecturers on Syphilis.*
GEO. F. H. MARKOE, *Instructor in Materia Medica.*
WM. L. RICHARDSON, *Instructor in Obstetrics.*
J. ORNE GREEN, M.D., and CLARENCE J. BLAKE, M.D., *Lecturers on Otology.*
JAMES R. CHADWICK, M.D., *Lecturer on Diseases of Women.*
CHAS. P. PUTNAM M.D., *Lecturer on Diseases of Children.*
JAMES J. PUTNAM, M.D., *Lecturer on Diseases of the Nervous System.*

The plan of study was radically changed in 1871.* Instruction is given by lectures, recitations, clinical teaching, and practical exercises, distributed throughout the academic year. This year begins Sept. 30th, 1875, and ends on the last Wednesday in June, 1876. It is divided into two equal terms, with a recess of one week between them. Either of these two terms is more than equivalent to the former "Winter Session," as regards the amount and character of the instruction. The course of instruction has been greatly enlarged, so as to extend over three years, and has been so arranged as to carry the student progressively and systematically from one subject to another in a just and natural order. In the subjects of anatomy, histology, chemistry, and pathological anatomy, laboratory work is largely substituted for, or added to, the usual method of instruction.

Instead of the customary, hasty, oral examination for the degree of Doctor of Medicine, held at the end of the three years' period of study, a series of written examinations on all the main subjects of medical instruction has been distributed through the whole three years; and every candidate for the degree must pass a satisfactory examination in every one of the principal departments of medical instruction during his period of study

DIVISION OF STUDIES.

For the First Year—Anatomy, Physiology, and General Chemistry.
For the Second Year—Medical Chemistry, Materia Medica, Pathological Anatomy, Theory and Practice of Medicine, Clinical Medicine, Surgery, and Clinical Surgery.
For the Third Year—Therapeutics, Obstetrics, Theory and Practice of Medicine, Clinical Medicine, Surgery, and Clinical Surgery.

Students are divided into three classes, according to their time of study and proficiency. Students who began their professional studies elsewhere may be admitted to advanced standing; but all persons who apply for admission to the second or third year's class, must pass an examination in the branches already pursued by the class to which they seek admission. Examinations are held in the following order:

* In and after September, 1877, an examination on entrance will be required. For particulars see catalogue.

At the end of the first year—Anatomy, Physiology, and General Chemistry.
End of second year—Medical Chemistry, Materia Medica, and Pathological Anatomy.
End of third year—Therapeutics, Obstetrics, Theory and Practice of Medicine, Clinical Medicine, and Surgery.

Examinations are also held before the opening of the School, beginning September 27th.

Students who do not intend to offer themselves for a degree will also be received at any part of the course, for one term or more. Any student may obtain, without an examination, a certificate of his period of connection with the school.

REQUIREMENTS FOR A DEGREE.—Every candidate must be twenty-one years of age, must have studied medicine three full years, have spent at least one continuous year at this School, have passed the required examinations, and have presented a thesis.

COURSE FOR GRADUATES.—For the purpose of affording to those already Graduates of Medicine additional facilities for pursuing clinical, laboratory and other studies, in such subjects as may specially interest them, the Faculty has established a course which comprises the following branches: Histology; Physiology; Medical Chemistry; Pathological Anatomy; Surgery; Auscultation, Percussion and Laryngoscopy; Ophthalmology; Dermatology; Syphilis; Psychological Medicine; Otology; Electro-Therapeutics; Gynæcology; and Obstetrics.

Single branches may be pursued, and on payment of the full fee also the privilege of attending any of the other exercises of the Medical School, the use of its laboratories and library, and all other rights accorded by the University will be granted. Graduates of other Medical Schools who may desire to obtain the degree of M.D. at this University will be admitted to examination for this degree after a year's study in the Graduates' Course.

FEES.

For Matriculation	$ 5 00
For the year	200 00
For one term alone	120
For Graduation	30
For Graduates' Course, the fee for one year is	200
" " " " " " Term	120 00

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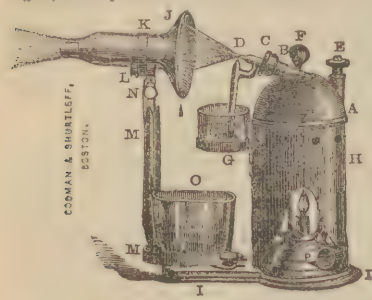

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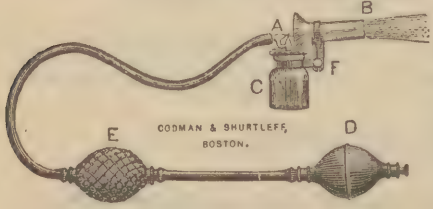

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"I have tested CINCHO-QUININE, and have found it to contain *quinine, quinidine, cinchonine,* and *cinchonidine.*"

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LABORATORY OF THE UNIVERSITY OF CHICAGO, February 1, 1875.

"I hereby certify that I have made a chemical examination of the contents of a bottle of CINCHO-QUININE, and by direction I made a qualitative examination for *quinine, quinidine,* and *cinchonine,* and hereby certify that I found these alkaloids in CINCHO-QUININE."

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"I have made a careful analysis of the contents of a bottle of your CINCHO-QUININE, and find it to contain *quinine, quinidine, cinchonine,* and *cinchonidine.*"

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4th. It meets indications not met by that Salt.

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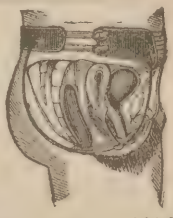

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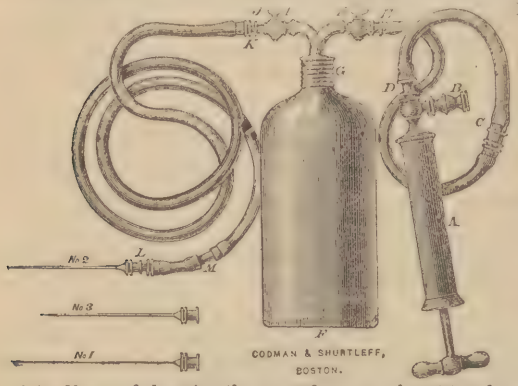

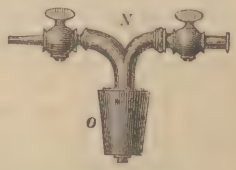

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SESSIONS OF 1875-1876.

THE COLLEGIATE YEAR in this Institution embraces a preliminary Autumnal Term, the Regular Winter Session, and a Summer Session.

THE PRELIMINARY AUTUMNAL TERM for 1875-1876 will commence on Wednesday, September 15th, 1875, 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, September 30th, 1874, and end about the 1st of March, 1875.

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 o Women.

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Professor of the Principles and Practice of Medicine and Clinical Medicine.

W. H. VAN BUREN, M. D.,
Prof. of Principles of Surgery with Diseases of the Genito-Urinary System and Clinical Surgery.

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Professor of Orthopedic Surgery, Fractures and Dislocations, and Clinical Surgery.

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WILLIAM T. LUSK, M. D.,
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EDMUND R. PEASLEE M. D., LL. D.,
Professor of Gynæcology.

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.

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R. OGDEN DOREMUS, M D.,
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PROFESSORS OF SPECIAL DEPARTMENTS, ETC.

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Professor of Ophthalmology andOtology.

JOHN P. GRAY, M.D.,
Professor of Physiological Medicine and Medical Jurisprudence.

EDWARD L. KEYES, M D.,
Professor of Dermatology, and Assistant to the Chair of Principles of Surgery

EDWARD G. JANEWAY, M. D.,
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.

The Summe Session will consist chiefly of Recitations from Text-books. This term continues from the middle of March to the end of June. 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.

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Fees for Tickets to all Lectures during the Preliminary and Regular Term, including Clinical Lectures	$140 00
Matriculation Fee	5 00
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FEES FOR THE SUMMER SESSION.

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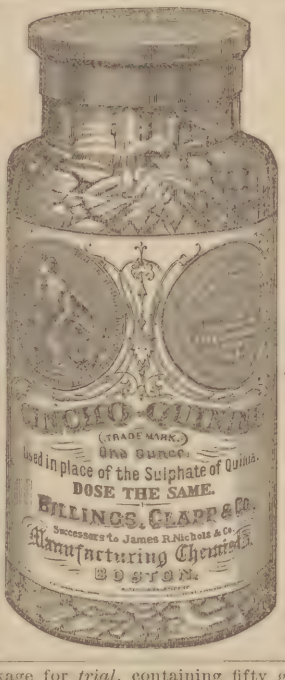

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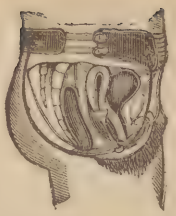

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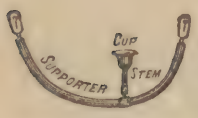

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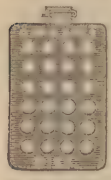

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Fig. 68.

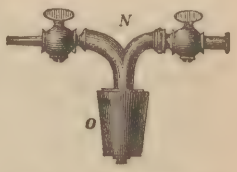

Fig. 69. The Stopper and Cocks supplied with Apparatus No. 2.

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SESSIONS OF 1875-1876.

THE COLLEGIATE YEAR in this Institution embraces a preliminary Autumnal Term, the Regular Winter Session, and a Summer Session

THE PRELIMINARY AUTUMNAL TERM for 1875-1876 will commence on Wednesday, September 15th, 1875, 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, September 30th, 1874, and end about the 1st of March, 1875.

FACULTY.

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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.

W. H. VAN BUREN, M. D.,
Prof. of Principles of Surgery with Diseases of the Genito-Urinary System and Clinical Surgery.

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Professor of Clinical and Operative Surgery.

WILLIAM T. LUSK, M. D.,
Professor of Obstetrics and Diseases of Women and Children, and Clinical Midwifery.

EDMUND R. PEASLEE, M. D., LL. D.,
Professor of Gynæcology.

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.

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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

The Summer Session will consist chiefly of Recitations from Text-books. This term continues from the middle of March to the end of June. 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.

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NINETY-SECOND ANNUAL ANNOUNCEMENT. (1875-76.)

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CALVIN ELLIS, M.D., Professor of Clinical Medicine, Dean.
JOHN B. S. JACKSON, M.D., Professor of Pathological Anatomy.
OLIVER W. HOLMES, M.D., Professor of Anatomy.
HENRY J. BIGELOW, M.D. Professor of Surgery.
JOHN E. TYLER, M.D., Professor of Mental Diseases.
CHAS. E. BUCKINGHAM, M.D., Professor of Obstetrics and Medical Jurisprudence.
FRANCIS MINOT, M.D., Hersey Professor of the Theory and Practice of Medicine.
JOHN P. REYNOLDS M.D., Instructor in Obstetrics.
HENRY W. WILLIAMS, M.D., Professor of Ophthalmology.
DAVID W. CHEEVER, M.D., Adjunct Professor of Clinical Surgery.
JAMES C. WHITE, M.D., Professor of Dermatology.
ROBERT T. EDES, M.D., Assistant Professor of Materia Medica.
HENRY P. BOWDITCH, M.D., Assistant Professor of Physiology.
CHAS. B. PORTER, M.D., Demonstrator of Anatomy and Instructor in Surgery.
FREDERICK I. KNIGHT, M.D., Instructor in Percussion, Auscultation and Laryngoscopy.
J. COLLINS WARREN, M.D., Instructor in Surgery.
REGINALD H. FITZ, M.D., Assistant Professor of Pathological Anatomy.
THOMAS DWIGHT, Jr., M.D., Instructor in Histology.
EDWARD S. WOOD, M.D., Assistant Professor of Chemistry.
HENRY H. A. BEACH, M.D., Assistant Demonstrator of Anatomy.
WM. B. HILLS, M.D., Instructor in Chemistry.

OTHER INSTRUCTORS.

FRANCIS B. GREENOUGH, M.D., and EDWARD WIGGLESWORTH, JR., M.D. *Lecturers on Syphilis.*
GEO. F. H. MARKOE, *Instructor in Materia Medica.*
WM. L. RICHARDSON, *Instructor in Obstetrics.*
J. ORNE GREEN M.D., and CLARENCE J. BLAKE, M.D., *Lecturers on Otology.*
JAMES R. CHADWICK, M.D., *Lecturer on Diseases of Women.*
CHAS. P. PUTNAM M.D., *Lecturer on Diseases of Children.*
JAMES J. PUTNAM, M.D., *Lecturer on Diseases of the Nervous System.*

The plan of study was radically changed in 1871.* Instruction is given by lectures, recitations clinical teaching, and practical exercises, distributed throughout the academic year. This year begins Sept. 30th, 1875, and ends on the last Wednesday in June, 1876. It is divided into two equal terms, with a recess of one week between them. Either of these two terms is more than equivalent to the former "Winter Session," as regards the amount and character of the instruction. The course of instruction has been greatly enlarged, so as to extend over three years, and has been so arranged as to carry the student progressively and systematically from one subject to another in a just and natural order. In the subjects of anatomy, histology, chemistry, and pathological anatomy, laboratory work is largely substituted for, or added to, the usual method of instruction.

Instead of the customary, hasty, oral examination for the degree of Doctor of Medicine, held at the end of the three years' period of study, a series of written examinations on all the main subjects of medical instruction has been distributed through the whole three years; and every candidate for the degree must pass a satisfactory examination in every one of the principal departments of medical instruction during his period of study.

DIVISION OF STUDIES.

For the First Year—Anatomy, Physiology, and General Chemistry.
For the Second Year—Medical Chemistry, Materia Medica, Pathological Anatomy, Theory and Practice of Medicine, Clinical Medicine, Surgery, and Clinical Surgery.
For the Third Year—Therapeutics, Obstetrics, Theory and Practice of Medicine, Clinical Medicine, Surgery, and Clinical Surgery.

Students are divided into three classes, according to their time of study and proficiency. Students who began their professional studies elsewhere may be admitted to advanced standing; but all persons who apply for admission to the second or third year's class, must pass an examination in the branches already pursued by the class to which they seek admission. Examinations are held in the following order:

* In and after September, 1877, an examination on entrance will be required. For particulars see catalogue.

At the end of the first year—Anatomy, Physiology, and General Chemistry.
End of second year—Medical Chemistry, Materia Medica, and Pathological Anatomy.
End of third year—Therapeutics, Obstetrics, Theory and Practice of Medicine, Clinical Medicine, and Surgery.

Examinations are also held before the opening of the School, beginning September 27th.

Students who do not intend to offer themselves for a degree will also be received at any part of the course, for one term or more. Any student may obtain, without an examination, a certificate of his period of connection with the school.

REQUIREMENTS FOR A DEGREE.—Every candidate must be twenty-one years of age, must have studied medicine three full years, have spent at least one continuous year at this School, have passed the required examinations, and have presented a thesis.

COURSE FOR GRADUATES.—For the purpose of affording to those already Graduates of Medicine additional facilities for pursuing clinical, laboratory and other studies, in such subjects as may specially interest them, the Faculty has established a course which comprises the following branches: Histology; Physiology; Medical Chemistry; Pathological Anatomy; Surgery; Auscultation, Percussion and Laryngoscopy; Ophthalmology; Dermatology; Syphilis; Psychological Medicine; Otology; Electro-Therapeutics; Gynæcology; and Obstetrics.

Single branches may be pursued, and on payment of the full fee also the privilege of attending any of the other exercises of the Medical School, the use of its laboratories and library, and all other rights accorded by the University will be granted. Graduates of other Medical Schools who may desire to obtain the degree of M.D. at this University will be admitted to examination for this degree after a year's study in the Graduates' Course.

FEES.

For Matriculation	$ 5 00
For the year	200
For one term alone	120
For Graduation	30
For Graduates' Course, the fee for one year is	200
" " " " " " Term	120 00

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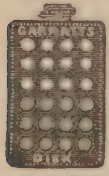

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Thirty-Sixth and Locust Streets, Philadelphia.

110th ANNUAL SESSION, 1875-76.

MEDICAL FACULTY.

George B. Wood, M.D., LL.D., Emeritus Professor of Theory and Practice of Medicine; Henry H. Smith, M.D., Emeritus Professor of Surgery.

Joseph Carson, M.D., Prof. of Materia Medica and Pharmacy; Robert E. Rogers, M.D. Prof. of Chemistry; Joseph Leidy, M.D., LL. D., Prof. of Anatomy; Francis G. Smith, M.D., Prof. of Institutes of Medicine; R. A. F. Penrose, M.D., Prof. of Obstetrics and Diseases of Women and Children; Alfred Stille, M.D., Prof. of Theory and Practice of Medicine and Clinical Medicine; D. Hayes Agnew, M D., LL.D., Prof. of Surgery.

Demonstrator of Anatomy, H. Lenox Hodge, M.D.; of Surgery, Charles T. Hunter, M D.; of Practical Chemistry, George M. Ward, M.D.; of Experimental Physiology, Isaac Ott, M.D.

Clinical Instruction is given at the University Hospital as follows: Surgery, Profs. Agnew and J. Neill; Medicine, Prof. Pepper; Diseases of Women and Children, Prof. Goodell; Diseases of the Eye, Prof Norris; Diseases of the Ear, Prof. Strawbridge; Nervous Diseases, Prof. H. C. Wood, Jr.; Skin Diseases, Prof. L. A. Duhring; Morbid Anatomy and Histology, Prof. J. Tyson.

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Fees.—For one full course, $140; or, for each professor's ticket separately, $20. Matriculation fee (paid once only), $5. These fees are payable in advance. Graduation fee, $30.

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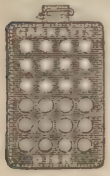

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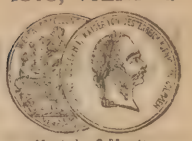
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CAUTION.—In order to guard against imitations each bottle will hereafter be sealed by a red metallic capsule, bearing the stamp of our trade mark, and secured by a band having a fac-simile of the medals, and the signature of Hottot, the manufacturer.

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GENERAL AGENTS FOR THE U. S.

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The attention of the Medical Profession is respectfully invited to

HEMATOSINE,

OF TABOURIN & LEMAIRE, Chemists.

This new preparation, recently introduced in Europe, may be truly called a

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HEMATOSINE constitutes the **basis of the red globules of the blood,** and is the organic substance now known, **which is richest in assimilable iron.**

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It will be found a most efficacious remedy for **Anæmia, Chlorosis, Leucorrhœa, Amenorrhœa, Dysmenhorrœa, General Debility, Slow Convalescence, &c.**

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THE ENTIRE ABSENCE OF ERUCTATIONS,

which are sure to follow the use of gelatine capsules containing liquid Copaiba.

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OF UNCHANGEABLE IODIDE OF IRON.

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The waters of the **Ste. Marie Spring** are very efficacious in **Anœmia, Chlorosis, Intermittent Fevers,** and very remarkable results have been obtained from their use in the treatment of **Diabetes.**

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The Weekly Medical and Surgical Reporter.

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The publications whose titles are given above merit the attention of all physicians who would keep abreast of the literature of the profession.

THE REPORTER

Is published every Saturday, in pamphlet form, neatly bound and cut. It contains twenty to twenty-four large, double-columned pages of reading matter, printed on fine paper, in clear and new type.

The REPORTER ranks among its contributors many of the most eminent practitioners and surgeons of the United States. Not to go beyond the numbers for the first volume of the current year, we find among their names those of Professors D. H. AGNEW, J. M. DA COSTA, W. W. DAWSON, A. HEWSON, A. JACOBI, R. J. LEVIS, W. PEPPER, L. A. SAYRE, J. S. WIGHT, J. R. WOOD, Drs. J. SOLIS COHEN, A. M. HAMILTON, S. WEIR MITCHELL, L. TURNBULL, and numerous others.

The REPORTER aims especially to be a *practical* journal, and gives its chief attention, therefore, to the diagnosis and treatment of disease.

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Forms a volume of three hundred large octavo pages. It appears on the first of January and July. It covers the whole ground of Medical Science, distributed under the following headings:—I. Anatomy, Physiology, and Pathology. II. Physics, Botany, Chemistry, and Toxicology. III. Materia Medica and Therapeutics. IV. General Medicine and Sanitary Science. V. Clinical Medicine. VI. Obstetrics and Diseases of Women and Children. VII. Surgery.

No article appears in both the REPORTER *and* COMPENDIUM. None is duplicated in these two journals. The latter is intended to supplement and complete the former in the departments of medicine which are less immediately practical.

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TO THE MEDICAL PROFESSION.

A NEW AND IMPORTANT REMEDY.

LACTOPEPTINE.

LACTOPEPTINE contains all the agents of digestion that act upon food, from mastication to its conversion into chyle, and is therefore the most important remedy for Dyspepsia that has ever been produced.

The digestive power of LACTOPEPTINE *is seven times greater than any preparation of Pepsin in the market, as it has the important advantage of dissolving all aliment used by mankind, while Pepsin acts only upon plastic food.*

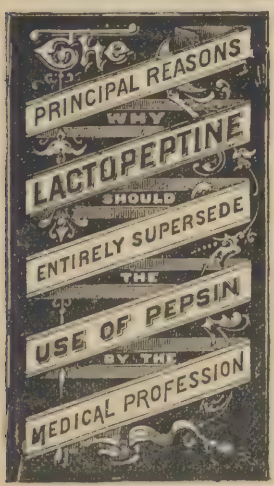
This preparation has now been in the hands of the Medical Profession for two years, during which time its therapeutic value has been most thoroughly established in cases of **Dyspepsia, Intestinal diseases of Children, Chronic Diarrhœa, Constipation, Vomiting in Pregnancy or Dyspepsia, Headache, and all diseases arising from Imperfect nutrition.**

One of the most important applications of LACTOPEPTINE *is in those cases where the digestive organs are unable, from debility, to properly prepare for assimilation the remedies indicated. In such cases combine it with the remedy indicated.*

LACTOPEPTINE, *as well as all other preparations of our manufacture, is prepared strictly for the use of the Medical Profession, and is kept invariably in their hands.*

FORMULA OF LACTOPEPTINE.

Sugar of Milk,	. .	20 *Ounces.*	*Veg. Ptyalin or Diastase,* . 1 *Drachm.*
Pepsin,	. . .	4 "	*Lactic Acid,* . . 2½ *fl. Drachms.*
Pancreatine,	. . .	3 "	*Hydrochloric Acid,* 2½ *fl.* "
			Powder and Mix.



1st.—It will digest from three to four times more *coagulated albumen* than any preparation of Pepsin in the market.

2d.—It will emulsionize and prepare for assimilation the oily and fatty portions of food, Pepsin having no action upon this important alimentary article.

3d.—It will change the *starchy* portions of vegetable food into the assimilable form of Glucose.

4th.—It contains the natural acids secreted by the stomach (*Lactic and Hydrochloric*), without which Pepsin and Pancreatine will not change the character of coagulated albumen.

5th.—Experiments will readily show that the digestive power of the ingredients of Lactopeptine, when two or more are combined, is much greater than when separated. Thus, 4 grs. of Pepsin and 4 grs. of Pancreatine mixed, will dissolve one-third more albumen than the combined digestive power of each agent separately in same length of time.

6th.—IT IS MUCH LESS EXPENSIVE TO PRESCRIBE. It dissolves nearly four times as much coagulated albumen as Pepsin, besides digesting all other food taken by the human stomach. *An ounce of Lactopeptine is, therefore fully equal in digestive power to seven ounces of Pepsin, yet it is furnished at about the same price.*

All the statements made in this Circular are the result of repeated and careful experiments.

The palatability and digestive power of LACTOPEPTINE has been more than doubled during the past two months, by producing several of its component parts free from all extraneous matter, and we now believe it is not susceptible of any further improvement.

Physicians who have not given LACTOPEPTINE a trial in their practice, are respectfully requested to read the following opinions of some of our leading Practitioners as to its merits as an important remedial agent.

IN ADDITION TO THE FOLLOWING RECOMMENDATIONS, WE HAVE RECEIVED OVER SEVEN HUNDRED COMMENDATORY LETTERS FROM PHYSICIANS, A LARGE NUMBER OF WHICH ENUMERATE CASES WHERE PEPSIN ALONE HAD FAILED TO BENEFIT, BUT FINALLY HAD BEEN TREATED SUCCESSFULLY WITH LACTOPEPTINE.

——oo——

The undersigned, having tested REED & CARNRICK'S preparation of Pepsin, Pancreatine, Diastase, Lactic Acid and Hydrochloric Acid, made according to published formulæ, and called *Lactopeptine*, find that in those diseases of the stomach where the above remedies are indicated, it has proven itself a desirable, useful and well adapted addition to the usual pharmaceutical preparations, and therefore recommend it to the profession.

NEW YORK, *April 6th*, 1875.

J. R. LEAMING, M. D.,
Attending Physician at St. Luke's Hospital.

ALFRED L. LOOMIS, M. D.,
Professor of Pathology and Practice of Medicine, University of the City of New York.

JOSEPH KAMMERER, M. D.,
Clinical Professor of Diseases of Women and Children, University of the City of New York.

LEWIS A. SAYRE, M. D.,
Professor of Orthopœdec Surgery and Clinical Surgery, Belevue Hospital Medical College.

EDWARD G. JANEWAY, M. D.
Professor Pathological and Practical Anatomy, and Lecturer on Materia Medica and Therapeutics and Clinical Medicine.

SAMUEL R. PERCY, M. D.,
Professor Materia Medica, New York Medical College.

J. H. TYNDALL, M. D.,
Physician at St. Francis' Hospital.

JOSEPH E. WINTERS, M. D.,
House Physician Belevue Hospital.

GEO. F. BATES, M. D.,
House Surgeon Belevue Hospital.

——oo——

INEBRIATE ASYLUM, NEW YORK, March 25th, 1875.

I have carefully watched the effects of *LACTOPEPTINE*, as exhibited in this institution, for about six months, especially in the treatment of Gastritis, and it gives me pleasure to be able to say that I have found the best results from it, supplying as it does an abnormal void of nature in the secretions of the stomach. N. KEELER MORTON., M. D.

——oo——

BRANDON, VT., March 31st, 1875.

I desire to say that I have used *LACTOPEPTINE* for a year, not only on my friends, but also in my own case, and have found it one of the most valuable aids to digestion that I have ever used. A. T. WOODWARD, M. D.,
Late Professor of Obstetrics and Diseases of Women and Children Vermont Med. College.

——oo——

EXTRACT FROM A REPORT UPON THE USES OF LACTOPEPTINE,
BY J. KING MERRITT, M. D., FLUSHING, L. I.

About six months since I saw a notice of *LACTOPEPTINE* and its analysis in a Medical Journal, and having long ago recognized the inability of Pepsin to reach those cases in which the several processes of digestion are all more or less involved, I immediately commenced the use of *LACETOPEPTINE* in my own case. This was, in brief, an inherited, fostered, persistent condition of General Dyspepsia, which I had treated for several years with Pepsin, finding in its use good service, although the general results were discouraging.

A large proportion of diseases are the result of imperfect digestion.

In all cases when the stomach is unable to digest and appropriate the remedies indicated, they should be combined with Lactopeptine.

The effect of *LACTOPEPTINE* on my powers of digestion has far surpassed my expectations, and its remedial qualities in numerous cases, more or less complicated, have been all that I could desire. In these cases *LACTOPEPTINE* was associated with other remedies indicated, for the purpose of facilitating their assimilation, which is so often nullified by a disordered and debilitated condition of the digestive organs.*

I will now give, in brief, an epitome of a case recovering under the use of *LACTOPEPTINE*. She was a married lady, who five years ago became afflicted with diarrhœa, which had baffled every mode of intelligent treatment. She had an intestinal flux, body much emaciated, and her entire health was greatly impaired. I treated her with *LACTOPEPTINE*, in conjunction with other remedies, many of which had been formerly used without avail. She is now rapidly recovering.

I shall only add that the more my experience, in its varied applicability, extends, the more its beneficial effects appear.

——oo——

NEWTON, IOWA, May 10th, 1875.

I have been using *LACTOPEPTINE* for several months, and after a careful trial in stomach and bowel troubles, find that it has no equal. In all cases of indigestion and lack of assimilation, it is a most splendid remedy. H. E. HUNTER, M. D.

——oo——

WEST NEWFIELD, ME., June 14th, 1875.

LACTOPEPTINE seems to be all that it is recommended to be. It excels all remedies that I have tried in aiding a debilitated stomach to perform its functions.

STEPHEN ADAMS, M. D.

——oo——

WOLCOTT, WAYNE CO., N. Y., June 29th, 1875.

From the experience I have had with *LACTOPEPTINE*, I am of the opinion that you have produced a remedy which is capable of fulfilling an important indication in a greater variety of diseases than any medicine I have met with in a practice of over 45 years. JAMES M. WILSON, M. D.

——oo——

BROWNVILLE, N. Y., August 3d, 1875.

Some time since I received a small package of *LACTOPEPTINE*, which I have used in a case of long standing Dyspepsia. The subject is a man 40 years of age; has had this ailment over 10 years. I never had so bad a case before, and I have been practicing medicine 21 years. Your *LACTOPEPTINE* seems just the remedy he needs. He is improving finely, and can now eat nearly any kind of food without distress. I have several cases I shall take hold of as soon as I can obtain the medicine.

W. W. GOODWIN, M. D.

——oo——

EDDYVILLE, WAPELLO CO., IOWA, May 5th, 1875.

I have used the *LACTOPEPTINE* in my practice for the last eighteen months, and find it to be one of our great remedies in all diseases of the stomach and bowels. I was called last fall to see a child three years old, that was almost in the last struggles of death with Cholera Infantum. I ordered it teaspoonful doses of Syrup of Lactopeptine, and in a few days the child was well. I could not practice without it.

F. C. CORNELL, M. D.

——oo——

CORTLAND, DE KALB CO., ILL., August 12th, 1875.

I received recently a small package of *LACTOPEPTINE* with the request that I should try it in a severe case of Dyspepsia. I selected a case of a lady who has been a sufferer over 30 years. She reported relief after the first dose, and now, after using the balance of the package in doses of three grains, three times daily, says she has received more benefit from it than from any other remedy she had ever tried.

G. W. LEWIS, M. D.

* We desire particularly to call the attention of the Profession to the great value of LACTOPEPTINE when used in conjunction with other remedies, especially in those cases in which the digestive organs are unable, from debility, to properly prepare for assimilation the remedies indicated.

One drachm of Lactopeptine will digest ten ounces of Coagulated Albumen, while the same quantity of any standard preparation of Pepsin in the market will dissolve but three ounces.

One drachm of Lactopeptine dissolved in four fluid drachms of water will emulsionize sixteen ounces of Cod Liver Oil.

CHILLICOTHE, MO., September 4th, 1874.

I have used *LACTOPEPTINE* this summer with good effect in all cases of weak and imperfect digestion, especially in children during the period of dentition, cholera infantum, &c. I regard it, decidedly, as being the best combination containing Pepsin that I have ever used. J. A. MUNK, M. D.

——oo——

FORT DODGE, IOWA, November 15th, 1874.

I have fairly tried, during the past summer and fall, your *LACTOPEPTINE*, and consider it a most useful addition to the list of practical remedies. I have found it especially valuable in the *gastro-intestinal* diseases of children. W. L. NICHOLSON, M. D.

——oo——

WHITE HALL, VA. January 4th, 1875.

A short time since I sent for some of your *LACTOPEPTINE*, which I used in the case of a lady who had been suffering with dyspepsia for over twelve months, and who had taken Pepsin, and other remedies usually prescribed in that disease, with very little benefit. I ordered the *LACTOPEPTINE*, and was pleased to find a decided improvement after a few days, which has steadily increased. At the present time she appears to have entirely recovered. Very truly, E. B. SMOKE, M. D.

——oo——

INDIANOLA, IOWA, December 11th, 1874,

I consider the *LACTOPEPTINE* a heaven-sent remedy for all digestive troubles. I gave it to a lady troubled with exhaustive nausea and vomiting from pregnancy, with immediate and perfect relief, after all other remedies had failed. She was almost in *articulo mortis*. The third day after taking the *LACTOPEPTINE* she was able to be up. I was called in council the other day to a case of Intussusception; the patient was vomting stercoracious matter; had retained no nutrition for several days. I gave the *LACTOPEPTINE* with immediate relief. Ingestion was retained I relieved the bowels by inflation, got an operation, and the patient will recover. I consider the *LACTOPEPTINE* was his *sheet anchor*. I am now using the *LACTOPEPTINE* in Cancer of the Stomach—the only medicine that gives the patient any relief. It seems to act as an anodyne in his case more so than morphine. C. W. DAVIS, M. D.

——oo——

CONTOCOOK, N. H., November 25th, 1874.

After a thorough trial, I believe *LACTOPEPTINE* to be one of the most important of the new remedies that have been brought to the attention of physicians during the last ten years. I have used it in several cases of vomiting of food from dyspepsia, and in the vomiting from pregnancy, with the best of success. The relief has been immediate in every instance. In some of the worst cases of Cardialgia, heretofore resisting all other treatment, *LACTOPEPTINE* invariably gave immediate relief. It has accomplished more, in my hands, than any other remedy of its class I ever met with, and I believe no physician can safely be without it. It takes the place of Pepsin, is more certain in its results, and is received by patients of all ages without complaint, being a most pleasant remedy. I have used *LACTOPEPTINE* in my own case, having been troubled with feelings of weight in the stomach and distress after eating, but always have obtained immediate relief upon taking the elixir in teaspoonful doses. GEO. C. BLAISDELL, M. D.

——oo——

MO. VALLEY, IOWA, November 12th, 1874

Some months since I saw in a medical journal a notice of your *LACTOPEPTINE*. Having in charge a patient in whose case I thought it was indicated, I prescribed it in 5 gr. doses. He used it about a week and was greatly benefited. I failed to procure more just then, so I gave him Pepsin instead, the patient thinking it to be the same prescription. After two days he returned to my office saying that "the last medicine did'nt hit the spot, but that which you gave me last week was just the thing, and has given me more relief than any medicine I have ever taken." I consider this a fair test (so far as it goes) of the merits of this new, and I think, invaluable remedy. G. W. COIT, M. D.

One drachm of Lactopeptine will transform four ounces of Starch into Glucose.

Pancreatine and Diastase are more important digestive agents than Pepsin.

COMMUNICATIONS FROM MEDICAL JOURNALS.

We have for several months been prescribing various preparations of medicine containing *LACTOPEPTINE* as an important aid to digestion. It may be advantageously combined with cod liver oil, calisaya, iron, bismuth, quinine and strychnia. *LACTOPEPTINE* is composed of pepsin, ptyalin, pancreatine, lactic acid and hydrochloric acid—pepsin, lactic and hydrochloric acids being in the gastric juice, ptyalin in the saliva, and pancreatine emulsionizing fatty substances. The theory of its action being rational, we have prescribed the various preparations referred to above with more evidence of benefit than we ever observed from pepsin.—*St. Louis Medical and Surgical Journal*, September, 1874.

—oo—

AN ARTICLE ON LACTOPEPTINE, BY LAURENCE ALEXANDER, M. D., OF YORKVILLE, S. C., IN THE *ATLANTA MEDICAL AND SURGICAL JOURNAL*, NOVEMBER, 1874.

Some time ago a small box, labelled "Physicians' Samples *LACTOPEPTINE*" was placed in my hands, with the request that I would give it a trial upon some one suffering from dyspepsia. Having, like other physicians, a large *per centum* of just such cases always on hand, in which various medicines and remedies had been used without success, I gladly consented, hoping that something had really been found at last to supply the want felt by every practitioner in the treatment of this troublesome complaint. After several months' experience in the use of this preparation, in which it has been thoroughly tested upon a large number of patients with such gratifying results, I am induced to recommend it to the consideration of the profession, feeling confident that, with due care in their diagnosis, and the many little cautions always necessary, such as restricting the excessive use of fluids while eating, etc., and a little patience on the part of the sufferer, its good effects will be seen beyond a doubt.

While I employ it extensively in many deranged conditions of the bowels incident to infancy and childhood, I find it equally efficacious in constipation and all diseases arising from imperfect nutrition in the adult. In sickness of pregnancy it answers well, far exceeding, in my hands, oxalate of cerium, extract lupulin, or the drop doses of carbolic acid, so highly extolled by some practitioners. In its combination with iron, quinine and strychnia, we have the advantage of using, in cases of great nervous depression and debility peculiar to the dyspeptic, our most valuable agent in a truly elegant form.

TO TEST THE DIGESTIVE POWER OF LACTOPEPTINE IN COMPARISON WITH ANY PREPARATION OF PEPSIN IN THE MARKET.

To five fluid ounces of water add one drachm of Lactopeptine, half drachm of Hydrochloric Acid, 10 ounces Coagulated Albumen, allowing it to remain from two to six hours at a temperature of 105 deg., agitating it occasionally.

Lactopeptine is prepared in the form of Powder, Sugar Coated Pills Elixir, Syrup, Wine and Troaches.

LACTOPEPTINE is also combined with the following preparations:

EMULSION OF COD LIVER OIL WITH LACTOPEPTINE.

This combination will be found superior to all other forms of Cod Liver Oil in affections of the Lungs and other wasting diseases. Used in Coughs, Colds, Consumption, Rickets, Constipation, Skin Diseases and Loss of Appetite.

The Oil in this preparation being partly digested before taken, will usually agree with the most debilitated stomach. Although we manufacture seven other preparations of Cod Liver Oil, we would recommend the above as being superior to either of them. It is very pleasant to administer, compared with the plain Oil, and will be readily taken by children

—oo—

EMULSION OF COD LIVER OIL WITH LACTOPEPTINE AND LIME.

Each ounce of the Emulsion contains 16 grs. Lactopeptine and 16 grs. Phosphate Lime.

—oo—

ELIXIR LACTOPEPTINE.

The above preparation is admirably adapted in those cases where Physicians desire to prescribe Lactopeptine in its most elegant form.

REED & CARNRICK manufacture a full line of Fluid Extracts.

BEEF, IRON AND WINE WITH LACTOPEPTINE.

In those debilitated dyspeptic cases when an Iron Tonic, combined with the strengthening properties of Extract of Beef and Wine are indicated, this preparation will be found most efficacious.

——oo——

ELIXIR PHOSPHATE OF IRON, QUININE AND STRYCHNIA WITH LACTOPEPTINE.

There can be no combination more suitable than the above in cases of Nervous and General Debility, attended with Dyspepsia.

——oo——

ELIXIR LACTOPEPTINE, STRYCHNIA AND BISMUTH.

A valuable combination in cases of Dyspepsia attended with Nervous Debility.

——oo——

ELIXIR GENTIAN AND CHLORIDE OF IRON WITH LACTOPEPTINE.

An elegant and reliable remedy in cases of Dyspepsia attended with General Debility.

——oo——

SYRUP LACTOPEPTINE COMP.

Each ounce contains 24 grains Lactopeptine, 8 grains Phosphate of Iron, 8 grains Phosphate Lime, 8 grains Phosphate Soda, and 8 grains Phosphate Potash.

This preparation will be found well suited to cases of General Debility arising from impaired digestion, and also of great value in Pulmonary Affections.

——oo——

FORMULÆ.

The following valuable formulæ have been contributed by J. KING MERRITT, M.D., *who has used them with great success in his practice:*

NO. 1.—FOR INTERMITTENT FEVER WITH CONGESTION OF LIVER.

℞	Liquid Lactopeptine,	dr.	vi.
	Fl. Ex. Cinchona Comp,	dr.	i.
	Fl. Ex. Taraxacum,	—	
	Tinct. Zingiber, aa	dr.	iij.
	Hydrochloric Acid Dilut.,	dr.	i.
	Spts. Lavender Comp.,	dr.	ii.
	Sulphate Quinia,	grs.	xl.

M. *Dose.*—One teaspoonful every two or three hours.
SIG.—Quinine mixture or tonic mixture.

REMARKS.

This mixture should be taken every two hours in the case of a quotidian attack, as soon after the subsidence of the paroxysms as the stomach will accept it, or even during the sweating stage, if the stomach is not especially irritable, and should be continued until the hour of anticipated paroxysms at the same rate, except during the night, from 10 P. M. to 4 A. M., as a general rule. Six to eight doses to be taken during the first interval, and if the attack does not recur, then continue the mixture daily for one week, at a rate diminished by one hour each day.

NO. 2.—FOR INTERMITTENT FEVER WITH IRRITABLE STOMACH.

℞	Liquid Lactopeptine,	dr.	vi.
	Fl. Ex. Cinchona Comp,	dr.	i.
	Tinct. Zingiber,	dr.	iii.
	Spts. Lavender Comp,	dr.	v.
	Aromatic Sulphuric Acid,	dr.	i.
	Essence Menth, Pip. or Gaultheria,	gtts.	x.
	Sulphate Quinia,	grs.	xl.

M. *Dose.*—One teaspoonful with water *ad libitum* every two or three hours, as in Formula No. 1, and in accordance with the type of the attack. Begin at the rate indicated;

that is, if "Tertian," every three hours, and then after first interval, if the paroxysm does not recur, continue mixture at a diminished rate each succeeding day, as indicated in remarks appended to Formula No. 1, to wit: by increasing the period of time between each dose of medicine an hour every day until a week has passed, when the frequency of a dose will be reduced to three times a day, at which rate it should be continued until complete restoration of appetite and strength.

NO. 3.—FOR MALARIAL DYSPEPSIA.

℞

Liquid Lactopeptine,		dr. fl. vi.
Fl. Ex. Cinchona Com.,		—
Tinc. Nux. Vomica,	aa	dr. xi.
Spts. Lavender Comp.,		oz. ss.
Hydrocyanic Acid Dilut,		dr. ss.
Syr. Aromatic Rhubarb,		oz. ss.
Sulphate Quinine,		dr. ss.

M. *Dose.*—One tablespoonful with water *ad libitum* at meals (before or after), and *at bed time if required;* also, use in addition after the meals full doses of Pulv. Lactopeptine with Spts. Lavender Comp. and Lime Water, *in case the patient should suffer from positive signs of indigestion, although the dose of Formula No. 3 has already been taken at the meal time,* either immediately before or after eating, in accordance with the rule or foregoing instruction.

NO. 4.—FOR CHRONIC DIARRHŒA.

℞

Liquid Lactopeptine,	dr. vi.
Liq. Opii. Comp. (Squibbs'),	dr. iii.
Nitric Acid Dilute; or, Aqua Regia Dilut.,	dr. i.
Syr. Aromatic Rhubarb,	dr. ii.
Pulv. Nit. Bismuth,	dr. ss.
Aqua Camph.,	oz. ss.

M. *Dose.*—One tablespoonful with water after each flux from bowels, and as a rule, at bed time, even if the diarrhœa is apparently checked at that hour, and *this rule,* should be *persisted in* for two or three days, or until the diarrhœal tendency has been entirely subdued.

——oo——

PEPSIN—PANCREATINE—DIASTASE.

In addition to *LACTOPEPTINE* we manufacture PEPSIN, PANCREATINE and DIASTASE. They are put up separately in one ounce and pound bottles.

They will be found equal in strength with any other manufacture in the world.

They are all presented in a saccharated form, and are therefore very palatable to administer.

COMP. CATHARTIC ELIXIR.

The only pleasant and reliable Cathartic in liquid form that can be prescribed.

Each fl. oz. contains:

Sulph. Magnesia,	1 dr.
Senna,	2 "
Scammony,	6 grs.
Liquorice,	1 dr.
Ginger,	3 grs.
Coriander,	5 "

With flavoring ingredients.

Dose,—Child five years old, one or two teaspoonfuls; adult, one or two tablespoonfuls.

This preparation is being used extensively throughout the country. It was originated with the design of furnishing a liquid Cathartic remedy that could be prescribed in a palatable form. It will be taken by children with a relish.

MAINE INSANE HOSPITAL, AUGUSTA, Feb. 25th, 1875.

I am happy to say that we are much pleased with the Compound Cathartic Elixir. It has, so far, proved the best Liquid Cathartic we have ever used in our Institution. It acts effectively and kindly, without irritation or pain. H. M. HARLOW, M. D.

Private Formulas of Pills or other preparations made to order.

Strychnia Compound Pill.

Strychnia, - - -	1-100 grain.
Phosphorus, - - -	1-100 "
Ex. Cannabis Indica,	1-16 "
Ginseng, - - - -	1 "
Carb. Iron, -	1 "

Dose—One to two.

A reliable and efficient Pill in Anaphrodisia, Paralysis, Neuralgia, Loss of Memory, Phthisis, and all affections of the Brain resulting from loss of Nerve Power. Price, 80 cents per hundred.

Sent by mail, prepaid, on receipt of price.

Hæma, Quinia and Iron Pill.

Ext. Blood, - - - -	2 grains.
Quinine Sulph., - -	1 grain.
Sesqui Oxide Iron, - -	1 "

Dose—One to three.

Price, $2.00 per hundred.

Sent by mail, prepaid, on receipt of price.

—oo—

HÆMA PILLS.

We beg to present to the Medical Profession for their special consideration our several preparations of Blood Pills. The use of Blood medicinally, and the importance of its administration in a large class of diseases, has arrested the attention of many of the leading Physicians of Europe, and has received their warmest attestation. Prominent among these may be mentioned Prof. Panum, of the University of Copenhagen, who is using it with great success in the hospital of that city.

At the abattoir in this city, Boston, and in every part of the country, there can be seen numerous persons afflicted with Pulmonary Affections, Chlorosis, Paralysis, Anemia, and other ailments, who are daily drinking the blood of the ox, and many with more benefit than they have derived from any other source.

The blood used by us being *Arterialized Male Bovine only*, is secured as it flows from the animal in a vacuum pan, and the watery portion (85 per cent.), eliminated at a temperature not exceeding 100° F., the remaining mass, containing every constituent of the blood, being the base of our preparations.

HÆMA (Ext. Blood), 4 grs.

Dose.—Two to four.

90 cts. per hundred.

HÆMA COMP.

Ext. Blood, 2 grs.
Lacto-Phosphate Lime, 1 gr.
Pepsin, 2 gr.

Dose.—One to three.

$1.50 per hundred.

HÆMA, QUINIA, IRON AND STRYCHNIA.

Ext. Blood, 2 grs.
Quinine Sulph., 1 gr.
Sesqui Oxide Iron, 1 gr.
Strychnine, 1-75 gr.

Dose.—One to three.

$2.00 per hundred.

Samples sent to Physicians, postage prepaid, on receipt of price.

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LACTOPEPTINE and most of our leading preparations can be obtained from the principal Druggists of the United States.

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SUGAR COATED PILLS, TROCHES AND POWDERS CAN BE SECURELY SENT BY MAIL.

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Price of LACTOPEPTINE by Mail.

One ounce sent by mail, prepaid, on receipt of . . .	$1 00
One pound " " " " " . . .	13 00

A fraction of an ounce or pound sent by mail on receipt of corresponding price.

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We guarantee all goods of our manufacture.

In ordering, please designate R. & C.'s manufacture.

Send for PRICE LIST, DOSE BOOKS and DISCOUNTS.

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198 FULTON STREET, NEW YORK.

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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, nearly six thousand patients. Its advantages for professional study are unsurpassed 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.

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